# **TOSHIBA**

## **SERVICE MANUAL** AIR-CONDITIONER (MULTI TYPE)

### <SUPER MODULAR MULTI SYSTEM - e>

**Outdoor Unit** 

Model name:

### Last Dump Madab





<heat model="" pump=""></heat>		
MMY-MAP0806HT8(J)P MMY-MAP1006HT8(J)P MMY-MAP1206HT8(J)P MMY-MAP1406HT8(J)P MMY-MAP1606HT8(J)P MMY-MAP1806HT8(J)P MMY-MAP2006HT8(J)P MMY-MAP2206HT8(J)P	MMY-MAP0806HT7(J)P MMY-MAP1006HT7(J)P MMY-MAP1206HT7(J)P MMY-MAP1406HT7(J)P MMY-MAP1606HT7(J)P MMY-MAP1806HT7(J)P MMY-MAP2006HT7(J)P MMY-MAP2206HT7(J)P	MMY-MAP0806HT8(J)P-ME MMY-MAP1006HT8(J)P-ME MMY-MAP1206HT8(J)P-ME MMY-MAP10A6HT8(J)P-ME MMY-MAP12A6HT8(J)P-ME MMY-MAP1406HT8(J)P-ME MMY-MAP1606HT8(J)P-ME MMY-MAP16A6HT8(J)P-ME MMY-MAP1806HT8(J)P-ME MMY-MAP1806HT8(J)P-ME
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MMY-MAP0806HT8P-A MMY-MAP1006HT8P-A MMY-MAP1206HT8P-A MMY-MAP1406HT8P-A MMY-MAP1606HT8P-A MMY-MAP1806HT8P-A MMY-MAP2006HT8P-A <cooling model="" only=""></cooling>	MMY-MAP1606HT8P-C MMY-MAP1806HT8P-C MMY-MAP2006HT8P-C MMY-MAP2206HT8P-C	
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MMY-MAP1406T8P-SG MMY-MAP1606T8P-SG MMY-MAP18B6T8P-SG MMY-MAP1806T8P-SG MMY-MAP2006T8P-SG MMY-MAP2206T8P-SG	MMY-MAP1406T8(J)P-ID MMY-MAP1606T8(J)P-ID MMY-MAP18B6T8(J)P-ID MMY-MAP1806T8(J)P-ID MMY-MAP2006T8(J)P-ID MMY-MAP2206T8(J)P-ID	MMY-MAP1406T8(J)P-T MMY-MAP1606T8(J)P-T MMY-MAP18B6T8(J)P-T MMY-MAP1806T8(J)P-T MMY-MAP2006T8(J)P-T MMY-MAP2206T8(J)P-T

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This service manual provides relevant explanations about new outdoor unit (SMMS-e). Please refer to the following service manuals for each indoor units.

	SVM File No.
<4-way Cassette Type>	
(MMU-AP***4HP-E) (Made in Thailand model)	SVM-13011
(MMU-AP***4HY-C) (Made in China model)	A10-1402
(MMU-AP***2H-C) (Made in Japan model)	A11-008-2
<2-way Cassette Type>	
(MMU-AP****WH)	A10-007
(MMU-AP***2WH-C) (Made in Japan model)	A11-008-2
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(MMD-AP****BHP*) (Made in Thailand model)	SVM-14069
(MMD-AP***6BHY-C) (Made in China model)	A10-1415
(MMD-AP***4BH-C) (Made in Japan model)	A11-008-2
<slim duct="" type=""></slim>	
(MMD-AP2244SPH-E, AP274SPH-E)	A12-005
(MMD-AP***6M(P)HY-C) (Made in China model)	A10-1403
(MMD-AP***4S(P)H-C) (Made in Japan model)	A11-008-2
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(MMD-AP***6HP*) (Made in Thailand model)	SVM-15032
(MMD-AP***4H-C) (Made in Japan model)	A11-008-2
<high-wall compact="" type=""></high-wall>	
(MMK-AP****MH-E) (Made in Thailand model)	SVM-05052-1
<high-wall type=""></high-wall>	
(MMK-AP****H*) (Made in Thailand model)	SVM-09059
<ceiling type=""></ceiling>	
(MMC-AP***7HP*) (Made in Thailand model)	SVM-13085
(MMC-AP***4H-C) (Made in Japan model)	A11-008-2
<floor standing="" type=""></floor>	
(MMF-AP***6H*)	A10-1420
(MMF-AP***4H-C) (Made in Japan model)	A11-008-2
Console Type	
(MML-AP****NH-E) (Made in Thailand model)	SVM-11012
(MML-AP***4NH-C) (Made in Thailand model)	SVM-11036
<air air="" coil="" dx="" exchanger="" heat="" to="" type="" unit="" with=""></air>	
(MMD-VN****HEXE*)	A10-022
<fresh air="" indoor="" intake="" type="" unit=""></fresh>	
(MMD-AP****HFE)	A06-016
<hot module="" water=""></hot>	
(MMW-AP****LQ-E)	A10-1412
<other indoor="" units=""></other>	
(MM*-AP****H*)	A10-033
(MM*-AP***4*H-C) (Made in Japan model)	A11-008-2

# **SAFETY CAUTION**

Please read carefully through these instructions that contain important information which complies with the "Machinery" Directive (Directive 2006/42/EC), and ensure that you understand them. Some of the details provided in these instructions differ from the service manual, and the instructions provided here take precedence.

#### 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	<ul> <li>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.</li> <li>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.</li> <li>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 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 individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.</li> <li>The qualified installer who is allowed to work at heights has been trained in matters relating to working at heights wi</li></ul>
Qualified service person	<ul> <li>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.</li> <li>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.</li> <li>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, she is a person who has been trained in matters relating to refrigerant handling and piping work on the air conditioners made by to she has been instructed in such matters by an individual who have been trained and is thus thoroughly acquainted to this work.</li> <li>The qualified service person who is allowed to work at heights has been trained and is thus thoroughly acquainted to this work.</li> </ul>

### **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 to wear
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 at heights (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 and from heat

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	
	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.	
	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.	
	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

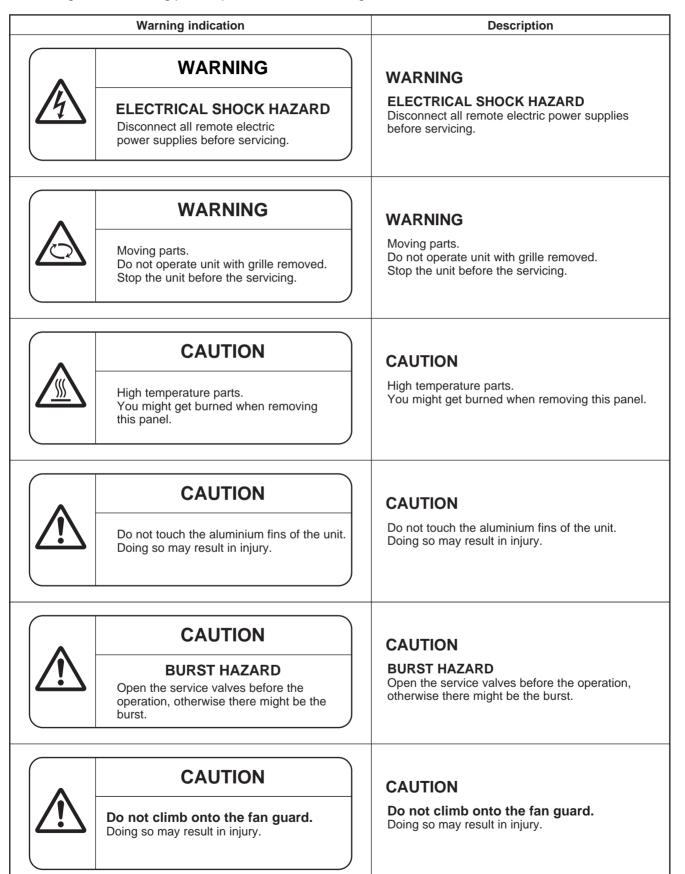
#### [Explanation of illustrated marks]

Indication	Explanation
$\bigcirc$	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.
$\triangle$	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.



## PRECAUTIONS FOR SAFETY

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

## 

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 intake grille 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 (*1) or qualified service person (*1) 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.
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.
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.
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.
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 (*1) is allowed to do this kind of work.

## 

	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 (*1) 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 (*1) or qualified service person (*1) 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 transporting the air conditioner, wear shoes with protective toe caps, protective gloves and other protective clothing.
	Wear protective gloves and safety work clothing during installation, servicing and removal.
	When connecting the electrical wires, repairing the electrical parts or undertaking 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.
	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.
	Only a qualified installer (*1) or qualified service person (*1) is allowed to undertake work at heights using a stand of 50 cm or more or to remove the intake grille of the indoor unit to undertake work.
0	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.
General	When 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.
	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.
	When transporting the air conditioner, wear shoes with additional protective toe caps.
	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 (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.
	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.
Check earth wires.	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.
<b>O</b> No fire	<ul> <li>When performing repairs using a gas burner, replace the refrigerant with nitrogen gas because the oil that coats the pipes may otherwise burn.</li> <li>When repairing the refrigerating cycle, take the following measures.</li> <li>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.</li> <li>2) Do not use a welder in the closed room. When using it without ventilation, carbon monoxide poisoning may be caused.</li> <li>3) Do not bring inflammables close to the refrigerant cycle, otherwise fire of the welder may catch the inflammables.</li> </ul>
	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. To prevent miss-charging, the route of the service port is changed from one of the former R22.
	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.
Refrigerant	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.
	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 injury.
	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.
	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 M $\Omega$ 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.

	When the refrigerant gas leaks during work, execute ventilation.
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.
	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.
Compulsion	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.
	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.
Check after repair	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.	<ul> <li>Check the following matters before a test run after repairing piping.</li> <li>Connect the pipes surely and there is no leak of refrigerant.</li> <li>The valve is opened.</li> <li>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.</li> </ul>
	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.
Check after reinstallation	<ul> <li>Check the following items after reinstallation.</li> <li>1) The earth wire is correctly connected.</li> <li>2) The power cord is not caught in the product.</li> <li>3) There is no inclination or unsteadiness and the installation is stable.</li> <li>If check is not executed, a fire, an electric shock or an injury is caused.</li> </ul>
	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 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.
	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 electric shock and heat.
Cooling check	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.

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	Only a qualified installer (*1) or qualified service person (*1) is allowed to install the air conditioner. If the air conditioner is installed by an unqualified individual, a fire, electric shocks, injury, water leakage, noise and/or vibration may result.
	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.
	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.
	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.
Installation	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.
	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 be generated.
	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 (*1).
	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 (\*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.
- 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.

(\*1) Refer to the "Definition of Qualified Installer or Qualified Service Person"

### **Declaration of Conformity**

Manufacturer:	TOSHIBA CARRIER (THAILAND 144 / 9 Moo 5, Bangkadi Industria Amphur Muang, Pathumthani 120	al Park, Tivanon Road,						
Authorized Representative	/ Nick Ball							
TCF holder:	Toshiba EMEA Engineering Director Toshiba Carrier UK Ltd. Porsham Close, Belliver Industrial Estate, PLYMOUTH, Devon, PL6 7DB. United Kingdom							
Hereby declares that the machinery described below:								
Generic Denomination:	Air Conditioner							
Model / type:	Outdoor unit <heat model="" pump=""> MMY-MAP0806HT8(J)P-E, MMY-MAP1006HT8(J)P-E, MMY-MAP1206HT8(J)P-E, MMY-MAP1406HT8(J)P-E, MMY-MAP1606HT8(J)P-E, MMY-MAP1806HT8(J)P-E, MMY-MAP2206HT8(J)P-E, MMY-MAP1206HT8(J)P-TR, MMY-MAP1206HT8(J)P-TR, MMY-MAP1406HT8(J)P-TR, MMY-MAP1406HT8(J)P-TR, MMY-MAP1606HT8(J)P-TR, MMY-MAP1806HT8(J)P-TR, MMY-MAP1806HT8(J)P-TR, MMY-MAP1806HT8(J)P-TR, MMY-MAP1806HT8(J)P-TR, MMY-MAP1806HT8(J)P-TR, MMY-MAP1806HT8(J)P-TR, MMY-MAP1806HT8(J)P-TR, MMY-MAP2206HT8(J)P-TR,</heat>	<cooling model="" only=""> MMY-MAP0806T8(J)P-E, MMY-MAP1006T8(J)P-E, MMY-MAP1206T8(J)P-E, MMY-MAP1606T8(J)P-E, MMY-MAP1806T8(J)P-E, MMY-MAP2006T8(J)P-E, MMY-MAP2206T8(J)P-E</cooling>						
Commercial name:	Super Modular Multi System Air (	Conditioner						
	Complies with the provisions of the "Machinery" Directive (Directive 2006/42/EC) and the regulations transposing into national law							
Complies with the provision	s of the following harmonized stand EN 378-2: 2008+A2:2012	dard:						

#### NOTE

This declaration becomes invalid if technical or operational modifications are introduced without the manufacturer's consent.

## Specifications

Madal	Sound powe		
Model –	Cooling	Heating	Weight (kg)
MMY-MAP0806HT8(J)P			
MMY-MAP0806HT7(J)P			
MMY-MAP0806HT8(J)PME	74	74	242
MMY-MAP0806HT7P-ME			
MMY-MAP0806HT8P-A			
MMY-MAP1006HT8(J)P			
MMY-MAP1006HT7(J)P			
MMY-MAP1006HT8(J)PME	74	74	242
MMY-MAP1006HT7P-ME			
MMY-MAP1006HT8P-A			
MMY-MAP1206HT8(J)P			
MMY-MAP1206HT7(J)P			
MMY-MAP1206HT8(J)PME	80	82	242
MMY-MAP1206HT7P-ME			
MMY-MAP1206HT8P-A			
MMY-MAP10A6HT8(J)P-ME	00		000
MMY-MAP10A6HT7P-ME	80	82	299
MMY-MAP12A6HT8(J)P-ME			
MMY-MAP12A6HT7P-ME	81	83	299
MMY-MAP1406HT8(J)P			
MMY-MAP1406HT7(J)P			
MMY-MAP1406HT8(J)PME	80	82	299
MMY-MAP1406HT7P-ME	00		200
MMY-MAP1406HT8P-A			
MMY-MAP1606HT8(J)P			
MMY-MAP1606HT7(J)P			
MMY-MAP1606HT8(J)PME	81	83	299
MMY-MAP1606HT7P-ME	01	00	200
MMY-MAP1606HT8P-A			
MMY-MAP1606HT8P-C			
MMY-MAP14A6HT8(J)P-ME			
MMY-MAP14A6HT7P-ME	81	83	370
MMY-MAP16A6HT8(J)P-ME			
MMY-MAP16A6HT7P-ME	82	84	370
MMY-MAP1806HT8(J)P			
MMY-MAP1806HT7(J)P			
MMY-MAP1806HT8(J)PME	81	83	370
MMY-MAP1806HT7P-ME	01	00	570
MMY-MAP1806HT8P-A			
MMY-MAP1806HT8P-C			
MMY-MAP2006HT8(J)P			
MMY-MAP2006HT7(J)P			
MMY-MAP2006HT8(J)PME	82	84	370
MMY-MAP2006HT7P-ME	02		
MMY-MAP2006HT8P-A			
MMY-MAP2006HT8P-C			
MMY-MAP2206HT8(J)P			
MMY-MAP2206HT7(J)P	83	84	370
MMY-MAP2206HT8P-C			

## Specifications

Model	Sound powe	Woight (kg)	
Model	Cooling	Heating	Weight (kg)
MMY-MAP0806HT8(J)P-E		74	242
MMY-MAP0806HT8(J)P-TR	74	74	242
MMY-MAP0806T8(J)P-E		-	241
MMY-MAP1006HT8(J)P-E		74	242
MMY-MAP1006HT8(J)P-TR	74	74	242
MMY-MAP1006T8(J)P-E		-	241
MMY-MAP1206HT8(J)P-E		82	242
MMY-MAP1206HT8(J)P-TR	80	02	242
MMY-MAP1206T8(J)P-E		-	241
MMY-MAP1406HT8(J)P-E		82	300
MMY-MAP1406HT8(J)P-TR	80	02	300
MMY-MAP1406T8(J)P-E		-	299
MMY-MAP1606HT8(J)P-E		83	300
MMY-MAP1606HT8(J)P-TR	81	00	300
MMY-MAP1606T8(J)P-E		-	299
MMY-MAP1806HT8(J)P-E		83	371
MMY-MAP1806HT8(J)P-TR	81	05	571
MMY-MAP1806T8(J)P-E		-	370
MMY-MAP2006HT8(J)P-E		84	371
MMY-MAP2006HT8(J)P-TR	82	04	3/1
MMY-MAP2006T8(J)P-E		-	370
MMY-MAP2206HT8(J)P-E		84	371
MMY-MAP2206HT8(J)P-TR	83	04	3/1
MMY-MAP2206T8(J)P-E		-	370

## Specifications

Model	Sound power level (dBA)	Weight (kg)	
MMY-MAP0806T8(J)P			
MMY-MAP0806T7(J)P			
MMY-MAP0806T8P-SG	74	240	
MMY-MAP0806T8(J)P-ID			
MMY-MAP0806T8(J)P-T			
MMY-MAP1006T8(J)P			
MMY-MAP1006T7(J)P			
MMY-MAP1006T8P-SG	74	240	
MMY-MAP1006T8(J)P-ID			
MMY-MAP1006T8(J)P-T			
MMY-MAP1206T8(J)P			
MMY-MAP1206T7(J)P			
MMY-MAP1206T8P-SG	80	240	
MMY-MAP1206T8(J)P-ID			
MMY-MAP1206T8(J)P-T			
MMY-MAP14B6T8(J)P			
MMY-MAP14B6T7(J)P	-		
MMY-MAP14B6T8P-SG	80	240	
MMY-MAP14B6T8(J)P-ID	-		
MMY-MAP14B6T8(J)P-T	-		
MMY-MAP1406T8(J)P			
MMY-MAP1406T7(J)P	-		
MMY-MAP1406T8P-SG	80	298	
MMY-MAP1406T8(J)P-ID		200	
MMY-MAP1406T8(J)P-T	-		
MMY-MAP1606T8(J)P			
MMY-MAP1606T7(J)P	-		
MMY-MAP1606T8P-SG	81	298	
MMY-MAP1606T8(J)P-ID		200	
MMY-MAP1606T8(J)P-T	-		
MMY-MAP18B6T8(J)P			
MMY-MAP18B6T7(J)P	-		
MMY-MAP18B6T8P-SG	81	298	
MMY-MAP18B6T8(J)P-ID		230	
MMY-MAP18B6T8(J)P-T	-		
MMY-MAP1806T8(J)P			
	-		
MMY-MAP1806T7(J)P MMY-MAP1806T8P-SG	81	369	
		509	
		1	
MMY-MAP2006T8(J)P			
MMY-MAP2006T7(J)P	82	260	
MMY-MAP2006T8P-SG		369	
MMY-MAP2206T7(J)P			
MMY-MAP2206T8P-SG	83	369	
MMY-MAP2206T8(J)P-ID	_		
MMY-MAP2206T8(J)P-T			

# **CARRYING IN THE OUTDOOR UNIT**

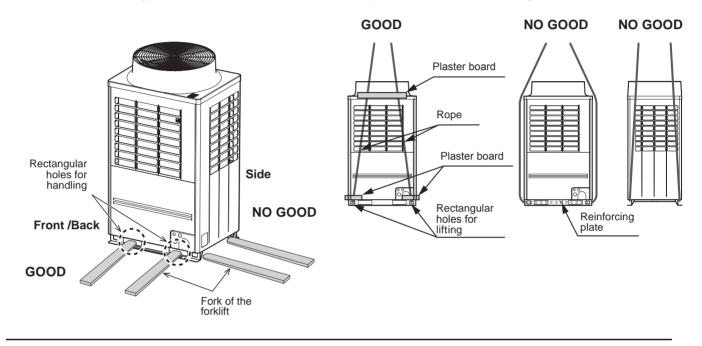
#### 

Handle the outdoor unit carefully, observing the following items.

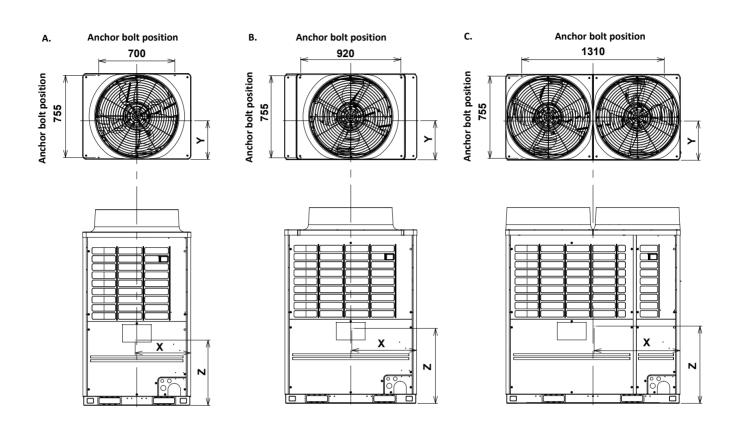
- When using a forklift or other machinery for loading/unloading in transportation, insert the fork of the forklift into the rectangular holes for handling as shown below.
- When lifting up the unit, insert a rope able to bear the unit's weight into the rectangular holes for handling, and tie the unit from 4 sides.

(Apply padding in positions where the rope comes into contact with the outdoor unit so that no damage is caused to the outer surface of the outdoor unit.)

(There are reinforcing plates on the side surfaces, so the rope cannot be passed through.)



## ■ Weight centre

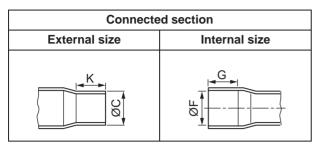


(Unit : mm)

No.	Model type	X (mm)	Y (mm)	Z (mm)
	MMY-MAP0806(H)T*(J)P*			
А	MMY-MAP1006(H)T*(J)P*	510	355	600
A	MMY-MAP1206(H)T*(J)P*	510	222	000
	MMY-MAP14B6T*(J)P*			
	MMY-MAP10A6HT*(J)P-ME			
	MMY-MAP12A6HT*(J)P-ME		360	690
	MMY-MAP1406(H)T*(J)P*	595		
	MMY-MAP1606(H)T*(J)P*			
	MMY-MAP18B6T*(J)P*			
	MMY-MAP14A6HT*(J)P-ME			
	MMY-MAP16A6HT*(J)P-ME			
С	MMY-MAP1806(H)T*(J)P*	790	360	710
	MMY-MAP2006(H)T*(J)P*			
	MMY-MAP2206(H)T*(J)P*			

# **SELECTION OF PIPE SIZE**

### Coupling size of brazed pipe



(Unit: mm)

Standard outer dia.	External size	Internal size	Min. d	anth of			
of connected copper pipe	Standard outer dia. (Allowable difference)			epth of rtion	Oval value	Min. thickness of coupling	
	С	F	K G				
6.35	6.35 (±0.03)	6.45 ( <sup>+0.04</sup> <sub>-0.02</sub> )	7	6	0.06 or less	0.50	
9.52	9.52 (±0.03)	9.62 (+0.04 )	8	7	0.08 or less	0.60	
12.70	12.70 (±0.03)	12.81 (+0.04 )	9	8	0.10 or less	0.70	
15.88	15.88 (±0.03)	16.00 (+0.04 )	9	8	0.13 or less	0.80	
19.05	19.05 (±0.03)	19.19 (+0.03 )	11	10	0.15 or less	0.80	
22.22	22.22 (±0.03)	22.36 (+0.03 )	11	10	0.16 or less	0.82	
28.58	28.58 (±0.04)	28.75 (+0.06 )	13	12	0.20 or less	1.00	
34.92	34.90 (±0.04)	35.11 ( <sup>+0.04</sup> <sub>-0.04</sub> )	14	13	0.25 or less	1.20	
38.10	38.10 (±0.05)	38.31 ( <sup>+0.08</sup> <sub>-0.02</sub> )	15	14	0.27 or less	1.26	
41.28	41.28 (±0.05)	41.50 ( <sup>+0.08</sup> <sub>-0.02</sub> )	15	14	0.28 or less	1.35	

## ■ Screw size and tightening torque

	Screw size	Tightening torque (N•m)
Power supply terminal	M6	2.5 to 3.0
Earth screw	M8	5.5 to 6.6
Communication wire terminal	M4	1.2 to 1.4

### Adding refrigerant

After finishing vacuuming, exchange the vacuum pump with a refrigerant canister and start additional charging of refrigerant.

#### Calculation of additional refrigerant charge amount

Refrigerant charge amount at shipment from the factory does not include the refrigerant for pipes at the local site. For refrigerant to be charged in pipes at the local site, calculate the amount and charge it additionally.

#### NOTE

If the additional refrigerant amount indicates minus as the result of calculation, use the air conditioner without additional refrigerant.

Outdoor unit type	MAP080	MAP100	MAP120	MAP10A	MAP12A	MAP140	MAP160	MAP14A	MAP16A	MAP180	MAP200	MAP220
Charged amount (kg)						11.5			_			
Cooling only model												
Outdoor unit type	MAP080	MAP100	MAP120	MAP14B	MAP140	MAP160	MAP18B	MAP180	MAP200	MAP220	]	
Charged amount (kg)	10.5 11.5						]					

Charged amount (kg) 10.5

Additional refrigerant charge amount at site = [1] + [2] + [3] [1]. Compensation by system HP (Table 1-1~1-6) [2]. Additional refrigerant charge amount Indoor unit (Table 2)

[3]. (Real length of liquid pipe × Additional refrigerant charge amount per liquid pipe 1 m (Table 3) ) × 1.2

#### Table 1-1; For HT8P, HT7P model

	System	Combination		Charged refrigerant	Compensation by System HP	
	HP		HP		kg	kg
	8	8	-	-	11.5	-3.5
	10	10	-	-	11.5	-3.5
	12	12	-	-	11.5	-1.5
	14	14	-	-	11.5	-1.0
	16	16	-	-	11.5	-0.5
	18	18	-	-	11.5	1.5
	20	20	-	-	11.5	1.5
	22	22	-	-	11.5	1.5
	24	12	12	-	23	-3.0
	26	14	12	-	23	-2.5
	28	16	12	-	23	-2.0
	30	16	14	-	23	-1.5
	32	16	16	-	23	-1.0
Standard model	34	18	16	-	23	1.0
	36	20	16	-	23	1.0
	38	22	16	-	23	1.0
	40	20	20	-	23	3.0
	42	22	20	-	23	3.0
	44	22	22	-	23	3.0
	46	16	16	14	34.5	-6.5
	48	16	16	16	34.5	-6.5
	50	18	16	16	34.5	-0.5
	52	20	16	16	34.5	-0.5
	54	22	16	16	34.5	-0.5
	56	20	20	16	34.5	2.5
	58	22	20	16	34.5	2.5
	60	22	22	16	34.5	2.5
	20	10	10	-	23	-7.0
	22	12	10	-	23	-7.0
	36	12	12	12	34.5	-12.5
Ligh officionay model	38	14	12	12	34.5	-10.5
High efficiency model	40	14	14	12	34.5	-8.5
	42	14	14	14	34.5	-4.5
	44	16	14	14	34.5	-4.5
	54	20	20	14	34.5	1.5

#### Table1-2-1 ; For HT8P-ME, HT7P-ME model (Standard)

	System	С	ombinatio	on	Charged refrigerant	Compesation by System HP
	HP		HP		kg	kg
	8	8			11.5	-3.5
	10	10			11.5	-3.5
	12	12			11.5	-1.5
	14	14			11.5	-1.0
	16	16			11.5	-0.5
	18	18			11.5	1.5
	20	20			11.5	1.5
	22	12	10		23	-7.0
	24	12	12		23	-3.0
	26	14	12		23	-2.5
	28	14	14		23	-3.0
	30	16	14		23	-1.5
Standard model	32	16	16		23	-1.0
	34	18	16		23	1.0
	36	18	18		23	3.0
	38	20	18		23	3.0
	40	20	20		23	3.0
	42	14	14	14	34.5	-4.5
	44	16	14	14	34.5	-4.5
	46	16	16	14	34.5	-6.5
	48	16	16	16	34.5	-6.5
	50	18	16	16	34.5	-0.5
	52	18	18	16	34.5	1.5
	54	20	20	14	34.5	1.5
	56	20	20	16	34.5	2.5

#### Table 1-2-2 ; For HT8P-ME, HT7P-ME model (High efficiency)

	System		Combination		Charged refrigerant	Compensation by System HP
	HP		HP (Model type	e)	kg	kg
	10	10A	-	-	11.5	-1.5
	12	12A	-	-	11.5	1.5
	14	14A	-	-	11.5	1.5
	16	16A	-	-	11.5	-5
	18	10A	8	-	23	-3
	20	10A	10A	-	23	-3
	22	12A	10A	-	23	-3
	24	12A	12A	-	23	-3
High-efficiency model	26	14A	12A	-	23	0
mgn-enciency moder	28	14A	14A	-	23	3
	30	16A	14A	-	23	3
	32	16A	16A	-	23	3
	34	12A	12A	10A	34.5	-4.5
	36	12A	12A	12A	34.5	-4.5
	38	14A	12A	12A	34.5	-1.5
	40	14A	14A	12A	34.5	1.5
	42	16A	14A	12A	34.5	1.5
	44	16A	16A	12A	34.5	1.5

	System	Co	ombinati	on	Charged ref	rigerant (kg)	Compensation by System HP
	HP		HP		Heat pump type	Cooling only type	kg
	8	8	-	-	11.5	10.5	-3.5
	10	10	-	-	11.5	10.5	-3.5
	12	12	-	-	11.5	10.5	-1.5
	14	14	-	-	11.5	11.5	-1.0
	16	16	-	-	11.5	11.5	-0.5
	18	18	-	-	11.5	11.5	1.5
	20	20	-	-	11.5	11.5	1.5
	22	22	-	-	11.5	11.5	1.5
	24	12	12	-	23	21	-3.0
	26	14	12	-	23	22	-2.5
	28	16	12	-	23	22	-2.0
	30	16	14	-	23	23	-1.5
	32	16	16	-	23	23	-1.0
Standard model	34	18	16	-	23	23	1.0
	36	20	16	-	23	23	1.0
	38	22	16	-	23	23	1.0
	40	20	20	-	23	23	3.0
	42	22	20	-	23	23	3.0
	44	22	22	-	23	23	3.0
	46	16	16	14	34.5	34.5	-6.5
	48	16	16	16	34.5	34.5	-6.5
	50	18	16	16	34.5	34.5	-0.5
	52	20	16	16	34.5	34.5	-0.5
	54	22	16	16	34.5	34.5	-0.5
	56	20	20	16	34.5	34.5	2.5
	58	22	20	16	34.5	34.5	2.5
	60	22	22	16	34.5	34.5	2.5
	20	10	10	-	23	21	-7.0
	22	12	10	-	23	21	-7.0
	36	12	12	12	34.5	31.5	-12.5
High efficiency	38	14	12	12	34.5	32.5	-10.5
model	40	14	14	12	34.5	33.5	-8.5
	42	14	14	14	34.5	34.5	-4.5
	44	16	14	14	34.5	34.5	-4.5
	54	20	20	14	34.5	34.5	1.5

#### Table1-3 ; For HT8P-E, T8P-E, HT8P-TR model

#### Table1-4 ; For HT8P-A model

	System	(	Combinatio	ı	Charged refrigerant	Compensation by System HP
	HP		HP		kg	kg
	8	8	_	-	11.5	-3.5
	10	10	-	-	11.5	-3.5
	12	12	-	-	11.5	-1.5
	14	14	-	_	11.5	-1.0
	16	16	-	-	11.5	-0.5
	18	18	-	_	11.5	1.5
	20	20	-	-	11.5	1.5
	22	12	10	-	23	-7.0
	24	12	12	_	23	-3.0
	26	14	12	-	23	-2.5
	28	16	12	-	23	-2.0
	30	16	14	_	23	-1.5
Standard model	32	16	16	-	23	-1.0
	34	18	16	-	23	1.0
	36	20	16	_	23	1.0
	38	20	18	-	23	3.0
	40	20	20	_	23	3.0
	42	16	14	12	34.5	-6.5
	44	16	16	12	34.5	-6.5
	46	16	16	14	34.5	-6.5
	48	16	16	16	34.5	-6.5
	50	18	16	16	34.5	-0.5
	52	20	16	16	34.5	-0.5
	54	20	20	14	34.5	1.5
	56	20	20	16	34.5	2.5
	20	10	10	-	23	-7.0
High efficiency model	36	12	12	12	34.5	-12.5
riigh eniciency model	38	14	12	12	34.5	-10.5
	40	14	14	12	34.5	-8.5

	System	(	Combinatio	'n	Charged refrigerant	Compensation by System HP
	HP		HP		kg	kg
	8	8	-	-	10.5	-2.5
	10	10	-	-	10.5	-2.5
	12	12	-	-	10.5	-0.5
	14B	14B	-	-	10.5	-0.5
	16	16	-	-	11.5	-0.5
	18B	18B	-	-	11.5	-0.5
	20	20	-	-	11.5	1.5
	22	22	-	-	11.5	1.5
	24	12	12	-	21.0	-5.0
	24	14B	12	-	21.0	-5.0
			1			
	28	14B	14B	-	21.0	-5.0
	30	16	14B	-	22.0	-4.0
	32	16	16	-	23.0	-3.0
Space saving	34	18B	16	-	23.0	-3.0
	36	18B	18B	-	23.0	-3.0
	38	22	16	-	23.0	0.0
	40	22	18B	-	23.0	0.0
	42	22	20	-	23.0	3.0
	44	22	22	-	23.0	3.0
	46	16	16	14B	33.5	-5.5
	48	16	16	16	34.5	-4.5
	50	18B	16	16	34.5	-4.5
	52	18B	18B	16	34.5	-4.5
	54	18B	18B	18B	34.5	-4.5
	56	20	18B	18B	34.5	-1.5
	58	22	18B	18B	34.5	-1.5
	60	22	22	16	34.5	1.5
	8	8	-	-	10.5	-2.5
	10					
		10	-	-	10.5	-2.5
	12	12	-	-	10.5	-0.5
	14	14	-	-	11.5	-1.0
	16	16	-	-	11.5	-0.5
	18	18	-	-	11.5	1.5
	20	10	10	-	21.0	-5.0
	22	12	10	-	21.0	-5.0
	24	12	12	-	21.0	-5.0
	26	14	12	-	22.0	-4.0
	28	14	14	-	23.0	-3.0
	30	16	14	-	23.0	-3.0
High Efficiency	32	16	16	-	23.0	-3.0
/	34	18	16	-	23.0	0.0
High Diversity	36	12	12	12	31.5	-7.5
- /	38	14	12	12	32.5	-6.5
	40	14	14	12	33.5	-5.5
	42	14	14	14	34.5	-4.5
	44	16	14	14	34.5	-4.5
	46	16	16	14	34.5	-4.5
	40	16	16	14	34.5	-4.5
				16		
	50	18	16		34.5	-1.5
	52	20	16	16	34.5	-1.5
	54	20	20	14	34.5	1.5
	56	20	20	16	34.5	1.5
	58	22	20	16	34.5	1.5
	60	22	22	16	34.5	1.5

### Table1-5 ; T8P, T7P, T8P-SG, T8P-ID, T8P-T model

#### Table 1-6; For HT8P-C model

	System	Co	ombinatio	on	Charged refrigerant	Compensation by System HP
	HP		HP		kg	kg
	8	-	-		-	-
	10	-	-		-	-
	12	-	-		-	-
	14	-	-		-	-
	16	16	-	-	11.5	-0.5
	18	18	-	-	11.5	1.5
	20	20	-	-	11.5	1.5
	22	22	-	-	11.5	1.5
	24	-	-		-	-
	26	-	-		-	-
	28	-	-		-	-
	30	-	-		-	-
Standard model	32	-	-		-	-
Stanuaru mouer	34	18	16	-	23.0	1.0
	36	20	16	-	23.0	1.0
	38	22	16	-	23.0	1.0
	40	20	20	-	23.0	3.0
	42	22	20	-	23.0	3.0
	44	22	22	-	23.0	3.0
	46	-	-		-	-
	48	16	16	16	34.5	-6.5
	50	18	16	16	34.5	-0.5
	52	20	16	16	34.5	-0.5
	54	22	16	16	34.5	-0.5
	56	20	20	16	34.5	2.5
	58	22	20	16	34.5	2.5
	60	22	22	16	34.5	2.5

#### Table 2

Additional refrigerant charge amount Indoor unit	Standard Indoor unit	Fresh Air Intake Indoor Unit	Air to Air Heat exchanger with DX-coil	Hot Water Module
Addition kg/HP	0.4	0.2	0.2	0

#### Table 3

Pipe dia. at liquid side	mm	ø6.4	ø9.5	ø12.7	ø15.9	ø19.0	ø22.2
Additional refrigerant amount/1m	kg/m	0.025	0.055	0.105	0.160	0.250	0.350

#### Charging of refrigerant

- Keeping the valve of the outdoor unit closed, be sure to charge the liquid refrigerant into the service port at the liquid side.
- If the specified amount of refrigerant cannot be charged, fully open the valves of the outdoor unit at liquid and gas sides, operate the air conditioner in COOL mode, and then charge refrigerant into service port at the gas side. In this time, choke the refrigerant slightly by operating the valve of the canister to charge liquid refrigerant.
- The liquid refrigerant may be charged suddenly, therefore be sure to charge refrigerant gradually.

# **Refrigerant (R410A)**

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

#### 1. Safety Caution Concerned to refrigerant (R410A)

The pressure of R410A is high 1.6 times of that of the former refrigerant (R22). 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 refrigerant (R410A) 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 40mg/10m or less. 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 (Those which cannot be used for conventional refrigerant (R22))
- 2) Tools exclusive for R410A, but can be also used for conventional refrigerant (R22)

3) Tools commonly used for R410A and for conventional refrigerant (R22)

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

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

#### **Explanation of symbols**

 $\triangle$ : Newly prepared (It is necessary to use it exclusively with R410A, separately from those for R22  $\bigcirc$  or R407C.): Former tool is available.

Used tools	Usage	Proper use of tools/parts
Gauge manifold	Vacuuming, charging	A Exclusive to R410A
Charging hose	refrigerant and operation check	Exclusive to R410A
Charging cylinder	Charging refrigerant	Unusable (Use the Refrigerant charging balance.)
Gas leak detector	Checking gas leak	Exclusive to R410A
Vacuum pump	Vacuum drying	Usable if a counter-flow preventive adapter is attached
Vacuum pump with counterflow	Vacuum drying	R22 (Existing article)
Flare tool	Flare processing of pipes	Usable by adjusting size
Bender	Bending processing of pipes	R22 (Existing article)
Refrigerant recovery device	Recovering refrigerant	Exclusive to R410A
Torque wrench	Tightening flare nut	Exclusive to Ø12.7mm and Ø15.9mm
Pipe cutter	Cutting pipes	R22 (Existing article)
Refrigerant canister	Charging refrigerant	Exclusive to R410A Enter the refrigerate name for identification
Brazing machine/ Nitrogen gas cylinder	Brazing of pipes	R22 (Existing article)
Refrigerant charging balance	Charging refrigerant	R22 (Existing article)

(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.

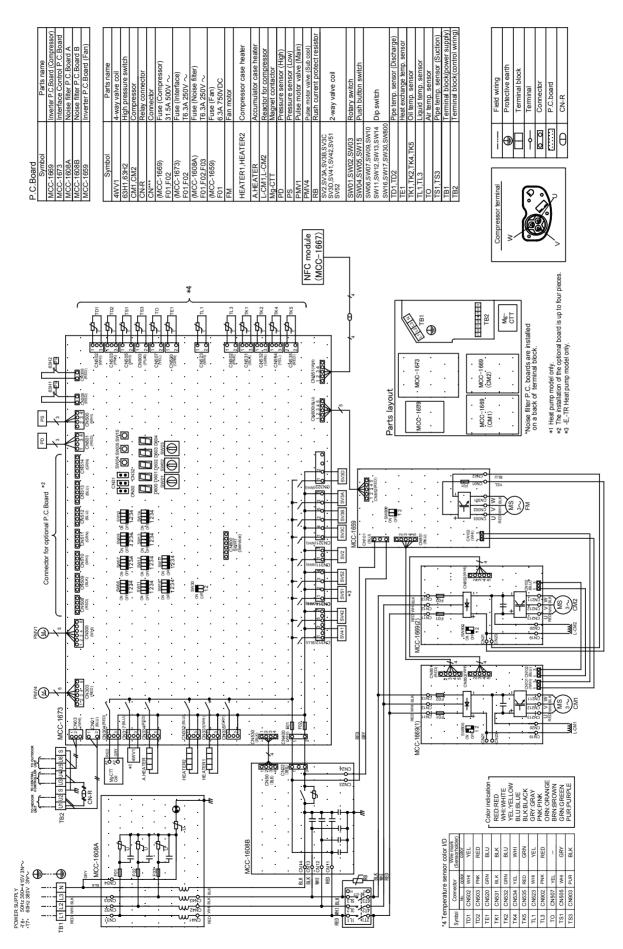
#### General tools (Conventional tools can be used.)

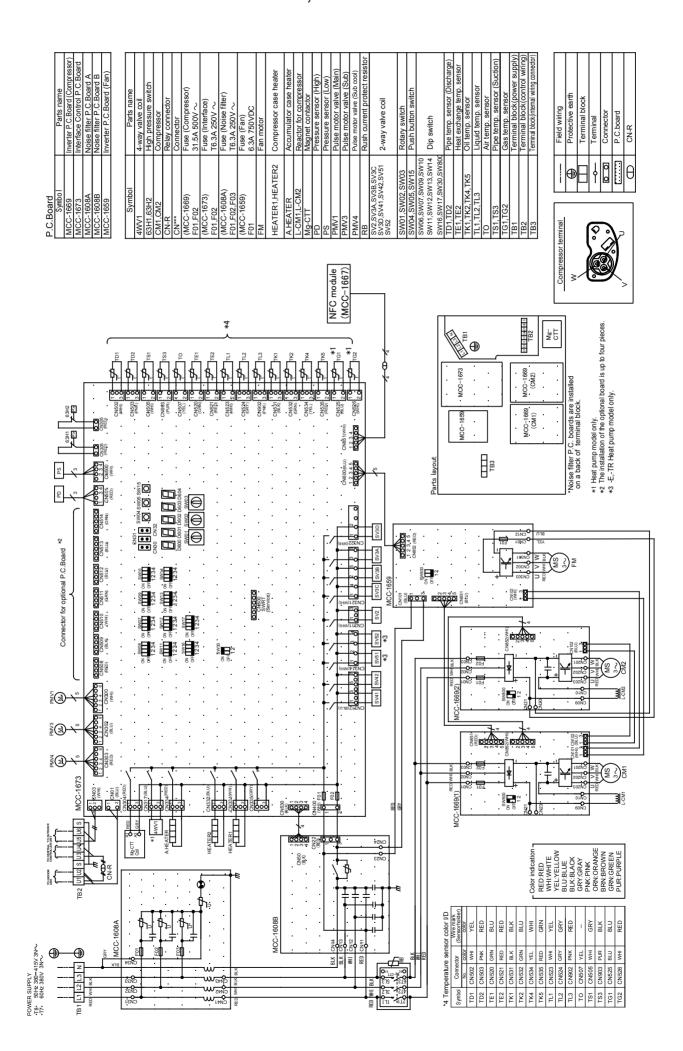
In addition to the above exclusive tools, the following equipments which serve also for R22 are necessary as the general tools. (1) Vacuum pump (7) Screwdriver (+, -)

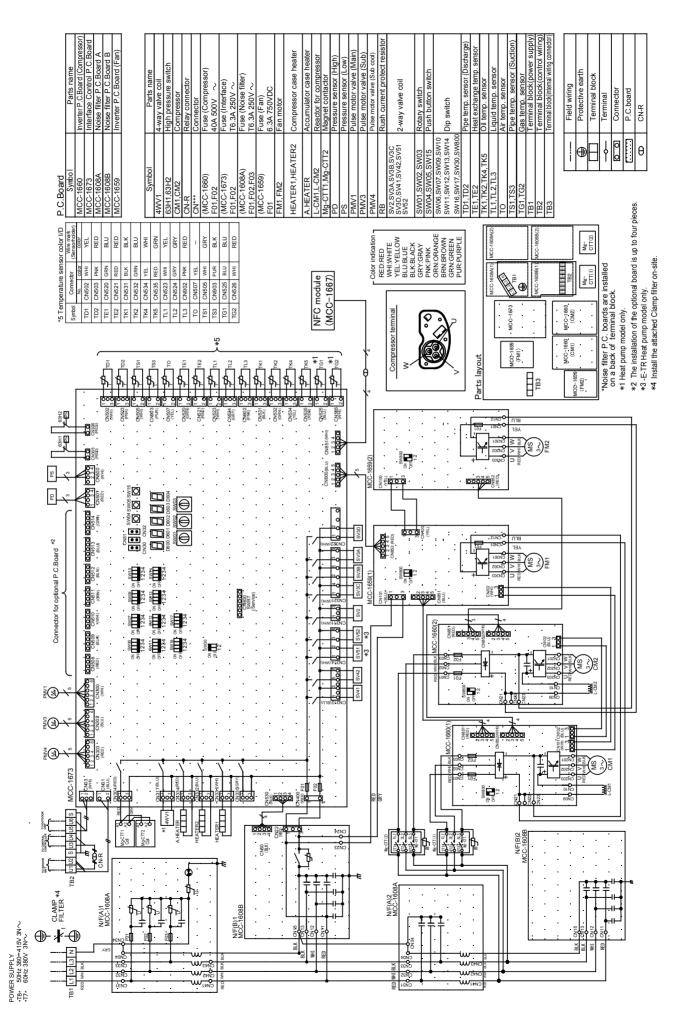
Use vacuum pump by attaching vacuum pump	(8) Spanner or Monkey wrench
adapter.	(9) Hole core drill
(2) Torque wrench	(10)Hexagon wrench (Opposite side 4mm)
(3) Pipe cutter	(11)Tape measure
(4) Reamer	(12)Metal saw
(5) Pipe bender	
(6) Level vial	
Also prepare the following equipments for other instal	lation method and run check.
(1) Clamp meter	(3) Insulation resistance tester
(2) Thermometer	(4) Electroscope
· ·	

# **1** Wiring Diagrams 1-1. Outdoor Unit

### Models: MMY-MAP0806\*, MAP1006\*, and MAP1206\*

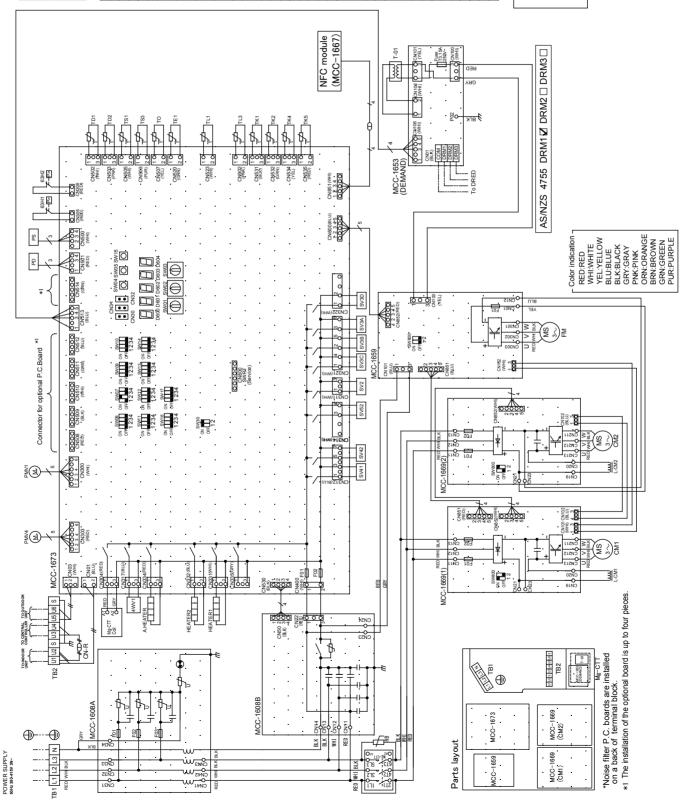


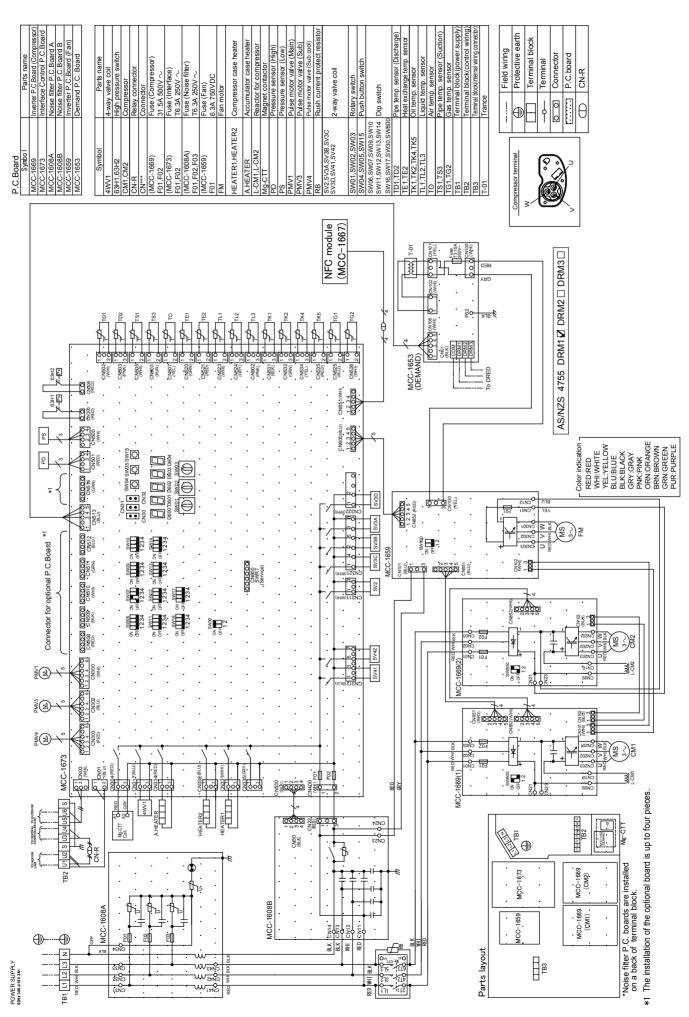




#### Models: MMY-MAP14A6\*, MAP16A6\*, MAP1806\*, MAP2006\*, and MAP2206\*

Pipe temp. sensor (Discharge) Heat exchange temp. sensor Oll temp. sensor Art temp. sensor Art temp. sensor Pipe temp. sensor (Suction) Field wiring Protective earth ulse motor valve (Sub cool) ush current protect resistor Parts name Inverter P.C.Board (Compresson Interface Control P.C.Board Noise filter P.C.Board A Noise filter P.C.Board A Inverter P.C.Board (Fan) Demand P.C.Board Reactor for compressor Magnet contactor Pressure sensor (High) Pressure sensor (Low) Pulse motor valve (Main) Terminal block Compressor case heater Connector P.C.board Parts name 4-way valve coil High pressure switch erminal block(power erminal block(control Terminal Compressor Relay connector Compressor) Fuse (Compressor) 31.5A 500V ∼ Fuse (Interface) Fuse (Interface) Fuse (Noise filter) Fuse (Noise filter) 6.3A 750VDC CN-R case switch way valve coil-Rotary switch Push button sv ulator Dip switch motor ance Ē SW01,SW02,SW03 F SW04,SW05,SW15 F SW06,SW7,SW09,SW10 SW11,SW12,SW13,SW14 E SW16,SW17,SW30,SW80 TD1,TD2 HEATER1, HEATER2 SV2, SV3A, SV3B, SV3C SV3D, SV41, SV42, SV52 ТЕ1 ТК1, ТК2, ТК4, ТК5 Compressor terminal ଚି ė (MCC-1673) (MCC-1673) F01,F02 (MCC-1608A) F01,F02,F03 (MCC-1659) Symbol -CM2 Symbo MCC-1669 MCC-1673 MCC-1608A MCC-1608B MCC-1659 MCC-1653 63H1,63H2 CM1,CM2 CN-R (MCC-1669) P.C.Board TL3 4WV1 ≥ TB2 T-01 FM FM 8

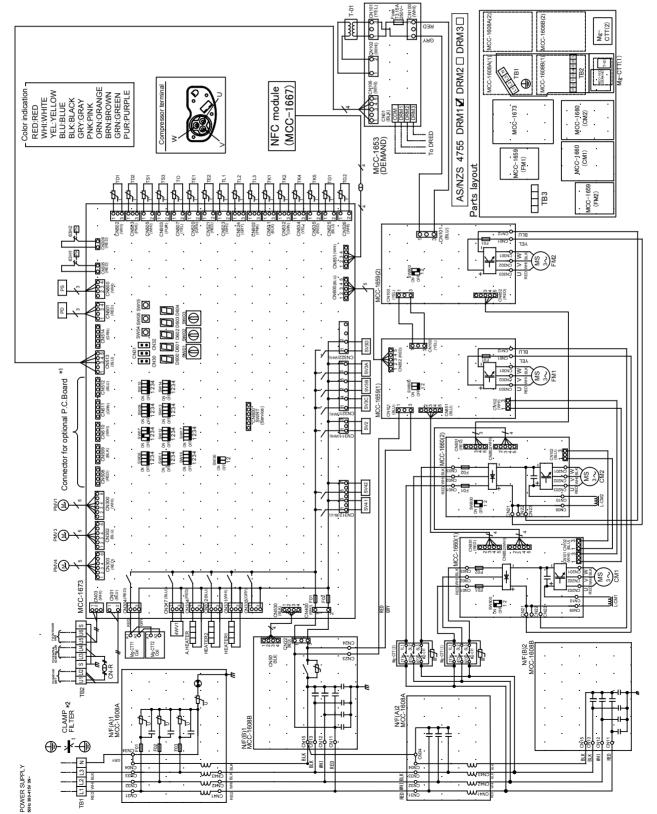




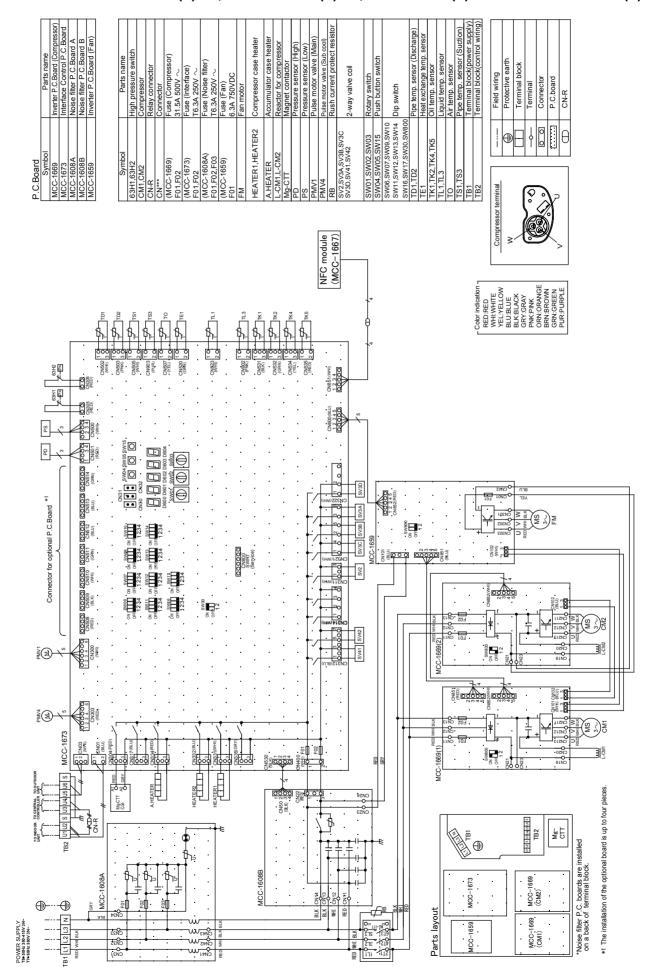
#### Models: MMY-MAP1406HT8P-A and MAP1606HT8P-A

Models: MMY-MAP1806HT8P-A and MAP2006HT8P-A

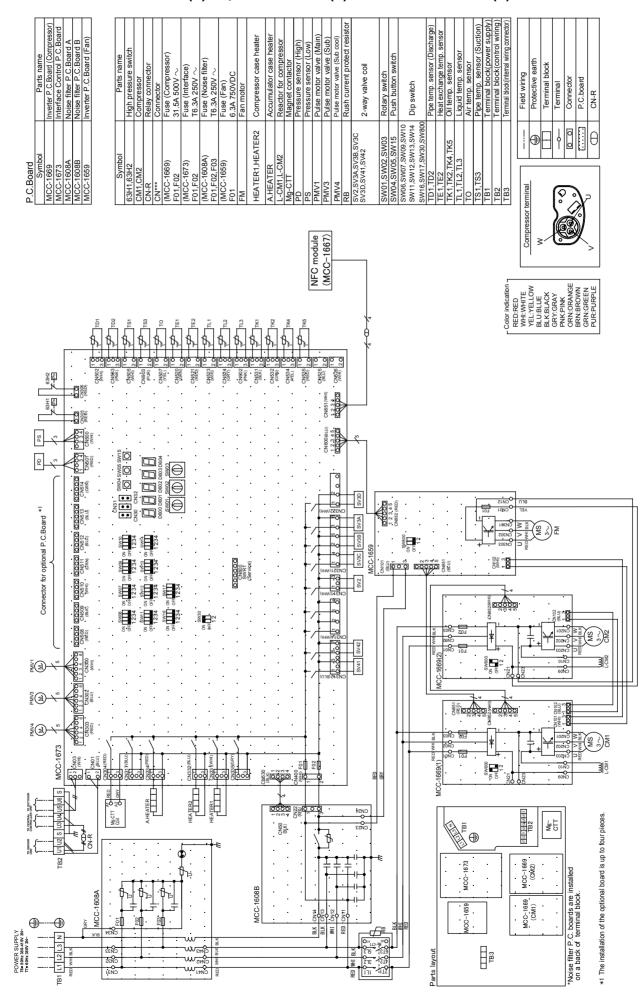
P.C.Board		
Symbol	Pa	Parts name
MCC-1660	Inverter P.C.	Inverter P.C.Board (Compressor)
-10/3 -1608A	Noise filter	P.C.Board A
-1608B	Noise filter	P.C.Board B
MCC-1659 MCC-1653	Demand P.	Inverter P.C.Board (Fan)
		5
Symbol		Parts name
4WV1	4-way valve coil	e coil
63H1,63HZ	Hign pressure switch Compressor	ure switch
CM-R CN-R		r connector
CN***	Connector	
(MCC-1660)	Fuse (Compressor)	pressor)
FUT,FUZ /MCC_1673\	Firse (Interface)	C [ace)
(MCC-10/ 3) F01,F02	T6.3A 250V	
0	ŝ	e filter)
F01,F02,F03	16.3A 250V	2
	Fuse (Fan) 6.3A 750VDC	00
,FM2	Fan motor	
HEATER1, HEATER2	Compressor	r case heater
A.HEATER	Accumulator case	or case heater
:M1,L-CM2	Reactor for	compressor
-CTT1,Mg-CTT2	Magnet cor	Magnet contactor
PD	Pressure su	sensor (High)
V1	Pulse moto	Pulse motor valve (Main)
PMV3	Pulse motor valve	r valve (Sub)
PMV4	Pulse motor v	Pulse motor valve (Sub cool)
RB	Rush curre	Rush current protect resistor
SV2,SV3A,SV3B,SV3C SV3D,SV41,SV42	2-way valve	e coil
	Rotary swit	ch
	Push button sv	n switch
SW06,SW07,SW09,SW10 SW11.SW12.SW13.SW14	Dip switch	
SW16, SW17, SW30, SW800		
TD1,TD2	Pipe temp. s	
ТК1 ТК2 ТК4 ТК5	Oil temp. sensor	alige terrip. serisor sensor
TL2,TL3	Liquid temp.	). sensor
	Air temp. s	ensor
TS1,TS3 TC4 TC2	Pipe temp.	Pipe temp. sensor (Suction)
107	Terminal h	das terrip: serisor Terminal block/nower supply)
TB2	Terminal bl	Terminal block(control wiring)
TB3	Terminal block	Terminal block(internal wining connector)
T-01	Trance	
		Field wiring
	₽	Protective earth
	Η	Terminal block
	οII	Terminal
		Connector
		P.C.board
	θ	CN-R



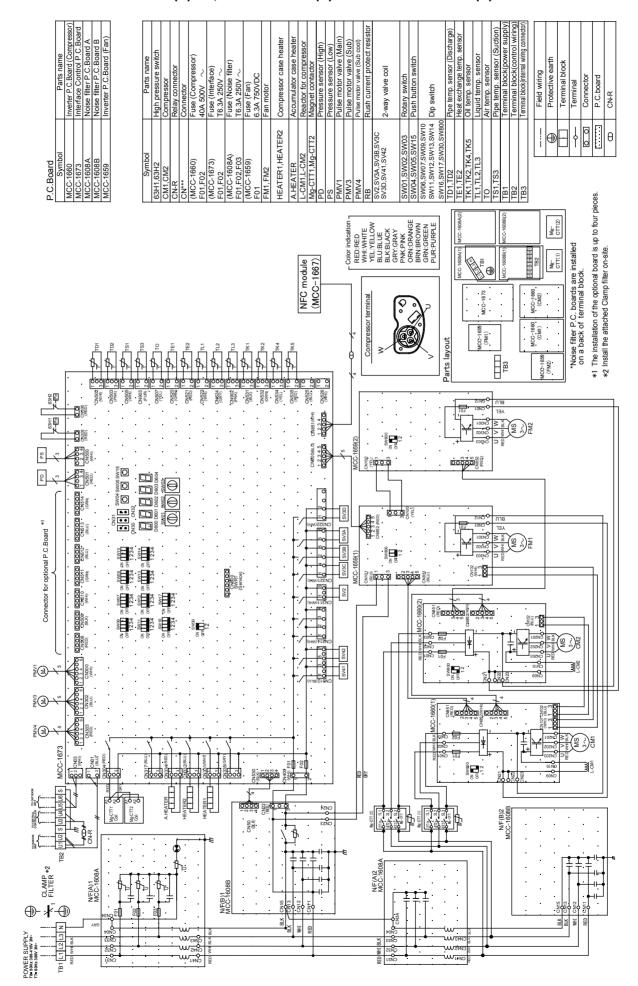
\*Noise filter P.C. boards are installed on a back of terminal block.
\*1 The installation of the optional board is up to four pieces.
\*2 Install the attached Clamp filter on-site.



Models: MMY-MAP0806T\*(J)P\*, MAP1006T\*(J)P\*, MAP1206\*(J)P\* and MAP14B6T\*(J)P\*



#### Models: MMY-MAP1406T\*(J)P\*, MAP1606T\*(J)P\* and MAP18B6\*(J)P\*



#### Models: MMY-MAP1806T\*(J)P\*, MAP2006T\*(J)P\* and MAP2206\*(J)P\*

## **2** Parts Rating

## 2-1. Outdoor Unit (50Hz model: MMY-MAP\*\*\*6\*T8\*P\*)

	Name	Model	Specification	MMY-MAP0806(H)T8(J)P*	MMY-MAP1006(H)T8(J)P*	MMY-MAP1206(H)T8(J)P*	MMY-MAP14B6T8(J)P*	MMY-MAP10A6HT8(J)P-ME	MMY-MAP12A6HT8(J)P-ME	MMY-MAP1406(H)T8(J)P*	MMY-MAP1606(H)T8(J)P*	MMY-MAP18B6T8(J)P*	MMY-MAP14A6HT8(J)P-ME	MMY-MAP16A6HT8(J)P-ME	MMY-MAP1806(H)T8(J)P*	MMY-MAP2006(H)T8(J)P*	MMY-MAP2206(H)T8(J)P*
1	Compressor	RA421A3TB-20MD	Output:2.1kWx2	0													
1	Compressor	RA421A3TB-20MD	Output:3.1kWx2		0												
1	Compressor	RA421A3TB-20MD	Output:3.9kWx2			0											
1	Compressor	RA421A3TB-20MD	Output:5.4kWx2				0										
1	Compressor	RA641A3TB-20M	Output:2.8kW×2					0									
1	Compressor	RA641A3TB-20M	Output:3.7kW×2						0								
1	Compressor	RA641A3TB-20M	Output:4.8kW×2							0							
1	Compressor	RA641A3TB-20M	Output:5.8kW×2								0						
1	Compressor	RA641A3TB-20M	Output:6.9kW×2									0					
1	Compressor	RA641A3TB-20M	Output:4.0kW×2										0				
1	Compressor	RA641A3TB-20M	Output:4.7kW×2											0			
1	Compressor	RA641A3TB-20M	Output:6.5kW×2												0		
1	Compressor	RA641A3TB-20M	Output:7.6kW×2													0	
1	Compressor	RA641A3TB-20M	Output:9.0kW×2														0
2	4-way valve coil <sup>*1</sup>	SHF	AC220-240V 50Hz	0	0	0		0	0	0	0		0	0	0	0	0
			AC220-240V 50Hz				_					_					
3	2-way valve coil	VPV	SV3B, SV51 <sup>*2</sup>	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			AC220-240V 50Hz														
3	2-way valve coil	TEV	SV2, 3A, 3C, 3D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			AC220-240V 50Hz														
			SV41, 42	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	2-way valve coil	FQ-G593	AC220-240V 50Hz														
			SV52	O*1	O*1	O*1				O*2	O*2				O*2	O*2	O*2
4	Pulse motor valve coil	PAM	DC12V	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pulse motor valve coil	UKV	DC12V	0	Õ	Õ	Õ	Õ	0	0	0	0	0	Õ	0	0	0
-	High-presure SW	ACB-4UB154W	OFF:4.15MPa ON:3.2MPa	Õ	Õ	Õ	Õ	Õ	Õ	Õ	Õ	Õ	Õ	Õ	Õ	Õ	0
-	Pressure sensor(For high pressure)	NSK-BH038F-460	0.5~4.5V/0~3.92MPa	0	Õ	Õ	Õ	Õ	0	Õ	Õ	Õ	Õ	Õ	0	0	Õ
	Pressure sensor(For low pressure)	NSK-BH010F-460	0.5~3.5V/0~0.98MPa	Ō	Õ	Õ	ŏ	õ	Ő	Õ	Õ	Õ	ŏ	Õ	0	0	Õ
-	Fan motor	WDF-620A1000	DC530-620	Õ	Õ	Õ	Õ	Õ	Õ	Õ	Õ	0	Õ	Õ	Õ	Õ	0
	Case heater(For comp.)		AC240V/29W	0	Õ	Õ	Õ	Õ	0	Õ	Õ	Õ	Õ	Õ	0	0	Õ
10	Case heater(For accum.)	1	AC240V/55W	0	Õ	0	0	õ	0	0	Õ	Õ	Õ	0	0	0	0
	Fusible plug	1	73°C	0	0	0	0	0	0	0	0	0	0	0	0	0	0

\*1: Heat pump model only.

\*2:-E, -TR of heat pump model only.

## 2-2. Outdoor Unit (60Hz model: MMY-MAP\*\*\*6HT7\*P\*)

	Name	Model	Specification	MMY-MAP0806(H)T7(J)P*	MMY-MAP1006(H)T7(J)P*	MMY-MAP1206(H)77(J)P*	MMY-MAP14B6T7(J)P*	MMY-MAP10A6HT7P-ME	MMY-MAP12A6HT7P-ME	MMY-MAP1406(H)T7(J)P*	MMY-MAP1606(H)T7(J)P*	MMY-MAP18B6T7(J)P*	MMY-MAP14A6HT7P-ME	MMY-MAP16A6HT7P-ME	MMY-MAP1806(H)T7(J)P*	MMY-MAP2006(H)T7(J)P*	MMY-MAP2206(H)T7(J)P*
1	Compressor	RA421A3TB-20MD	Output:2.1kW×2	0													
1	Compressor	RA421A3TB-20MD	Output:3.1kW×2		0												
1	Compressor	RA421A3TB-20MD	Output:3.9kW×2			0											
1	Compressor	RA421A3TB-20MD	Output:5.4kW×2				0										
1	Compressor	RA641A3TB-20M	Output:2.8kW×2					0									
1	Compressor	RA641A3TB-20M	Output:3.7kW×2						0								
1	Compressor	RA641A3TB-20M	Output:4.8kWx2							0							
1	Compressor	RA641A3TB-20M	Output:5.8kWx2								0						
1	Compressor	RA641A3TB-20M	Output:6.9kW×2									0					
1	Compressor	RA641A3TB-20M	Output:4.0kWx2										0				
1	Compressor	RA641A3TB-20M	Output:4.7kWx2											0			
1	Compressor	RA641A3TB-20M	Output:6.5kW×2												0		
1	Compressor	RA641A3TB-20M	Output:7.6kW×2													0	
1	Compressor	RA641A3TB-20M	Output:9.0kW×2														0
2	4-way valve coil <sup>*1</sup>	SHF	AC208-230V 60Hz	0	0	0		0	0	0	0		0	0	0	0	0
	-		AC208-230V 60Hz				~					_					
3	2-way valve coil	VPV	SV3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-			AC208-230V 60Hz	_	_	-	-	-	_	_	_	_	-	_	-	_	_
3	2-way valve coil	TEV	SV2, 3A, 3C, 3D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			AC208-230V 60Hz	-	-	-	-	-	_	_	_	-	-	_	-	_	_
			SV41, 42	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	2-way valve coil	FQ-D640	AC208-230V 60Hz														-
			SV52	O*'	O*1	O <sup>*</sup> '											
4	Pulse motor valve coil	PAM	DC12V	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Pulse motor valve coil	UKV	DC12V	Ō	Ō	Ō	Ō	Ō	Õ	Õ	Õ	Õ	Ō	Õ	Ō	Ō	Ō
_	High-presure SW	ACB-4UB154W	OFF:4.15MPa ON:3.2MPa	Ō	Õ	Ō	Ō	Ō	Õ	Õ	Õ	Õ	Ō	Õ	Ō	Ō	Ō
	Pressure sensor(For high pressure)	NSK-BH038F-460	0.5~4.5V/0~3.92MPa	Ō	Ō	Ō	0	Ō	Ō	Ō	Ō	Ō	Õ	Ō	0	0	Ō
	Pressure sensor(For low pressure)	NSK-BH010F-460	0.5~3.5V/0~0.98MPa	Ō	Õ	Ō	Ō	Ō	Õ	Õ	Õ	Ō	0	0	Ō	Ō	Ō
8	Fan motor	WDF-620A1000	DC530-620	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Õ	Ō	Ō	Ō
9	Case heater(For comp.)		AC240V/29W	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Ō
	Case heater(For accum.)		AC240V/55W	Ō	Ō	Ō	0	Ō	Ō	Ō	Ō	Ō	0	Ō	0	0	Ō
	Fusible plug		73°C	Ō	Ō	Ō	Ō	Õ	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Ō	Õ

\*1: Heat pump model only.

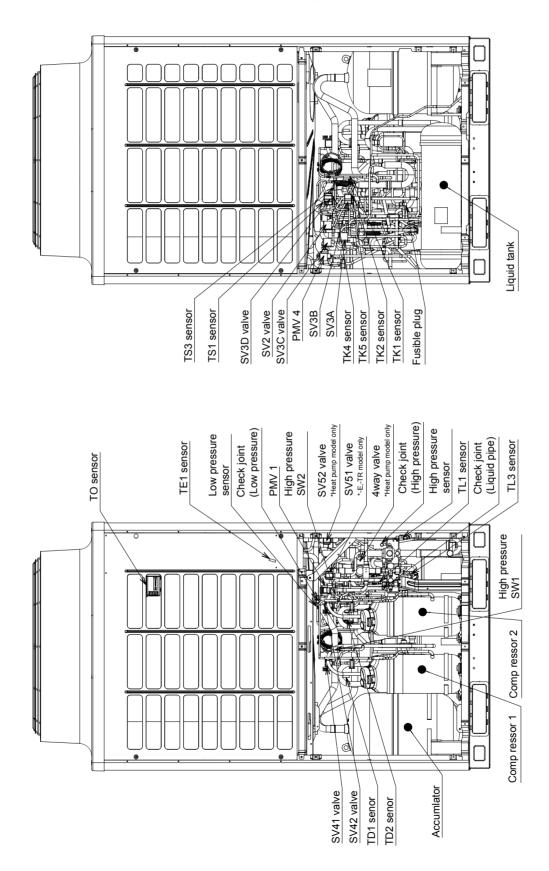
## 2-3. Outdoor Inverter (50/60Hz model: MMY-MAP\*\*\*6\*T8/7\*P\*)

No	Name	Model	Specification	MMY-MAP0806*	MMY-MAP1006*	MMY-MAP1206*	MMY-MAP14B6*	MMY-MAP10A6*	MMY-MAP12A6*	MMY-MAP1406*	MMY-MAP1606*	MMY-MAP18B6*	MMY-MAP14A6*	MMY-MAP16A6*	MMY-MAP1806*	MMY-MAP2006*	MMY-MAP2206*
1	Power supply terminal block	JXO-6004	AC600V/75A,4P	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Relay terminal block for reactor	JXO-3004	AC600V/30A,4P	-	-	-	-	0	0	0	0	0	0	0	0	0	0
3	Communication terminal block	JXO-B2J	AC30V(or no more than DC42V)/1A,8P	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Reactor(For comp. & fan)	CH-79	5.8mH/14A	0	0	0	0	-	-	-	-	-	-	-	-	-	-
5	Reactor(For comp. & fan)	CH-90	2.9mH/25A	-	-	-	-	0	0	0	0	0	-	-	-	-	-
6	Reactor(For comp. & fan)	CH-65	2.9mH/30A	-	-	-	-	-	-	-	-	-	0	0	0	0	0
7	P.C.board(Noise filter)	MCC-1608	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Line filter	-	4.0mH/AC400V/35A	0	0	0	0	0	0	0	0	0	-	-	-	-	-
9	Line filter	-	0.77mH/AC480V/50A	-	-	-	-	-	-	-	-	-	0	0	0	0	0
10	P.C.board(I/F board)	MCC-1673	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	P.C.board(IPDU for comp.)	MCC-1669	-	0	0	0	0	0	0	0	0	0	-	-	-	-	-
12	P.C.board(IPDU for comp.)	MCC-1660	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0
13	Fuse(MCC-1669)	GAC1 31.5A	31.5A/AC500V(P.C.board)	0	0	0	0	0	0	0	0	0	-	-	-	-	-
14	Fuse(MCC-1660)	GAC1 40A	40A/AC500V(P.C.board)	-	-	-	-	-	-	-	-	-	0	0	0	0	0
15	Comp.motor drive IPM	PSS25SA2FT	25A/DC1200V(P.C.board)	0	0	0	0	-	-	-	-	-	-	-	-	-	-
16	Comp.motor drive IPM	PSS50SA2FT	50A/DC1200V(P.C.board)	-	-	-	-	0	0	0	0	0	0	0	0	0	0
17	P.C.board(IPDU for fan)	MCC-1659	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Fuse(MCC-1659)	HDL1 6.3A	6.3A/DC750V(P.C.board)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Fan motor drive IPM(MCC-1659)	PSS10S72FT	10A/DC1200V(P.C.board)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Magnet switch (MG-CTT) (50/60Hz)	FC-1S	AC220-240V	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	PTC thermistor	MZ32-101RMARD01E	13A/AC500V	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Pipe temp. sensor(TD)	-	-30°C-135°C (Ambient temp. range)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Pipe temp. sensor(TS)	-	-20°C-80°C (Ambient temp. range)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Heatexchanger temp. sensor(TE)	-	-20°C-80°C (Ambient temp. range)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Outside temp. sensor(TO)	-	-20°C-80°C (Ambient temp. range)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Oil temp. sensor(TK)	-	-30°C-135°C (Ambient temp. range)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Liquid temp. sensor(TL)	-	-20°C-80°C (Ambient temp. range)	0	0	0	0	0	0		0	0	0	0	0	0	0
	Gas temp. sensor(TG)	-	-30°C-130°C (Ambient temp. range)	-	-	-	-	0	0	0	0	0	0	0	0	0	0

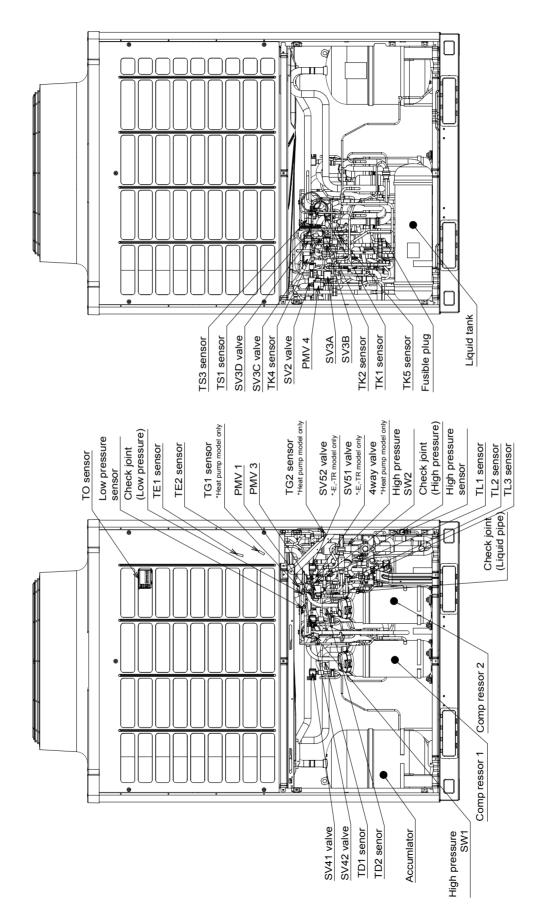
## 2-4. Parts Layout in Outdoor Unit

#### 8, 10, 12, 14HP

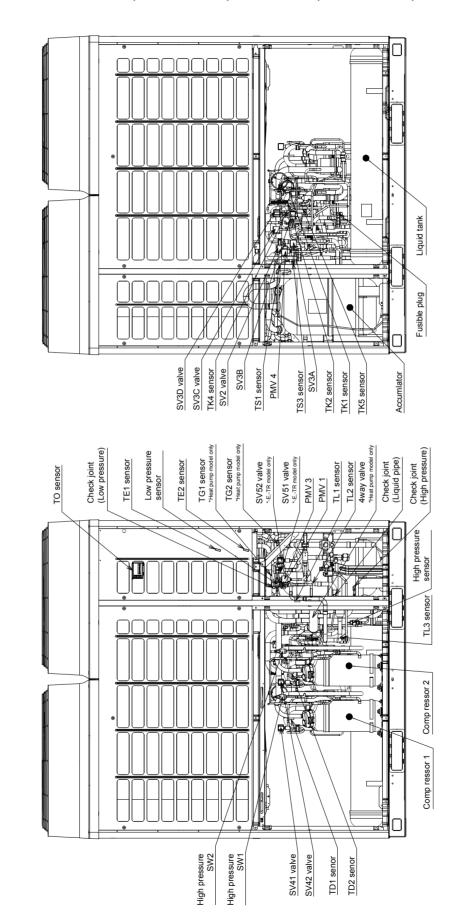
Model: MMY-MAP0806\*, MAP1006\*, MAP1206\*, MAP14B6\*



10, 12, 14, 16, 18HP Model: MMY-MAP10A6\*, MAP12A6\*, MAP1406\*, MAP1606\*, MAP18B6\*



#### 14, 16, 18, 20, 22HP

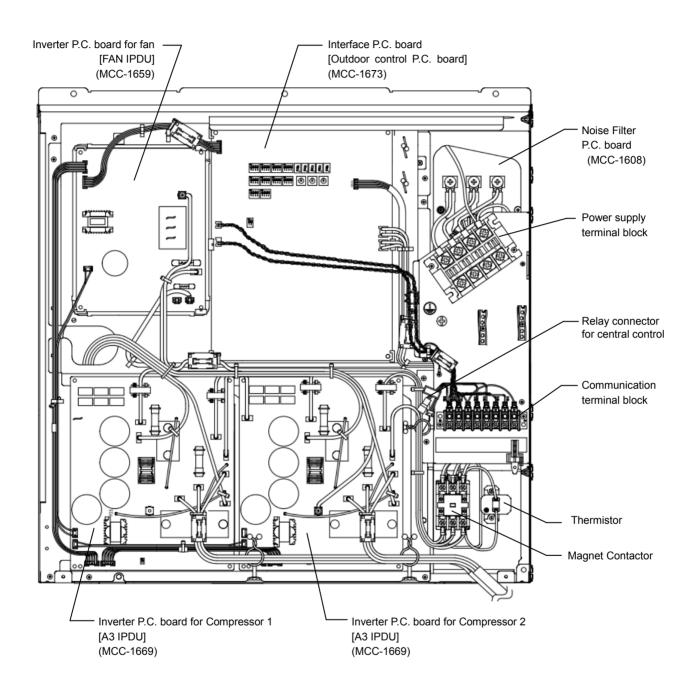


Model: MMY-MAP14A6\*, MAP16A6\*, MAP1806\*, MAP2006\*, MAP2206\*

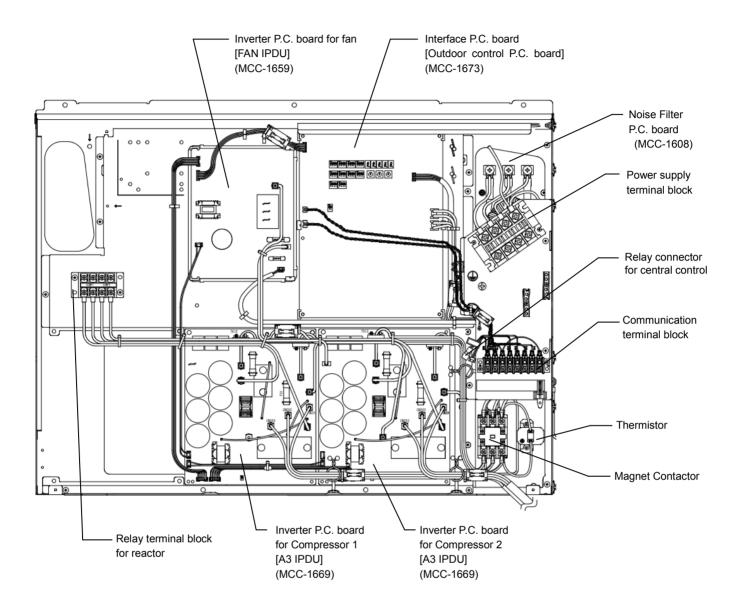
## 2-5. Parts Layout in Inverter Assembly

#### Outdoor Unit (8, 10, 12, 14HP)

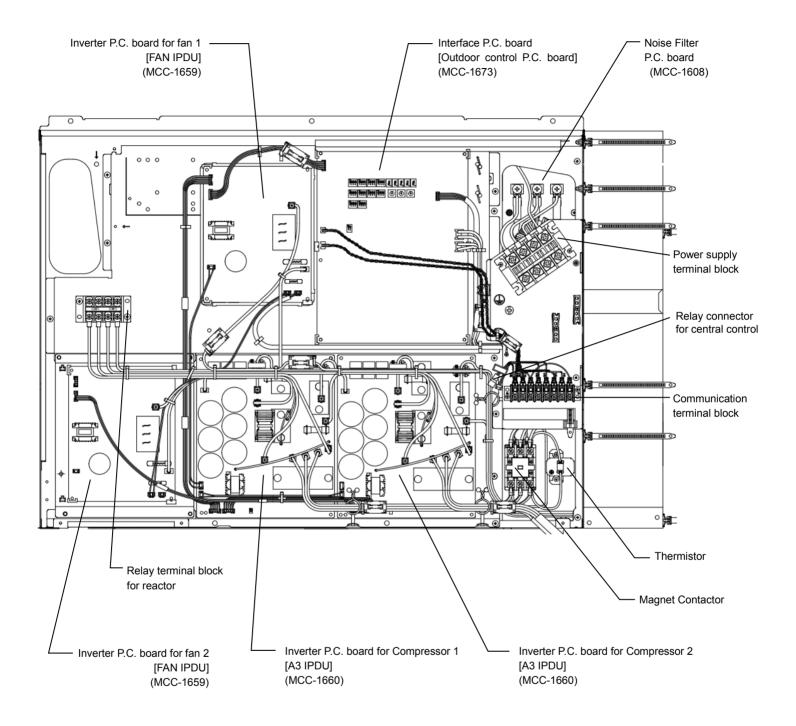
Model: MMY-MAP0806\*, MAP1006\*, MAP1206\*, MAP14B6\*



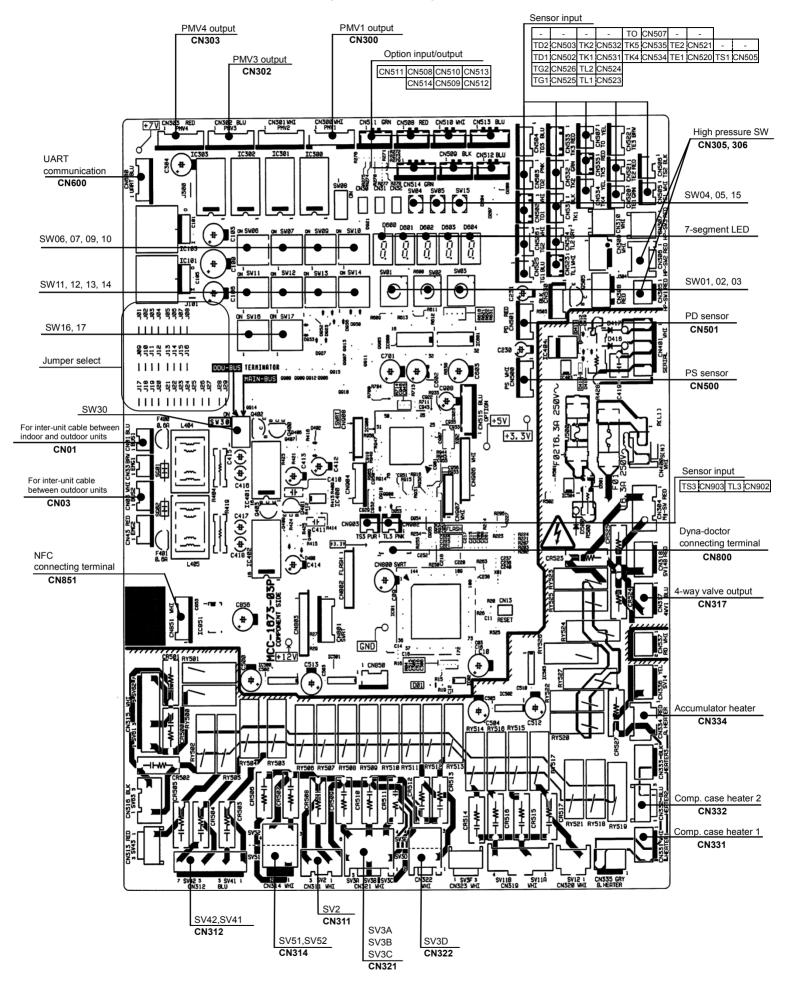
#### Outdoor Unit (10, 12, 14, 16, 18HP) Model: MMY-MAP10A6\*, MAP12A6\*, MAP1406\*, MAP1606\*, MAP18B6\*

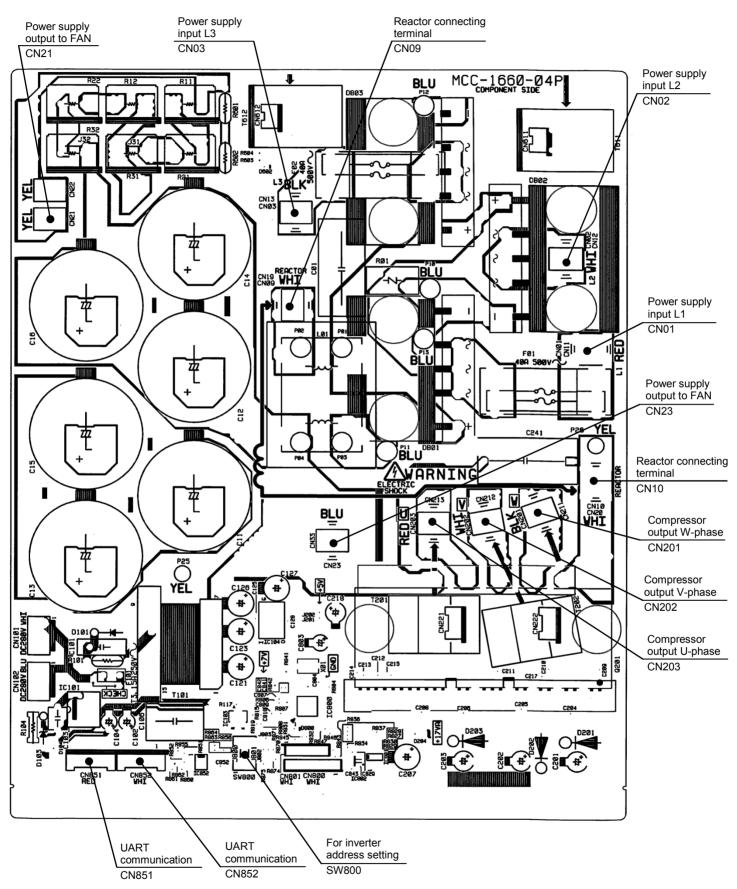


### Outdoor Unit (14, 16, 18, 20, 22HP) Model: MMY-MAP14A6\*, MAP16A6\*, MAP1806\*, MAP2006\*, MAP2206\*

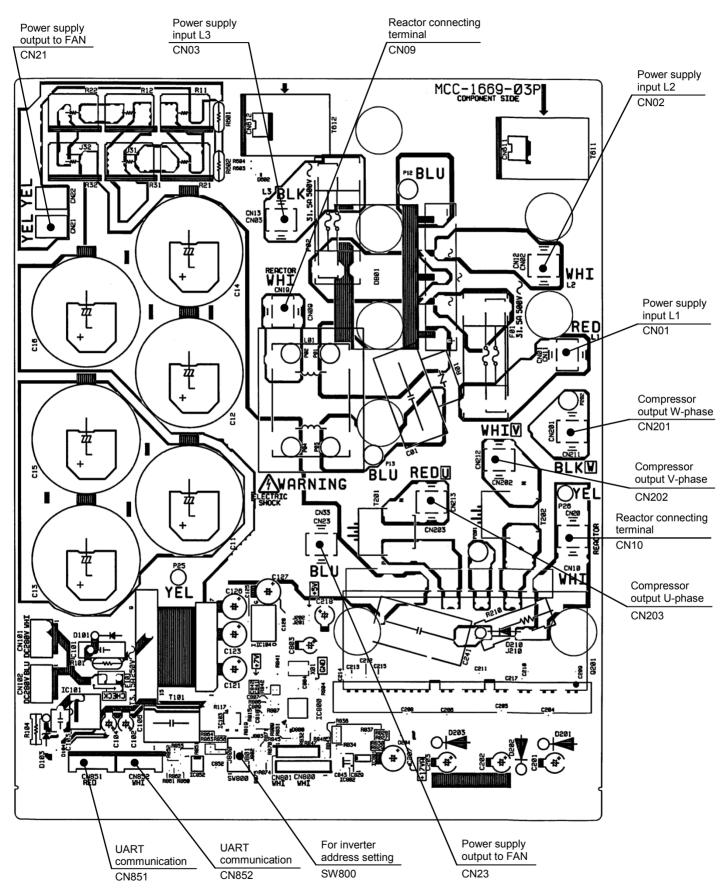


### 2-6. Outdoor (Inverter) Print Circuit Board 2-6-1. Interface P.C. board (MCC-1673)

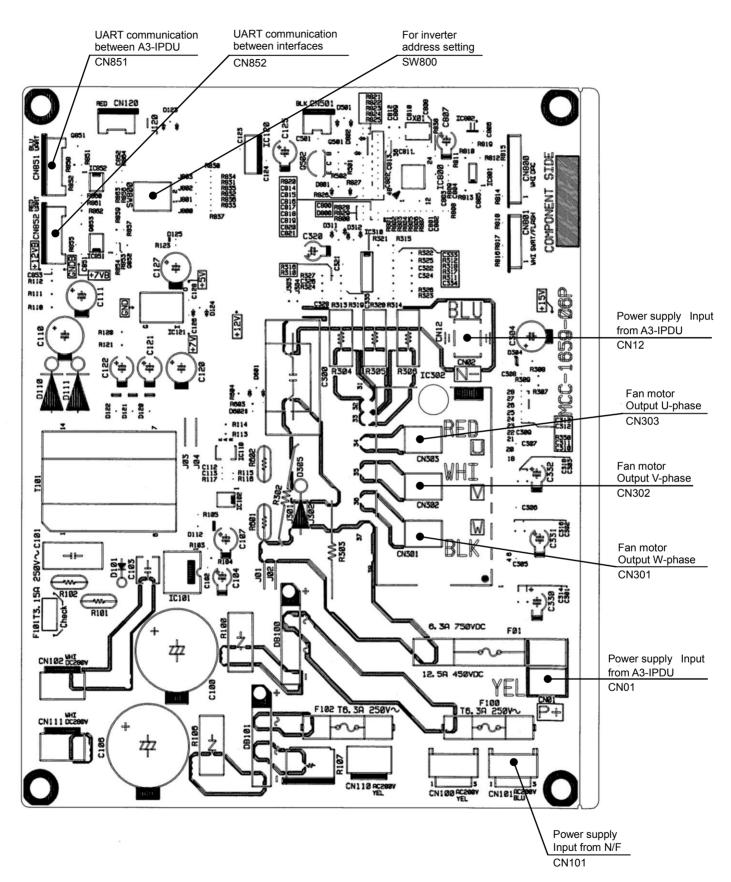




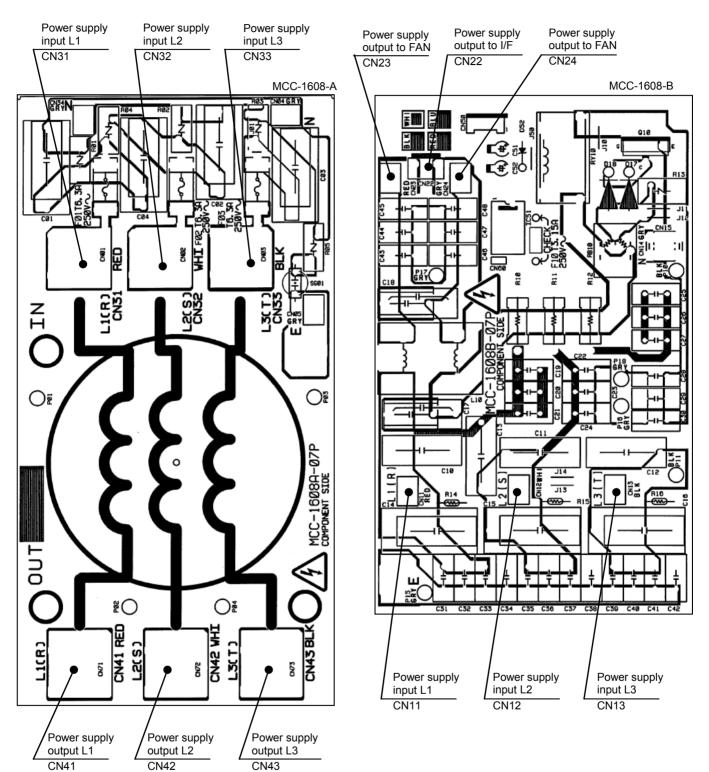
## 2-6-2. Inverter P.C. board for compressor (MCC-1660) A3-IPDU



### 2-6-3. Inverter P.C. board for compressor (MCC-1669) A3-IPDU



### 2-6-4. Inverter P.C. board for fan motor (MCC-1659) FAN-IPDU

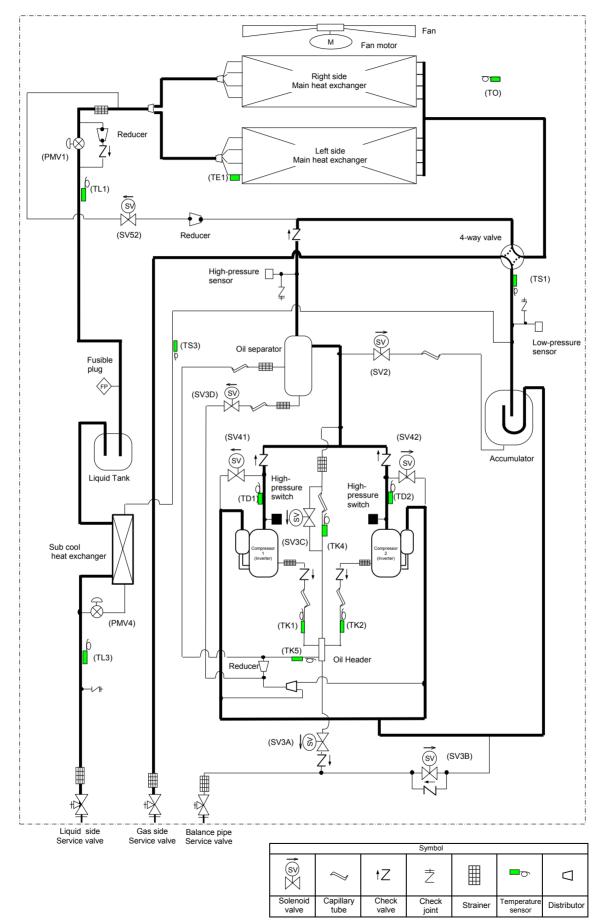


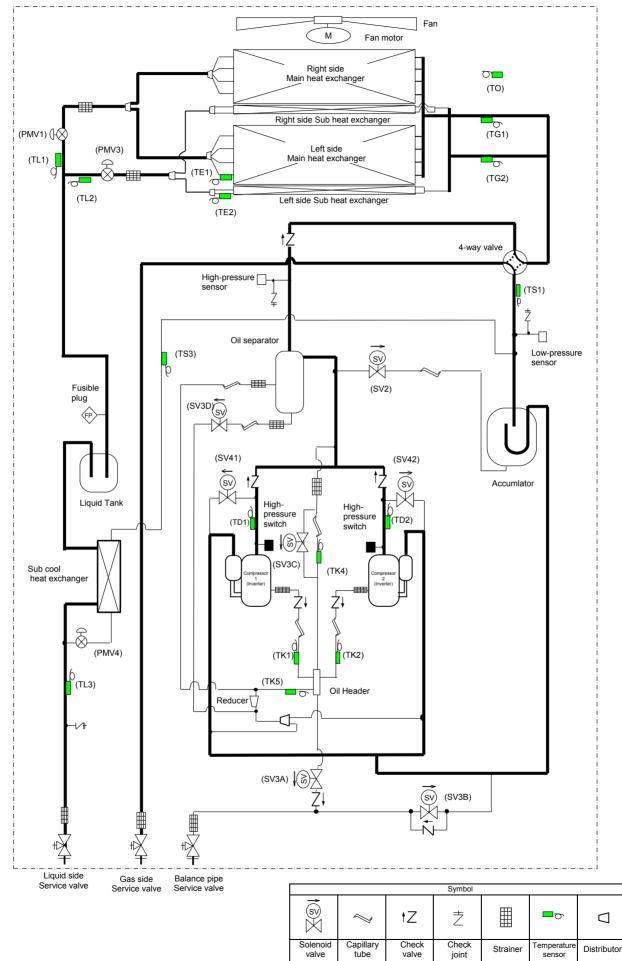
### 2-6-5. Noise Filter PC board (MCC-1608 -A, -B)

## **3** Refrigerant Piping Systematic Drawing

Outdoor Unit (8, 10, 12HP)

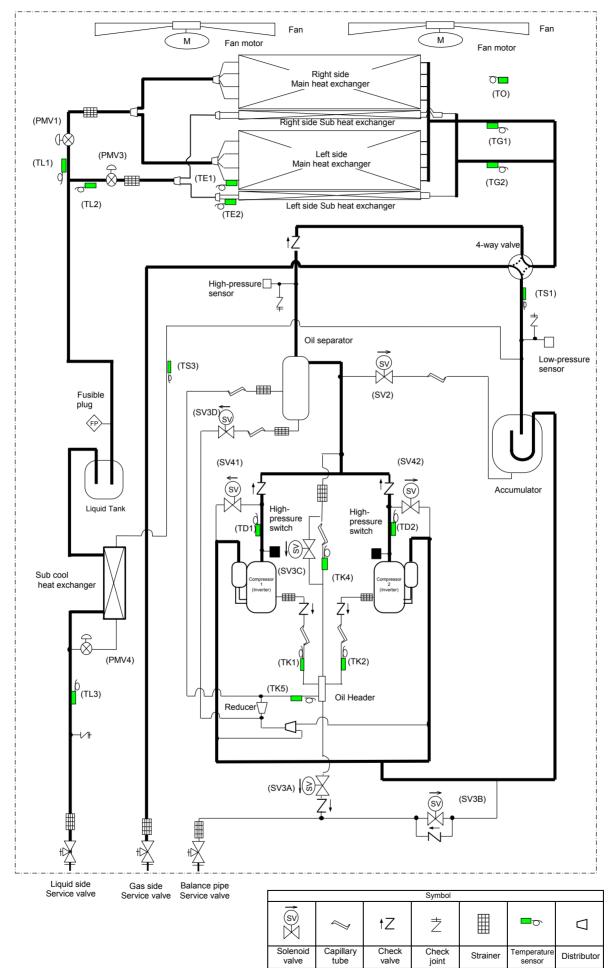
Model: MMY-MAP0806\*, MMY-MAP1006\*, MMY-MAP1206\*



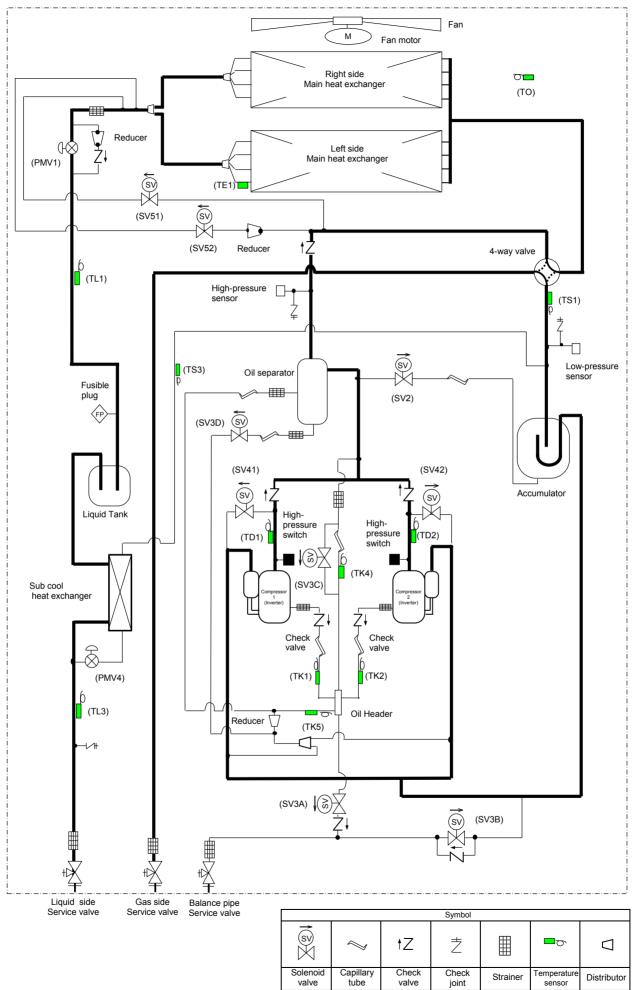


Outdoor Unit (10, 12, 14, 16HP) Model: MMY-MAP10A6\*, MMY-MAP12A6\*, MMY-MAP1406\*, MMY-MAP1606\*

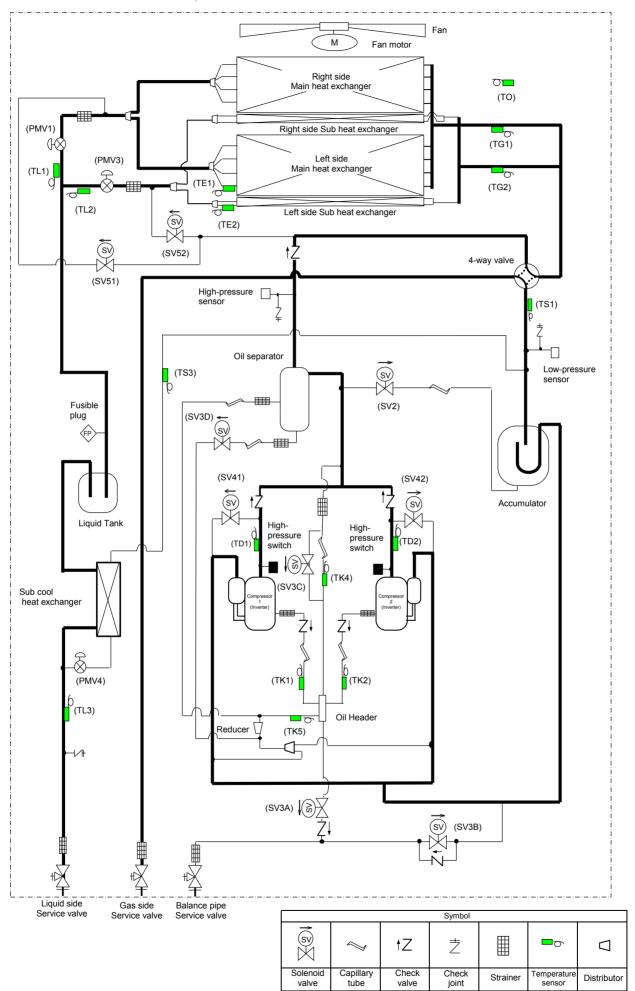


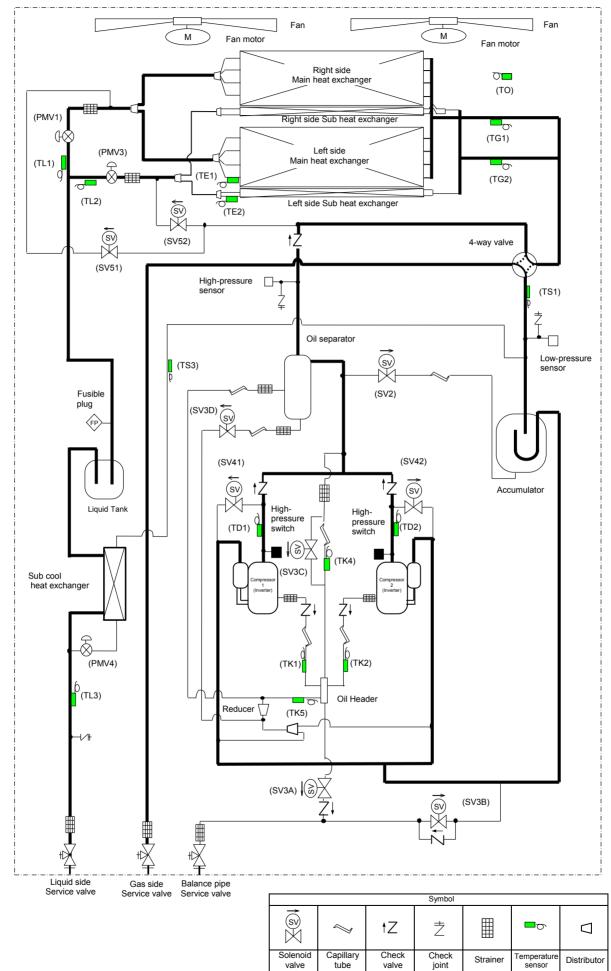


#### Outdoor Unit (8, 10, 12HP) Model: MMY-MAP0806\*-E/TR, MMY-MAP1006\*-E/TR, MMY-MAP1206\*-E/TR

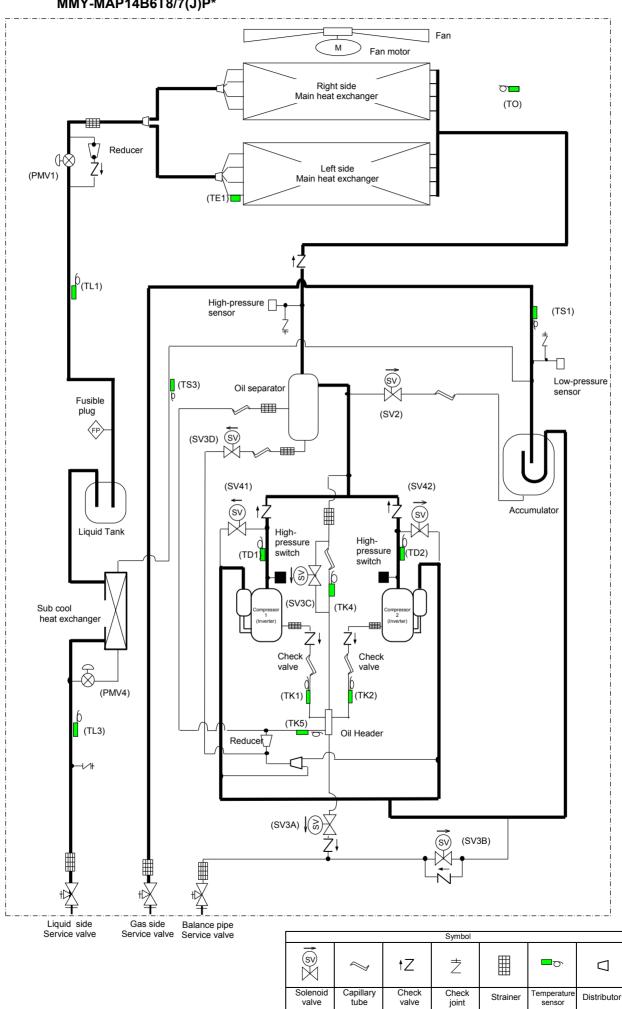


#### Outdoor Unit (14, 16HP) Model: MMY-MAP1406\*-E/TR, MMY-MAP1606\*-E/TR



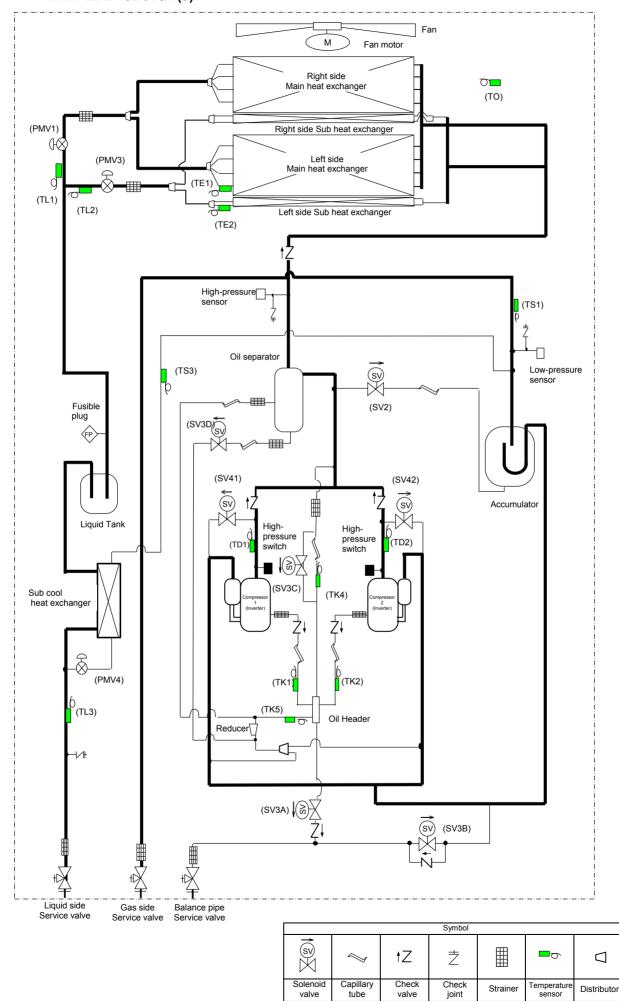


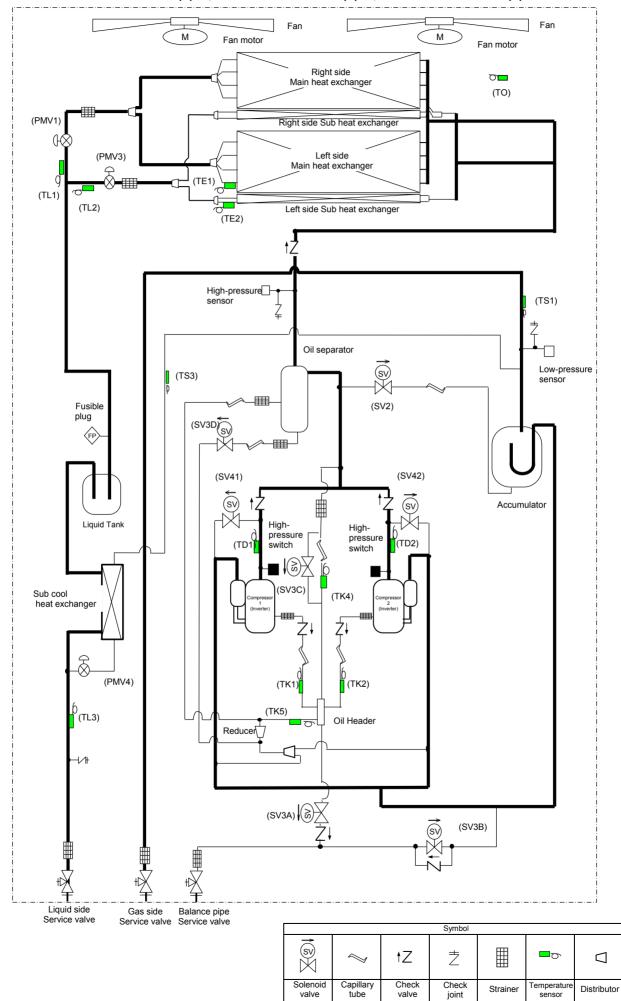
#### Outdoor Unit (18, 20, 22HP) Model: MMY-MAP1806\*-E/TR, MMY-MAP2006\*-E/TR, MMY-MAP2206\*-E/TR



#### Outdoor Unit (8, 10, 12, 14HP) Model: MMY-MAP0806T8/7(J)P\*, MMY-MAP1006T8/7(J)P\*, MMY-MAP1206T8/7(J)P\* MMY-MAP14B6T8/7(J)P\*

#### Outdoor Unit (14, 16, 18HP) Model: MMY-MAP1406T8/7(J)P\*, MMY-MAP1606T8/7(J)P\* MMY-MAP18B6T8/7(J)P\*



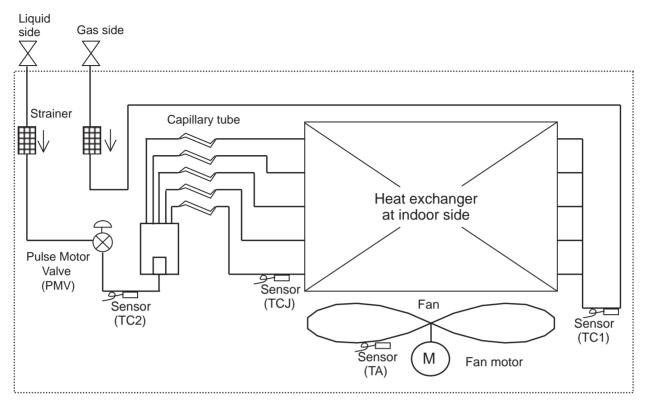


Outdoor Unit (18, 20, 22HP) Model: MMY-MAP1806T8/7(J)P\*, MMY-MAP2006T8/7(J)P\*, MMY-MAP2206T8/7(J)P\*

#### **Explanation of Functional Parts**

Functional pa		Functional outline
	SV2	<ul> <li>(Hot gas bypass) (Connector CN311: White)</li> <li>1) Low pressure release function</li> <li>2) High pressure release function</li> <li>3) Gas balance function during stop time</li> </ul>
	SV3A	<ul><li>(Connector CN321: White)</li><li>1) Supplies oil reserved in the oil header during ON time.</li></ul>
	SV3B	<ul><li>(Connector CN321: White)</li><li>1) Returns oil supplied in the balance pipe to the compressor.</li></ul>
	SV3C	<ul><li>(Connector CN321: White)</li><li>1) Pressurizes oil reserved in the oil header during ON time.</li></ul>
Solenoid valve	SV3D	<ul><li>(Connector CN322: White)</li><li>1) Reserves oil in the oil separator during OFF time.</li><li>2) Returns oil reserved in the oil separator to the compressor during ON time.</li></ul>
	SV41 SV42	(Start assure valve of compressor) (SV41 Connector CN312: Blue, SV42 Connector CN312: Blue. 1) For gas balance start 2) High pressure release function 3) Low pressure release function
	SV51	(Connector CN314: White) 1) Gas injection function during hot gas defrost in heating operation
	SV52	(Connector CN314: White) 1) Preventive function for high-pressure rising in heating operation 2) Gas injection function during hot fas defrost in heating operation
4-way valve		(Connector CN317:Blue) 1) Cooling/heating exchange 2) Reverse defrost
Pulese motor valve	PMV1, 3	<ul> <li>(PMV1 Connector CN300: White, PMV3 Connector CN302: Blue)</li> <li>1) Super heat control function in heating operation</li> <li>2) Liquid line shut-down function while follower unit stops</li> <li>3) Subcool adjustment function in cooling operation</li> <li>4) Exchange function between main and sub exchangers in cooling operation</li> </ul>
	PMV4	<ul> <li>(Connector CN303: Red)</li> <li>1) Subcool adjustment function in cooling operation</li> <li>2) Liquid bypass function for discharge temperature release (cooling bypass function)</li> </ul>
Oil separator		<ol> <li>Prevention for rapid decreasing of oil (Decreases oil flowing to the cycle)</li> <li>Reserve function of surplus oil</li> </ol>
	TD1 TD2	<ul> <li>(TD1 Connector CN502: White, TD2 Connector CN503: Pink )</li> <li>1) Protection of compressor discharge temp.</li> <li>2) Used for dischage temperature release</li> </ul>
	TS1	<ul> <li>(Connector CN505: White)</li> <li>1) Controls PMV1 super heat in heating operation</li> <li>2) Protection of compressor</li> </ul>
	TS3	(Connector CN903: Purple) 1) Controls PMV4 super heat in heating operation
	TG1 TG2	(TG1 Connector CN525: Blue, TG2 Connector CN526: White ) 1) Controls PMV1 super heat in heating operation
Temp. Sensor	TE1 TE2	(TE1 Connector CN520: Green, TE2 Connector CN521: Red ) 1) Controls defrost in heating operation 2) Controls outdoor fan in heating operation
	ТК1,ТК2 ТК4,ТК5	(TK1 Connector CN531: Black, TK2 Connector CN532: Green, TK4 Connector CN534: Yellow, TK5 Connector CN535: Red) 1) Judges oil level of the compressor
	TL1,TL2 TL3	(TL1 Connector CN523: White, TL2 Connector CN524: Gray, TL3 Connector CN902: Pink) 1) Detects subcool in cooling operation
	то	(Connector CN507: Yellow) 1) Detects outside temperature
Pressure sensor	High pressure sensor	<ul> <li>(Connector CN501: Red)</li> <li>1) Detects high pressure and controls compressor capacity</li> <li>2) Detects high pressure in cooling operation, and controls the fan in low ambient cooling operation</li> <li>3) Detects subcool in indoor unit in heating operation</li> </ul>
	Low pressure sensor	(Connector CN500: White) 1) Detects low pressure in cooling operation and controls compressor capacity 2) Detects low pressure in heating operation, and controls the super heat
	Compressor case heater	(Compressor 1 Connector CN331: White, Compressor 2 Connector CN332: Blue. 1) Prevents liquid accumulation to compressor
Heater	Accumulator case heater	(Connector CN334: Red) 1) Prevents liquid accumulation to accumulator
Balance pipe		1) Oil balancing in each outdoor unit
High pressure switch	High pressure SW 1 High pressure SW 2	(High pressure SW 1,2 Connector CN251: BLK) 1) Piping resisting pressure protection

#### Indoor Unit



### 

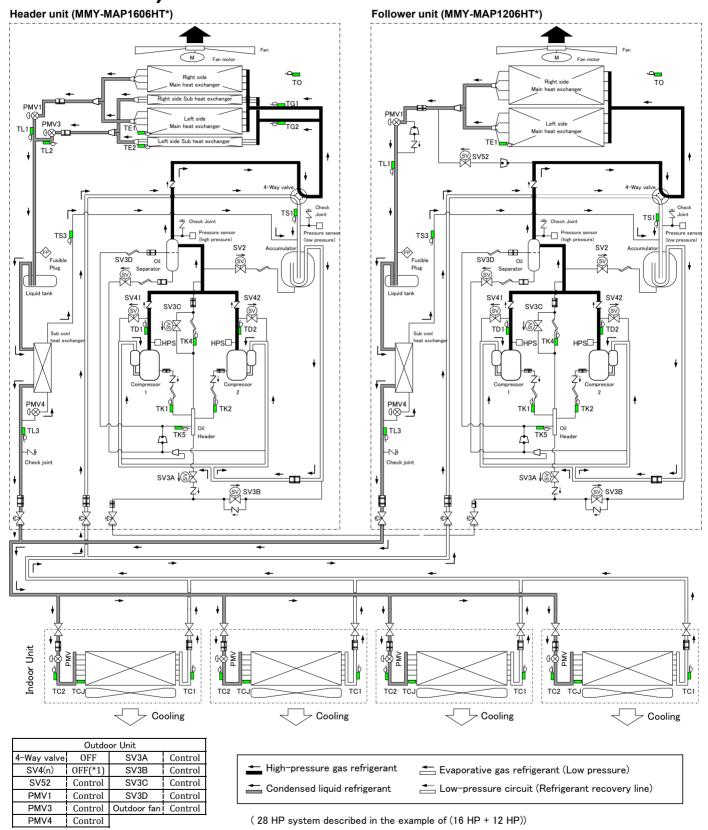
MMU-AP007YH, AP012YH type air conditioners have no TC2 sensor.

#### Explanation of functional parts in indoor unit

Functional part name		Functional outline
Pulse Motor Valve	PMV	<ul> <li>(Connector CN082 (6P): Blue)</li> <li>1) Controls super heat in cooling operation</li> <li>2) Controls subcool in heating operation</li> <li>3) Recovers refrigerant oil in cooling operation</li> <li>4) Recovers refrigerant oil in heating operation</li> </ul>
Temp. Sensor	1.TA	(Connector CN104 (2P): Yellow) 1) Detects indoor suction temperature
	2.TC1	(Connector CN100 (3P): Brown) 1) Controls PMV super heat in cooling operation
	3.TC2	(Connector CN101 (2P): Black) 1) Controls PMV subcool in heating operation
	4.TCJ	<ul> <li>(Connector CN102 (2P): Red)</li> <li>1) Controls PMV super heat in cooling operation</li> <li>2) [MMU-AP007YH to AP012YH only] Controls PMV subcool in heating operation</li> </ul>

# **4** Combined Refrigerant Piping System Schematic Diagrams

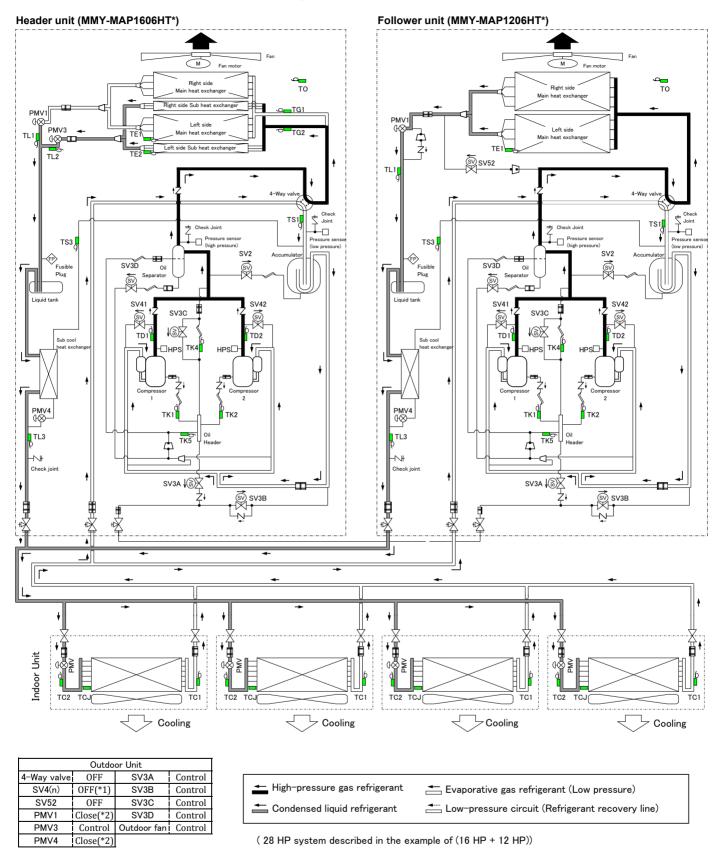
4-1. Normal Operation (COOL Mode / DEFROST Mode) -High Outside Air Temperature (Roughly 20°C or Above)



(\*1) SV4 (n) of stopped compressor (n)=ON

(\*2) It may be controlled.

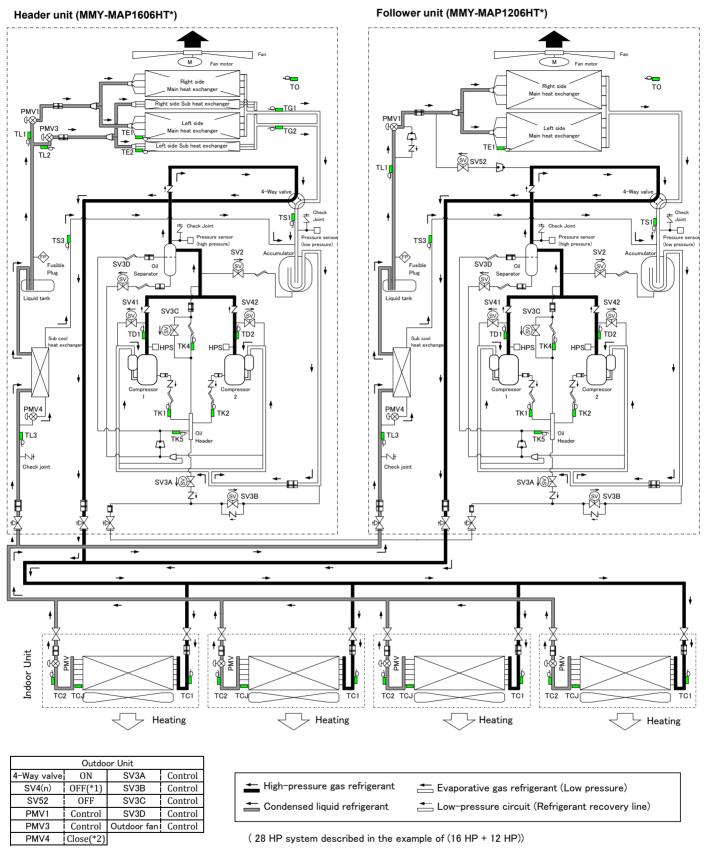
## 4-2. Normal Operation (COOL Mode) - Low Outside Air Temperature (Roughly Below 20°C)



(\*1) SV4 (n) of stopped compressor (n)=ON

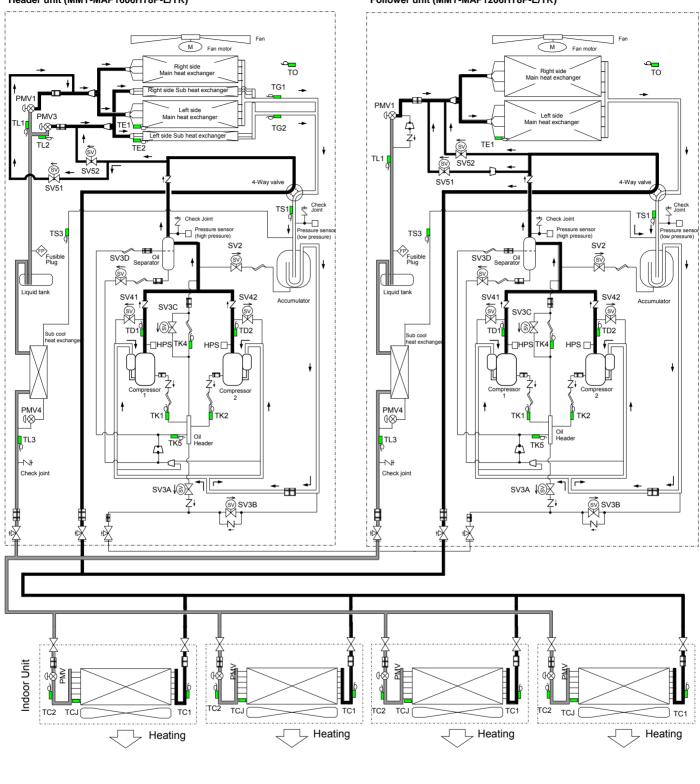
(\*2) It may be controlled.

## 4-3. Normal Operation (HEAT Mode)



(\*1) SV4 (n) of stopped compressor (n)=ON(\*2) It may be controlled.

## 4-4. Normal Operation (HOT GAS DEFROST Mode)



Header unit (MMY-MAP1606HT8P-E/TR)

#### Follower unit (MMY-MAP1206HT8P-E/TR)

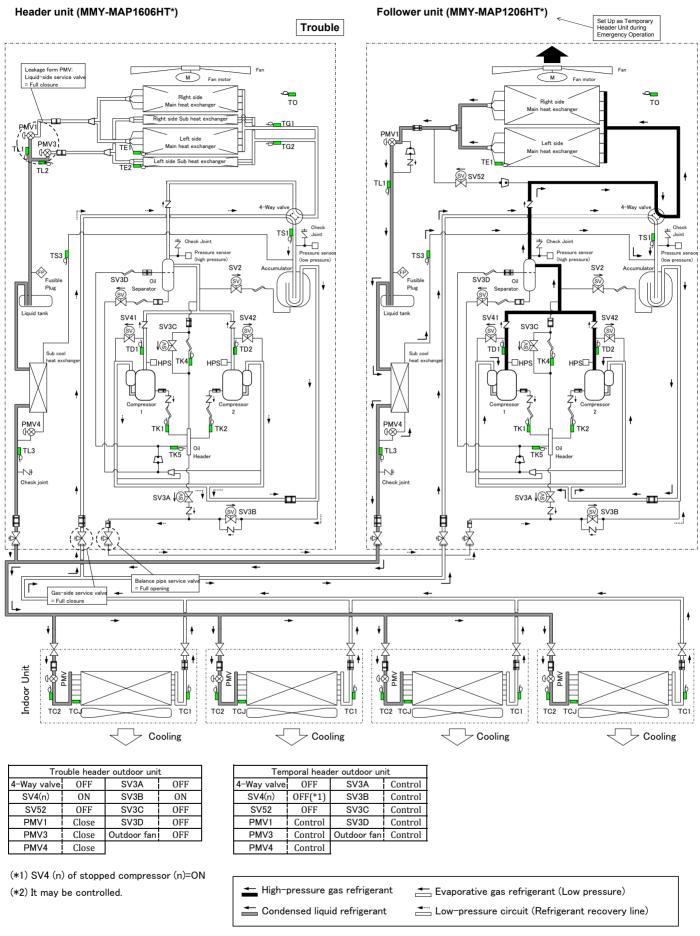
Outdoor Unit 4-Way valve ON SV3A Control SV4(n) OFF(\*1 SV3B Control SV51/52 ON SV3C Control PMV1 Close SV3D Control PMV3 Outdoor fan OFF Close PMV4 Close

High-pressure gas refrigerant
 Evaporative gas refrigerant (Low pressure)
 Condensed liquid refrigerant
 Low-pressure circuit (Refrigerant recovery line)

( 28 HP system described in the example of (16 HP + 12 HP))

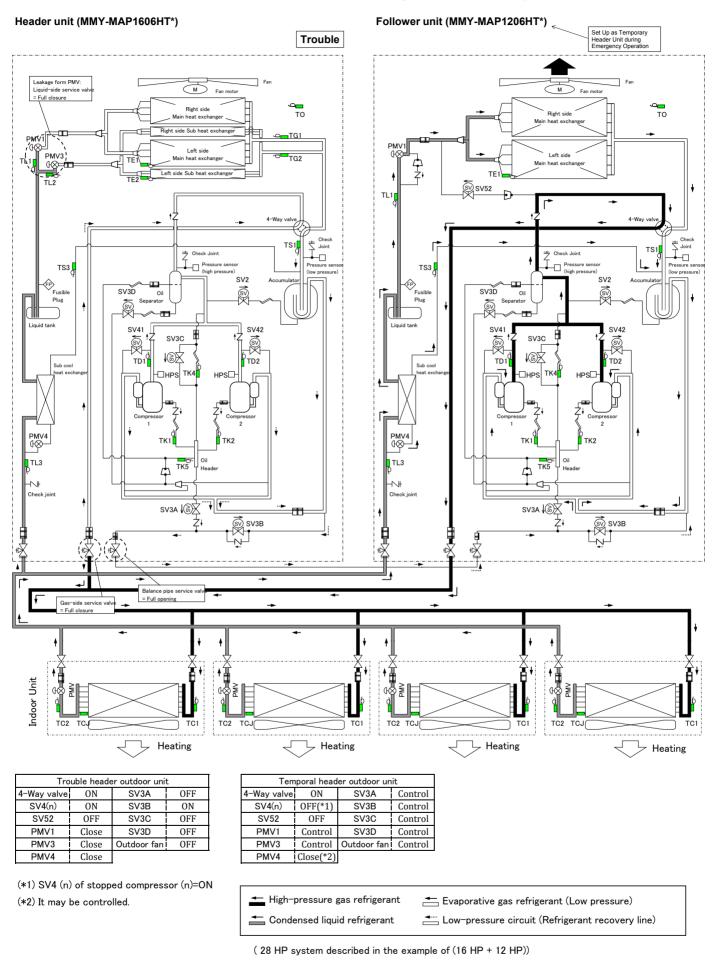
(\*1) SV4 (n) of stopped compressor (n)=ON

## 4-5. Emergency Operation (Cooling Operation under Header Outdoor Unit Backup Scenario)

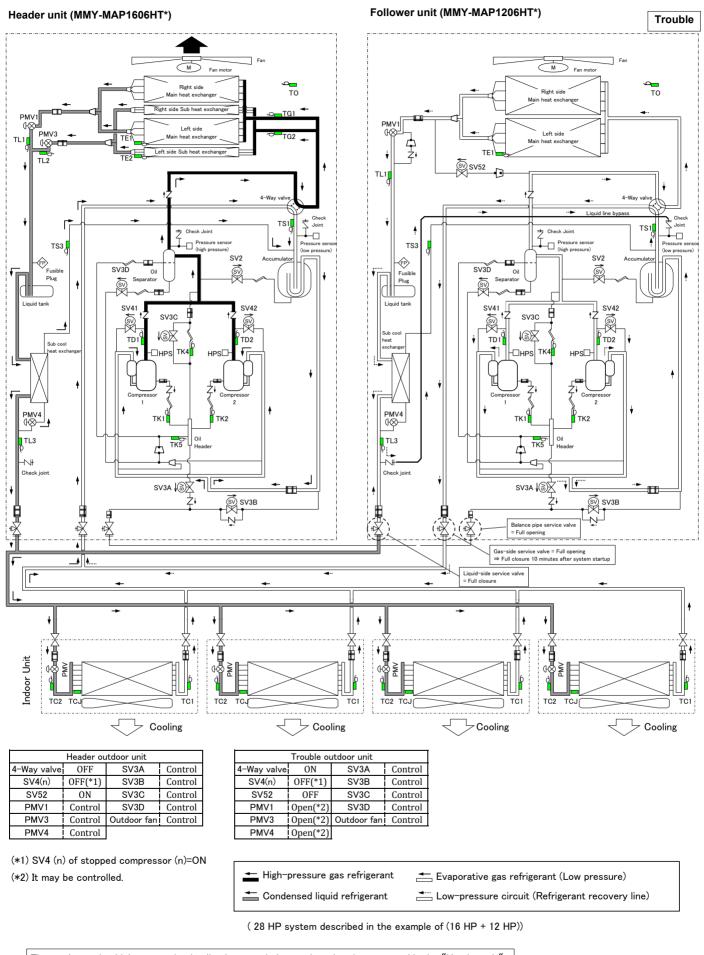


( 28 HP system described in the example of (16 HP + 12 HP))

## 4-6. Emergency Operation (Heating Operation under Header Outdoor Unit Backup Scenario)



## 4-7. Refrigerant Recovery from Failed Outdoor Unit (Pump-Down Operation under Follower Outdoor Unit Backup Scenario)

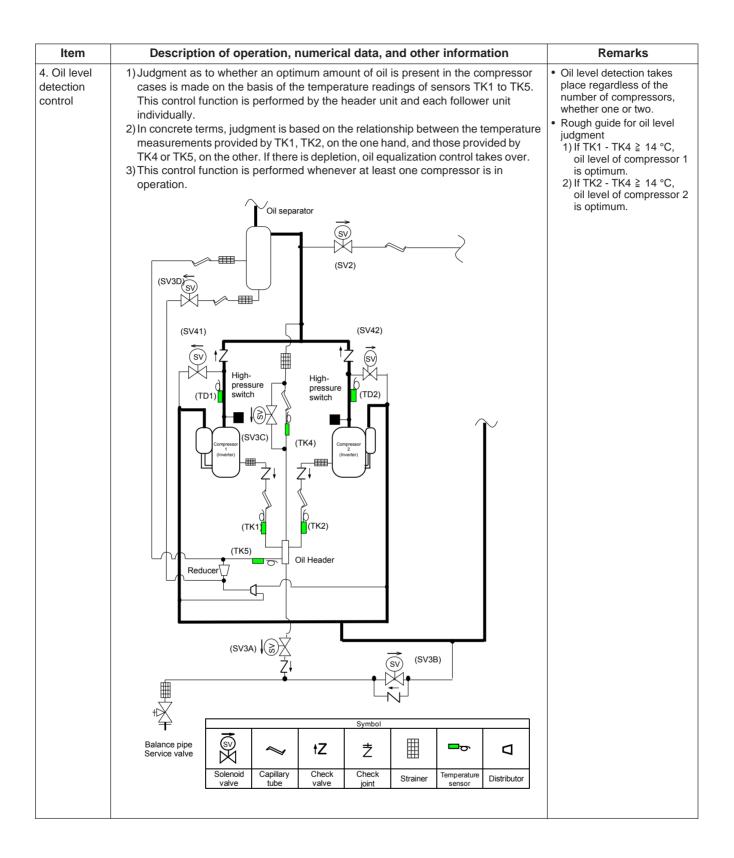


## **5** Control Outline

## Outdoor Unit

Item	Description of operation, numerical data, and other information	Remarks
1. Pulse motor valve (PMV) control	<ul> <li>1. PMV1, 3 control (PMV1 and 3)</li> <li>1) During air conditioner operation, the pulse count of a PMV1 (pulse motor valve 1) is controlled between 120pls and 3000pls. During air conditioner operation, the pulse count of PMV3 is controlled between 45pls and 500pls.</li> </ul>	
	<ol> <li>2) During cooling, the PMV opening is controlled on the basis of measurements provided by the TL temperature sensor and the Pd pressure sensor (subcool control).</li> <li>3) During heating, the PMV opening is controlled on the basis of measurements provided by the TS, TD and TG temperature sensors and the PS pressure sensor (super heat control).</li> <li>4) PMVs are fully closed when the air conditioner is in thermostat OFF state or upon being turned off normally or shut down due to an abnormality.</li> </ol>	
	3000 Sound of the second seco	
	<ul> <li>2. PMV4 control</li> <li>1) During cooling, the pulse count of a PMV4 (pulse motor valve 4) is controlled between 45pls and 500pls. The PMV4 opening is controlled on the basis of measurements provided by the TL3 tenperature sensor and PD pressure sensor (Subcool control), or TS3 temperature sensor and PS pressure sensor (super heat control).</li> <li>2) During heating, the pulse count of a PMV4 is controlled between 0pls and 400pls. The PMV4 opening is controlled on the basis of measurements provided by the TL3 tenperature sensor and PS pressure sensor (super heat control).</li> <li>2) During heating, the pulse count of a PMV4 is controlled between 0pls and 400pls. The PMV4 opening is controlled on the basis of measurements provided by the TD1 or TD2.</li> </ul>	
	Opening of PMV4 during cooling (pls) Minimum Maximum (pls) Minimum Maximum (pls)	

Item	Description of operation, numerical data, and other information	Remarks
2. Outdoor fan control	<ol> <li>Cooling fan control         <ol> <li>Outdoor fan speed (mode) is controlled on the basis of measurements provided the Pd pressure sensor.</li> <li>For a specified period after the start of cooling operation, the header outdoor un controls outdoor fan speed (mode) on the basis of measurements provided by th Pd pressure sensor. Follower units, on the other hand, control outdoor fan speed (mode) on the basis of measurements provided by the Pd pressure sensor.</li> </ol> </li> </ol>	hit ne ed
	Pd pressure (MPa) 3.0       [Highest mode]       [Current mode + 1] (Mode raised as rapidly as every second)         2.65       [Highest mode]       [Current mode + 1]/50 seconds         2.45       [Current mode + 1]/50 seconds]       [Current mode + 1]/75 seconds]         2.35       [Current mode - 1]/50 seconds]       [Current mode + 1]/75 seconds]         2.15       [Current mode - 1]/50 seconds]       [Mode being raised: mode 0 → 1]         1.95       [Current mode - 1] → 1]       [Mode being lowered: Highest mode - 1 → 1]         1.95       [Current mode - 1] → 1]       [Mode lowered as rapidly as every two seconds]         (down to mode 0)       [Mode [0]: 180 seconds]         * Available control modes are 0 (at rest) to 63.         2. Heating fan control       1) Outdoor fan speed (mode) is controlled on the basis of measurements provided the TE1 or TE2 temperature sensor.         2) If TE1 or TE2 > 25°C is continuously detected for 8 minutes, the fan may be turned However, this condition is the same as normal thermostat OFF, so that fan operation will be restarted.         3) For a specified period after air conditioner startup and during defrosting, this control is disabled.         4) When refrigerant is in extremely short supply, this control may cause the air conditioner to be repeatedly turned on and off.         TE1 temperature (°C)	• The fan speed corresponding to the highest mode varies with the HP capacity of the outdoor unit.
3. Capacity control	25       Zone A: Lowest mode, timer count for forced compressor shutdown         25       Zone B: -2/15 seconds (down to lowest mode)         8       Zone C: -1/15 seconds (down to lowest mode)         6       Zone D: Hold (staying at current mode)         2       Zone E: +1/15 seconds (up to highest mode)         2       Zone F: Highest mode         3. Control while follower unit at rest       The fan is operated at mode 1 to prevent the accumulation of refrigerant inside th outdoor heat exchanger.         1) The compressors of the header and follower units are controlled on the basis or capacity demand issued by indoor controllers.	<ul> <li>The fan speed corresponding to the highest mode varies with the HP capacity of the outdoor unit.</li> </ul>
	<ul> <li>2) The two compressors featured in an outdoor unit operate on a rotational basis, so that, every time they come to a stop, their order of startup changes.</li> <li>3) Where two follower units are connected, every time the system goes thermostat OFF or all the compressors featured in the follower units come to stop, the priority startup order of the follower units changes, as they are a subject to rotational operation.</li> </ul>	



ltem	Description of operation, numerical data, and other information	Remarks
5. Oil equation control	<ul> <li>This control function is aimed at preventing compressors from running out of oil by evening out the oil supply to outdoor units, and is basically performed by opening/ closing solenoid valves SV3A, SV3B, SV3C, SV3D. There are three control patterns as described below. (For a schematic diagram of oil equalization control, see page 57.)</li> <li>1. Preparatory control If the oil level judgment result in the memory continues to be "low" for 30 seconds, SV3B is turned on, with SV3D turned on and off intermittently.</li> </ul>	<ul> <li>Oil accumulated in the oil separator is returned to the compressor.</li> </ul>
	<ul> <li>2. Oil equation control</li> <li>This control function is performed to transfer oil to the outdoor unit whose oil level is low from other outdoor units. It takes place whenever the header unit registers a low oil level result while at least one of its compressors is turned on or at least one of the follower units issues an oil level equation request.</li> <li>This control function does not apply to a header unit-only system (no follower units connected).</li> </ul>	<ul> <li>This is normal oil equalization control.</li> </ul>
	3. Oil depletion protection control This control function is performed if oil equation control fails to achieve an optimum oil level. In concrete terms, if a low oil level situation continues for 30 minutes, the unit is brought to a protective shutdown, followed by a restart 2 minutes and 30 seconds later. If protective shutdown is repeated three times, the error is confirmed as final. (There will be no more restarts.) The check code is "H07".	This protective control is performed when a prolonged low oil level is detected.
6. Refrigerant/ oil recovery control	<ol> <li>Cooling oil (refrigerant) recovery control Performed during cooling, this control function aims to: periodically collect any refrigerating oil condensate that has built up in inter-unit gas pipes and indoor units and return it to outdoor units when the compressor operation command is inadequate; and prevent the accumulation of refrigerant in outdoor heat exchangers while cooling operation is in progress under low outside air temperature conditions. It is managed by the header outdoor unit.</li> <li>Control commencement conditions         <ul> <li>When cooling operation has continued for at least 2 hours</li> <li>When cooling operation has started (compressors have just been turned on, though this does not always happen depending on outside air temperature conditions).</li> </ul> </li> <li>Control details         <ul> <li>All compressors currently in operation are operated at the minimum speed, with those currently not in operation turned on.</li> <li>Indoor units are set to the cooling oil (refrigerant) recovery control mode, with their</li> </ul> </li> </ol>	<ul> <li>Cooling oil recovery control takes place approximately every 2 hours.</li> <li>Control duration is about 2 to 5 minutes, though it varies according to the operating conditions of the system.</li> </ul>
	<ul> <li>indoor PMVs opened to a certain degree.</li> <li>Compressors are operated at the target speed.</li> <li>After recovery control is performed for a specified period of time, it is terminated, and normal cooling operation resumes.</li> <li>Heating refrigerant (oil) recovery control</li> </ul>	Heating oil recovery control
	<ul> <li>Performed during heating, this control function aims to recover any liquid refrigerant trapped inside indoor units that have been turned off. It also serves the additional purposes of recovering indoor/outdoor refrigerant after defrosting and recovering oil present in outdoor heat exchangers during heating overload operation.</li> <li>This control function is managed by the header outdoor unit.</li> <li>1) Control commencement conditions <ul> <li>When heating operation has started (compressors have just been turned on)</li> <li>When heating operation has continued for 60 minutes</li> </ul> </li> <li>2) Control details <ul> <li>All compressors currently in operation are operated at the minimum speed, with those</li> </ul> </li> </ul>	<ul> <li>takes place approximately every hour.</li> <li>Control duration is about 2 to 10 minutes, though it varies according to loading conditions.</li> <li>Compressor rotational speed varies with control conditions, indoor unit capacity, and outdoor unit specification.</li> </ul>
	<ul> <li>Indoor units are set to the heating refrigerant (oil) recovery control mode, with their indoor PMVs opened to a certain degree.</li> <li>Compressors are operated at the target speed.</li> <li>Upon completion of refrigerant recovery for all the indoor units, normal cooling operation resumes.</li> </ul>	

ltem	Description of operation, numerical data, and other information	Remarks
7. Defrosting control (reverse defrosting method)	<ol> <li>Defrosting commencement conditions</li> <li>During heating operation, the cumulative duration of operation in which TE1 and TE2 sensor temperature falls below frost formation temperature is measured, and when this reaches 55 minutes, defrosting control is introduced. (Just after startup or upon changeover from cooling to heating, the target cumulative duration is 25 minutes.)</li> <li>* If the outdoor units are a combination of different models, all the units begin engaging in defrosting control as soon as one of them satisfies defrosting commencement conditions.</li> </ol>	<ul> <li>Frost formation temperature is -1.5 °C.</li> <li>If the outdoor units are a combination of different models, defrosting operation, once started, cannot be manually terminated for about 2 minutes.</li> <li>In case of All Fresh Air Intake Unit connection system, replace 55 minutes with 30 minutes.</li> </ul>
	<ol> <li>Details of defrosting control</li> <li>All compressors currently in operation are operated at the minimum speed.</li> <li>When a specified amount of time passes from the time the compressors reached the minimum speed, the outdoor fans are turned off by closing the 4-way valves. And the PMV4 opening operated at the target opening for defrosting control.</li> <li>All compressors currently not in operation are turned on and operated at the target rotational speed for defrosting control.</li> </ol>	<ul> <li>To protect the refrigerating cycle circuit, the fan mode may be controlled during defrosting.</li> </ul>
	<ul> <li>3. Defrosting termination conditions</li> <li>Defrosting termination conditions are met when the TE1 and TE2 temperature sensor measurement reaches a specified value (roughly 12 °C) a certain period of time after the commencement of defrosting control. In that event, defrosting termination control takes over.</li> <li>* If the outdoor units are a combination of different models, defrosting termination conditions. As long as one or more outdoor units are yet to satisfy the defrosting termination conditions, those that have engage in standby operation.</li> </ul>	<ul> <li>During defrosting control, compressors are controlled so that their speeds do not exceed 76.6 rps.</li> </ul>
	<ul> <li>4. Details of defrosting termination control</li> <li>1)Compressors are operated at the standby operation speed.</li> <li>2)When a specified amount of time passes, the 4-way valves are opened.</li> <li>3)Indoor heating refrigerant recovery control is performed.</li> <li>For control details, see " 6. Refrigerant/oil recovery control".</li> </ul>	<ul> <li>During standby operation, compressor speed is in the 24-33.5 rps range. (It varies from outdoor unit to outdoor unit.)</li> </ul>
8.Hot gas defrosting control	<ul> <li>1. Hot gas defrosting commencement conditions <ul> <li>During heating operation, the cumulative duration of operation in which the TE1 (or TE2) temperature sensor falls below the frost formation temperature is recorded. Once the time duration exceeds 30 minutes, the hot gas defrosting control begins.</li> <li>*If the outdoor units are in a combination (module), only the outdoor units that are operating their compressors, will perform the hot gas defrosting control.</li> </ul></li></ul>	<ul> <li>Frost formation temperature is -1.5°C.</li> <li>In case of All Fresh Air Intake Unit connection system, hot gas defrosting is not operated.</li> </ul>
	<ul> <li>2. Details of hot gas defrosting control <ol> <li>SV51 and SV52 are opened.</li> <li>PMV1 (and PMV3) are closed.</li> <li>The outdoor fans are turned off.</li> <li>Compressors are operated at the target rotational speed for hot gas defrosting control.</li> </ol> </li> <li>3. Hot gas defrosting termination conditions <ul> <li>Hot gas defrosting termination conditions are met when the TS1 (or TG1 and TG2) temperature sensor measurement reaches a value of 12°C for a specified value of time (within 4.5 minutes) after the commencement of hot gas defrosting control. In the event that these values are achieved the hot gas defrosting termination control will take over.</li> </ul></li></ul>	<ul> <li>When outside temperature is -10°C or lower, hot gas defrosting control is disabled. (Only Reverse defrosting). This is due to insufficient capacity output, from the outdoor unit, resulting in potentially unacceptable performance</li> <li>During hot gas defrosting control, compressors are controlled so that their speeds do not exceed 76.6 rps.</li> </ul>
	*For module installations (multiple outdoor units). During Hot gas operation, ALL outdoor units must meet the termination conditionings for the hot gas control. If not the following defrost operation (25 minutes later if TE1 (or TE2) temperatures measurements continues below the frost formation temperature) will results in a standard reverse defrosting operation.	
	<ul> <li>4. Details of hot gas defrosting termination control</li> <li>1) Open the PMV1 (and PMV3) to a certain degree.</li> <li>2) SV51 and SV52 are closed.</li> <li>3) Normal heating operation resumes.</li> </ul>	

ltem	Descrip	tion of op	eration, n	umerical d	ata, and o	ther infor	mation	Remarks
9. Release valve control	turned on. It i outdoor unit. 1)Control cor In cooling. In heating 2)Control det The control	unction is a are turned is individual additions , compresso , the header calls of point is ch e the compre $\geq$ P1, SV2 i	imed at ach off so as to ly performe rs have bee r unit has be anged acco essors were s opened. W	reduce the ed by the he n turned off. en shut dow rding to $\Delta P$ ( turned off.	ir startup loa ader outdoo n. (Pd pressure	ad the next or unit and o	time they are each follower ure) registered closed.	
		1		1			(Unit: MPa)	
	Control points		ating			bling		
	for Pd pressure	-	compressors FF		compressors FF		compressors DN	
	P1, P2	P1	P2	P1	P2	P1	P2	
	Header unit	1.3	1.1	1.3	1.1		_	
	Follower unit	1.3	1.1	1.3	1.1	0.5	0.4	
	2) Control det • When Pd • When Pd 3) Termination • Shutdown • The numb • At least or • The speed 3. SV2 low press This control f operation. It i outdoor unit.	unction is a ow speeds. nditions peration is ir mpressor fro ails pressure be pressure be n conditions , thermostat er of heade ne follower u d of the com sure releas unction is a s individual s always pro ails pressure be	imed at mit n progress (6 om the head comes ≧ 3. comes ≧ 2.6 s OFF, defror r unit compres pressor rise re control imed at pre ly performe povided exce comes ≦ 0.1	except period er unit is in c 4 MPa, SV2 8 MPa, SV2 sting operati essors in operati essor is turned s to 40 rps o eventing a ra ed by the he ept during per 16 MPa, SV2	ds of defrost operation at I is opened. is closed. on, or coolin eration incre f on. r more. apid fall in p ader outdoo eriods of sto 2 is opened.	ing control). ow speeds g operation ases to two ressure du or unit and o	of up to 36 rps. ring transient	

ltem	Description of operation, numerical data, and other information	F	Remarks	6
9. Release valve control (cont'd)	<ul> <li>4. SV41, 42 low pressure release control This control function is aimed at providing low pressure protection, and is individually performed by the header unit and each follower unit. The control takes place during defrost operation, heating startup pattern control operation, and cooling operation.</li> <li>1) Control details (heating) When Ps pressure becomes ≤ 0.1 MPa, SV41, 42 are opened; when Ps pressure becomes ≥ 0.15 MPa, SV41, 42 are closed.</li> <li>2) Control details (cooling) When Ps pressure and Pd pressure become ≤ 0.14 MPa and ≤ 1.8 MPa, respectively, SV41 and 42 are opened; when Ps pressure and Pd pressure become ≥ 0.19 MPa and ≥ 2.2 MPa, respectively, SV41 and 42 are closed.</li> <li>5. SV52 high pressure release control This control function is aimed at mitigating pressure rise and is only performed by the header unit.</li> <li>1) Control details (heating) When Pd pressure and compressor speed become ≥ 3.4 MPa and ≤ 38 rps, respectively, during heating, with a single compressor in operation, SV52 is opened; when Pd pressure becomes ≥ 2.7 MPa, or compressor speed ≥ 64 rps, SV52 is closed.</li> </ul>			
10. High pressure release compressor shutdown control	<ul> <li>This control function is aimed at automatically shutting down a compressor in an outdoor unit depending on Pd pressure. It is individually performed by the header unit and each follower unit.</li> <li>1) Control details <ul> <li>Compressors are shut down when Pd pressure reaches or exceeds P01 and P02.</li> <li>The compressor restart prevention timer (2 minutes 30 seconds) is set, and the control terminated.</li> </ul> </li> </ul>	compres startup o compres shut dow • When Po No. 1 (th	the last one sors in ter rder in a t sor config rn. d ≧ P02 c he first co of startup rn.	e of two rms of wo uration) is ompressor mpressor
11. Case heater control	<ul> <li>There are two types of case heaters: a compressor case heater and an accumulator case heater. This control function is aimed at preventing the accumulation of refrigerant in those cases, and is performed by all outdoor units.</li> <li>If the power supply has not been turned on for a specified period before a post-installation test run, compressor failure may occur. Similarly, when starting compressors after a long period of no power supply, it is recommended that the power supply be turned on for a while before operation is resumed, just like a post-installation test run.</li> <li>This control function is sometimes used alongside an electrical charging of the compressor motor windings. In this case, a charging sound may be heard, but this is normal.</li> <li>1) Control details <ul> <li>The heaters are turned on while the compressors are turned off.</li> <li>The heaters are turned off when T0 sensor temperature becomes ≥ 28 °C, and are turned back on when T0 sensor temperature becomes ≤ 25 °C.</li> <li>When the compressors are turned on, the heaters are kept on for 10 minutes.</li> </ul> </li> </ul>			

ltem	Desc	cription of ope	ration, numerica	I data, and of	her informati	on	Remarks
2. A3-IPDU control	speeds, spe interface P.C The main co 1. Current re To preven	ed increases/de C. board. ontrol functions o elease control at inverter input is controlled wi	pressors by issuing preases, and current of the IPDU P.C. bo current from exceed th AC input current	ent release con pard are descri ding the specif	trol values via t bed below. ed value, outpo	he ut	
		Current					
		Current		<b>)</b> \			
		I1	Zone E	·····			
		2	/ Zone D	Zon	e C		
		12	Zone A				
	Current cont	Zone D:Th Zone B:Op Zone C:Th to	mpressors are opera e current operating fi erating frequency is e lowering of operati maintain the current arious outdoor units	requency is mai lowered. Ing frequency is frequency.	halted		
	[ [		it HP capacity	I <sub>1</sub>	l2	1	
				23.7	23.2	{	
			22	23.7	23.2	1	
			18	19.5	19.0	1	
			16A	17.3	16.8	1	
			14A	15.0	14.5	]	
			18B	17.5	17.0		
			16	17.5	17.0		
			14	15.2	14.7		
			12A	12.7 10.5	12.2 10.0	4	
			10A 14B	10.3	12.2	4	
			12	12.7	12.2	1	
			10	10.5	10.0	]	
			8	10.0	9.5	J	
	<ol> <li>This co (TH sei</li> <li>When 1</li> <li>one ste at a rat</li> <li>After st</li> <li>After st</li> <li>When 5</li> <li>Compru</li> <li>Tecor confirm</li> <li>Possil abnor</li> <li>The T IPDU'</li> <li>Overcurre</li> <li>When t abnorm</li> <li>The co of 1 rec a resta</li> </ol>	nsor) mounted i TH ≧ about 75- ap, followed by a e of one step/5 tep 2), the norm TH ≧ 97 °C, cor- essors are resta- ded. If this is re- hed as final. The ble causes of the mality, blockage H temperature u 1, A3-IPDU2. ent protection co- the overcurrent hal current, the over- corded. If the cor- rt, the error cou	aimed at protecting in the compressor of r80 °C *1 is detected series of additional seconds. al fan mode is rester inpressors are shut rted 2 minutes and beated four times ( error [P07] is disp confirmed error incl of the cooling duct, is sed in this control fur portection circuit or compressor is shut arted 2 minutes and pressor successfu	Arive module (C ed, the fan ope al step-ups right ored when TH down. 30 seconds la error count rea layed. (There w lude a heat build and IPDU P.C. Inction is the hig man IPDU P.C. down. d 30 seconds ully operates fo	2201) of A3-IPE ration mode is to up to the high falls to < about ter, with an error ches 4), the error vill be no more dup in the outdo board fault. hest registered board detects ater, with an error at least 10 min	DU. raised by est mode 75~80 °C *1. or count of ror is restarts.) or unit, fan by A3- an	<ul> <li>A3-IPDU1 and 2 are each provided with a TH sensor</li> <li>*1 It changes depending on the model and temperature condition.</li> </ul>
	4. High pres 1) When t compre 2) The co operate	sure SW contro the high pressur essor is shut dov mpressor is res	l e SW of an inverte vn with an error co arted 2 minutes 30 ) minutes, the error	r compressor is unt of 1 record seconds later count is cleare	s activated, the ed. and, if it succe ed.	essfully	<ul> <li>Connected to A3-IPDU, the high-pressure SW is normally closed.</li> </ul>

### <Other points to note>

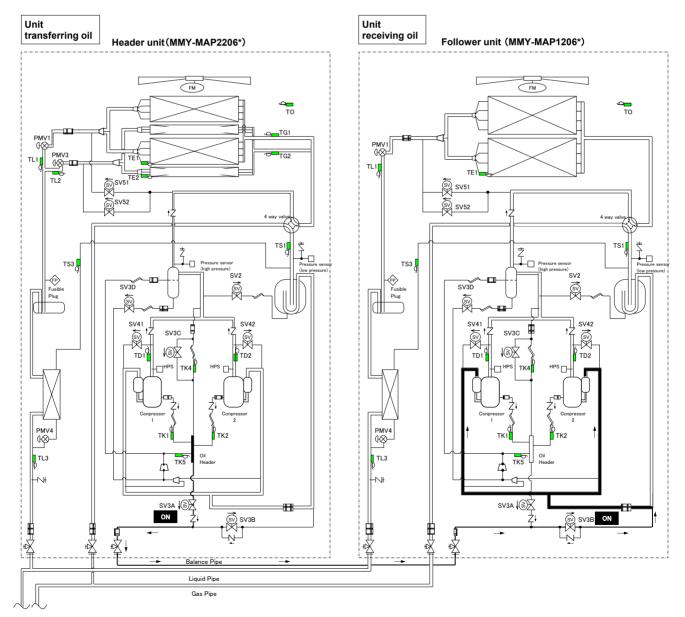
### **1** Cooling operation under low outside temperature conditions

- 1) If pressure falls to extremely low levels, indoor units may be shut down via freeze prevention control based on the indoor TC sensor.
- 2) If pressure falls to extremely low levels, frequency may be reduced via cooling capacity control.
- 3) When the discharge temperature sensor reading falls below 60°C, the frequency may be increased above the level called for by the command received from the indoor unit.

### 2 PMV (Pulse Motor Valve)

- 1) When the power is turned on, PMVs generate a tapping sound as they are initialized. If this sound is not heard, there is a possibility of faulty PMV operation. However, in a noisy environment, it may simply be drowned out by ambient noise.
- 2) Do not separate the actuator (head section) from any PMV during operation. It may result in an inaccurate opening.
- 3) When transporting (relocating) the set, do not, under any circumstances, keep the actuator separated. It may damage the valve by causing it to close and exposing it to pressure from sealed liquid.
- 4) When reattaching the actuator after its removal, push it in firmly until a click sound is heard. Then, turn the power off and back on again.

### <Schematic diagram for oil equation control>



# 6. Applied control and Functions

# 6-1. Applied Control for Indoor Unit

### 6-1-1. Control Specifications

NO.	ltem		S	Spe	ecification o	utline			Remarks
1	Upon power supply reset	2.	Identification of outdoor unit When the power supply is re redirected according to the ic Indoor fan speed and air flow Settings such as indoor fan s replaced on the basis of EEF If power supply reset is perfor If the abnormality persists aff pressed to resume operation controller.	der v d spe PR PR rme ter	ntification resu irection contre- ed and air flo OM data. ed in the wake the Start/Sto	ult. ol availabil ow direction e of a fault, p button or	ity settings a control av the check c a the remot	ailability are ode is cleare e controller is	ed.
	Operation selection		The operation mode changes issued via the remote contro			an operat	on selectio	n command	Ts: Temperature setting Ta: Room temperature
			Remote controller command			Control	outline		
			STOP	/	Air conditioner	shutdown			
2			FAN	-	Fan operation				_
			COOL	_	Cooling operat				_
			DRY		Drying operation				
			HEAT		Heating opera	tion			
	Room temp. control	1.	Adjustment range - remote c		troller temper HEAT	ature setti	ng (°C)		Shift in heating suction temperature
			Wired type 18~29		18~29				(not applicable to remote controller
		thermo operation)							
3			In heating operation, the tem "06". SET DATA	nde					
			Temperature setting adjustme	ent	0 +0°C	2 +2°C	4 +4°C	6 +6°C	-
		-							
4	Automatic capacity control		The outdoor unit determines to the difference between Ta (°C) +2 +1 Ts SB Ts S5 -1	ar Iolin	nd Ts.	Heating S3 S5 S7 S9 SB SD SF	of indoor u	nits accordin	ing Ts: Temperature setting Ta: Room temperature

NO.	ltem	Specification outline	Remarks
	Fan speed control	<ul> <li>1. The fan operates in one of the four speed modes of "HIGH (HH)", "MED (H)", "LOW (L)" and "AUTO" on the basis of a command issued via the remote controller. (Concealed duct high static pressure type: HH only)</li> <li>2. In AUTO fan speed mode, the air speed changes according to the difference between Ta and Ts.</li> <li></li> <li>Cooling&gt;         <ul> <li>Ta (°C)</li> <li>+2.5</li> <li>+2.0</li> <li>HH &lt; HH&gt;</li> <li>B</li> <li>+2.5</li> <li>+1.5</li> <li>H &lt; HH&gt;</li> <li>D</li> <li>+1.5</li> <li>H &lt; HH&gt;</li> <li>E</li> <li>+0.5</li> <li>L &lt; H&gt;</li> <li>F</li> <li>-0.5</li> <li>L &lt; H&gt;</li> <li>F</li> <li>G</li> </ul> </li> </ul>	HH > H+ > H > L+ > L > UL or LL
5		<ul> <li>Control is identical in remote controller thermo and body thermo operation. Speed modes shown in &lt; &gt; apply to cooling operation under AUTO air conditioner operation mode.</li> <li>In AUTO fan speed mode, the fan speed remains the same for 3 minutes each time a speed change occurs. However, a speed change command issued via the remote controller can override this, and the fan speed changes accordingly.</li> <li>At the beginning of cooling operation, a higher speed (steeper downward temperature gradient) is chosen.</li> <li>As long as the temperature difference remains on a boundary line, the fan speed stays the same.</li> </ul>	DN code "32" "0000": Body thermo "0001": Remote controller thermo
		<pre><heating></heating></pre>	
		<ul> <li>In AUTO fan speed mode, the fan speed remains the same for 1 minute each time a speed change occurs. However, a speed change command issued via the remote controller can override this, and the fan speed changes accordingly.</li> <li>At the beginning of heating operation, a higher speed (steeper upward temperature gradient) is chosen.</li> <li>As long as the temperature difference remains on a boundary line, the fan speed stays the same.</li> <li>When TC2 ≧ 60 °C, the fan speed is raised by one step.</li> </ul>	
		3. If the air conditioner goes thermo OFF during heating operation, the fan speed drops down to LL (breeze).	"HEATING STANDBY ()" displayed

NO.	Item	Specification outline	Remarks
6	Cold air discharge prevention control	<ul> <li>1. In heating operation, the upper limit of the fan tap is set according to the lower of whichever is the higher between TC2 sensor and TCJ sensor temperatures, on the one hand, and TC1 sensor temperature, on the other.</li> <li>If the fan continuously operates in zone B for 6 minutes, it automatically moves into zone C.</li> <li>During defrosting, the control point is shifted by +6°C.</li> <li><sup>(°C)</sup> <ul> <li>32</li> <li>30</li> <li>28</li> <li>26</li> <li>20</li> <li>16</li> <li>A</li> </ul> </li> </ul>	<ul> <li>TCJ: Indoor heat exchanger sensor temperature</li> <li>In zones D and E, priority is given to the remote controller fan speed setting.</li> <li>In zone A, "HEATING STANDBY "" is displayed.</li> </ul>
	Freeze prevention control (low temp. release)	<ul> <li>1. During cooling, the air conditioner is operated in the manner described below according to the temperature readings of the TC1, TC2 and TCJ sensors.</li> <li>If zone J operation is detected for 5 minutes, the air conditioner is forced into thermo OFF.</li> <li>In zone K, the timer is put on pause, with the current timer count retained.</li> <li>If zone I operation is detected, the timer count is cleared, and the air conditioner returns to normal operation.</li> <li>If continuous zone J operation forces the air conditioner into thermo OFF, the indoor fan is operated in breeze mode until it moves into zone I. The control is terminated under the following conditions:</li> <li>Termination conditions         <ul> <li>1) TC1 ≥ 12°C, TC2 ≥ 12°C, and TCJ ≥ 12°C</li> <li>2) Passage of 20 minutes after stoppage</li> </ul> </li> <li> <ul> <li>(°C) 01 0. (°C) -10°C 01 0. (°C) -10°C 01 0. (°C) -10°C</li> <li>01 0. (°C) -14°C</li> <li>Temperature in (): If the temperature is below this value when the power is turned on, the air conditioner is forced into thermo OFF.</li> </ul> </li> </ul>	TC1: Indoor heat exchanger sensor temperature
7		<ul> <li>2. During cooling, the air conditioner is operated in the manner described below according to the temperature readings of the TC2 and TCJ sensors.</li> <li>If zone M operation is detected for 45 minutes, the air conditioner is forced into thermo OFF.</li> <li>In zone N, the timer is put on pause, with the current timer count retained.</li> <li>When the air conditioner goes back into zone M, timer count is resumed from the retained value.</li> <li>If zone L operation is detected, the timer count is cleared, and the air conditioner returns to normal operation.</li> <li>(°C) L / N / D / D / D / D / D / D / D / D / D</li></ul>	* With models without TC2, TC2 is not part of the control parameters.

NO.	ltem	Specification outline	Remarks
8	Cooling oil (refrigerant) recovery control	<ul> <li>Recovery operation normally takes place roughly every 2 hours.</li> <li>The opening position of the indoor PMV depending on the type and capacity of the indoor unit.</li> </ul>	
9	Heating refrigerant (oil) recovery control	<ul> <li>While the outdoor unit is recovering heating refrigerant (oil), the indoor units perform the following control tasks: <ol> <li>Open the indoor PMV to a certain degree.</li> <li>Control the indoor fan according to the operation mode.</li> </ol> </li> <li>[Indoor units operating in heating thermo ON/OFF state] <ol> <li>Let the indoor fan continue operating, but turn it off if the temperature of the indoor heat exchanger drops.</li> </ol> </li> <li>[Indoor units operating in FAN mode] <ul> <li>Turn off the indoor fan and display "HEATING STANDBY " on the remote controller.</li> </ul> </li> <li>[Non-operational indoor units] <ul> <li>Keep the indoor fan turned off.</li> <li>Terminate the recovery operation depending on the TC2 temperature reading. The timing of termination is determined by each indoor unit.</li> <li>4) Operate the indoor fan and drain pump for about 1 minute after the termination of the recovery operation. (Applicable to 4-way air discharge cassette type, 2-way air discharge cassette type and 1-way air discharge cassette type)</li> </ul></li></ul>	<ul> <li>Recovery operation normally takes place roughly every hour.</li> <li>The opening position of the indoor PMV depending on the type and capacity of the indoor unit.</li> </ul>
10	Defrosting control	<ul> <li>While the outdoor unit is engaged in defrosting control, the indoor units perform the following control tasks:</li> <li>1) Open the indoor PMV to a certain degree.</li> <li>2) Control the indoor fan according to the operation mode.</li> <li>[Indoor units operating in heating thermo ON/OFF state]</li> <li>Let the indoor fan continue operating for a while, but turn it off as the temperature of the indoor heat exchanger drops.</li> <li>[Indoor units operating in FAN mode]</li> <li>Let the indoor fan continue operating.</li> <li>[Non-operational indoor units]</li> <li>Keep the indoor fan turned off.</li> <li>3) As defrosting control comes to an end, it gives way to heating refrigerant (oil) recovery control.</li> <li>(For control details, see "9. Heating refrigerant (oil) recovery control" above.)</li> </ul>	<ul> <li>For defrosting commencement conditions, see " 7. Defrosting control (reverse defrosting method)" above.</li> <li>The opening position of the indoor PMV depending on the type and capacity of the indoor unit.</li> </ul>
11	Short intermittent operation compensation control	<ol> <li>For 5 minutes after startup, the system is forced to continue operating even if it reaches the thermo OFF region.</li> <li>However, priority is given to cooling/heating selection, operation standby, and protective control, so that there is no overriding of thermo OFF in these cases.</li> </ol>	
12	Drain pump control	<ol> <li>During cooling (including DRY operation), the drain pump is operated at all times.</li> <li>If the float switch is activated while the drain pump is in operation, the drain pump continues operating, with the relevant check code displayed.</li> <li>If the float switch is activated while the drain pump is turned off, thermo OFF is forced on the air conditioner, with the drain pump put into operation. If the float switch continues to be activated for about 5 minutes, the drain pump is turned off, with the relevant check code displayed.</li> </ol>	Check code [P10]
13	Elimination of residual heat	1. When the air conditioner is turned off after engaging in heating operation, the indoor fan is operated for about 30 seconds in "breeze" mode.	

NO.	ltem		Remarks		
	Filter sign display (not applicable to wireless type) * Provided in the separately mounted type, TCB-AX21E.	exceed the presc the remote contro 2. When a filter rese measuring cumul	cumulative hours of operation are ribed value (150H/2500H), a filter iller to display a filter sign on it. et signal is received from the remo ative hours is cleared. If the presc urs count is reset, with the sign on	replacement signal is sent to te controller, the timer ribed hours have been	"FILTER ⊞ " displayed
	TOD-AAZTE.	Filter service life	2500H	150H	
14		Туре	<ul> <li>4-way air discharge cassette type</li> <li>1-way air discharge cassette type</li> <li>(SH, YH)</li> <li>2-way air discharge cassette type</li> <li>Under ceiling type</li> <li>Concealed duct standard type</li> <li>Concealed duct high static</li> <li>pressure type</li> <li>Slim duct type</li> </ul>	High wall type Floor standing type Floor standing concealed type Floor standing cabinet type	
15	Operation standby Heating standby	<ol> <li>When any of the         <ul> <li>"P05" - Detectic</li> <li>"P10" - Detectic</li> <li>"L30" - Detectic</li> </ul> </li> <li>Forced thermo O         <ul> <li>"COOL/DRY" of operating in "HE</li> <li>"HEAT" operation</li> <li>COOL/DRY" m             <ul> <li>P.C. board ON)</li> </ul> </li> <li>All indoor units not thermo OFF state</li> </ul> </li> <li>The indoor fan har refrigerant (oil) re         <ul> <li>Heating standby&gt;</li> <li>Normal thermo O             <ul> <li>During heating, setting is reach</li> <li>During heating, th</li> </ul> </li> </ul></li></ol>	peration is unavailable because at EAT" mode. on is unavailable because at least node under priority cooling setting of able to engage in any of the abo a been turned off because the sys covery operation. Displayed on remote contro FF the indoor unit goes thermo OFF ed. ne fan rotates at a breeze speed (le ent cold air from being discharged	d supply wiring e indoor unit one indoor unit t least one indoor unit is one indoor unit is operating in (bit 1 of SW11 on outdoor I/F ove operations stand by in stem is engaged in a heat oller as the heating temperature UL or lower) or remains	<ul> <li>"OPERATION STANDBY (1)" displayed</li> <li>No display provided on wireless remote controller</li> <li>"HEATING STANDBY (*)" displayed</li> </ul>
		<ul> <li>"HEAT" operation</li> </ul>	on is unavailable because at least node under priority cooling setting	, ,	

NO.	ltem			5	Specifica	ation outli	ne			Remarks
	Selection of central control mode	1. The rang can be d 2. Setting d TCC-Link ce	r In the case of a wired remote controller, "CENTRAL CONTROL IN PROGRESS d ∑" is							
		Operation	displayed (lit up) while							
		via TCC- Link central control	Start/stop selection	Operation mode selection	Timer setting	Temperature setting	Fan speed setting	Air flow direction setting	— RBC- AMT32E display	in central control mode. • The display blinks
		Individual	0	0	0	0	0	0		when a control function inaccessible
		Central 1	×	0	×	0	0	0	"CENTRAL	to a remote controller
16		Central 2	×	×	×	×	0	0	CONTROL IN	<ul><li>is chosen.</li><li>A wireless remote</li></ul>
		Central 3	0	×	0	×	0	0	PROGRESS"	controller has the
		Central 4	0	×	0	0	0	0		same set of control functions, although
	Louver control	settling	the louver I in the set	position is position.		d, the louve		-	r down before	performed via a wireless remote controller while in central control mode, a peep sound alert (5 times) is provided.
17		During collecti     2. Swing set	vely. etting WING" sig	eration, po	ayed, alor	•	e performe	ed indivic		
		During collecti		eration, sv	ving setti	ng can be p	performed	individua	ally or	
		3. Set louve	-	S						
				4	I-way	1-way (S⊦	l) 2-w	ray	Under ceiling	
		No	rmal stop	Do	wnward	Closed	Upw	ard	Horizontal	
		Abn	ormal stop	Do	wnward	No chang	e Upw	ard	Horizontal	
		Heat	ing standb	y U	pward	Upward	Upw	ard	Horizontal	
		Oil/refrig	gerant reco	very U	pward	Upward	No ch	ange	Horizontal	
18	DC motor	(The mot 2. The fan o Note: If the fan	tor turns ir operates ir is rotating	n incremen n accorda while the	ntal steps nce with air condit	.) commands ioner is turr	issued by ned off due	the indo	determined. oor controller. flow of outside ng on the fan	9
				detected,	the indo	or unit is tu	rned off, w	/ith an ei	rror display	

Function	Connector No.	Pin No.	Specification	Remarks
Fan output	CN32	-	DC12V	Factory default setting: ON when indoor unit in operation and OFF when indoor unit at rest
		2	Output	* Fan can be operated on its own by pressing FAN button on remote controller (DN = 31)
HA	CN61	-	Start/stop input	Start/stop input for HA (J01: In place/Removed = Pulse input (factory default)/Step input)
		7	ov(com)	
		ო	Remote controller disabling input	Enables/disables start/stop control via remote controller
		4	In-operation output	ON during operation (HA answerback signal)
		5	DC12V(COM)	
		9	Alarm output	ON while alarm ON
Optional output	CN60	-	DC12V(COM)	
		2	Defrosting output	ON while outdoor unit defrosted
		ო	Thermostat ON output	ON while real thermostat ON (compressor ON)
		4	Cooling output	ON while air conditioner in cooling or related operation (COOL, DRY or cooling under AUTO mode)
		5	Heating output	ON while air conditioner in heating operation (HEAT or heating under AUTO mode)
		9	Fan output	ON while indoor fan ON (air cleaner in use or via interlock wiring)
External	CN80	-	DC12V(COM)	Generates test code L30 and automatically shuts down air conditioner (only if condition persists
error input		2	DC12V(COM)	for 1 minute)
		3	External error input	
FILTER Ontional error	CN70	~	"FILTER/optional/humidifier setting" input	Factory default setting to be humidifier (evaporative + drain pump OFF) Used for control of optional error input (display of action of protective device for equipment connected externally)
		2	0/	* "Optional error input" setting to be performed via the remote controller (DN = 24)
CHK	CN71	~	Check mode input	Used for indoor operation check (prescribed operational status output, such as indoor fan "H" or
Operation check		2	0/	drain pump ON, to be generated without communication with outdoor unit or remote controller)
DISP	CN72	-	Display mode input	Product display mode - Communication just between indoor unit and remote controller enabled (upon turning on of power)
Display mode		2	0V	Timer short-circuited out (always)
EXCT	CN73	-	Demand input	Imposes thermostat OFF on indoor unit
Demand		2	0V	

## 6-1-2. Optional Connector Specifications of Indoor P.C. Board

### 6-1-3. Test Operation of Indoor Unit

### ▼ 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]

- 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.
- 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								
	Norma	al time	Abnormal time							
	DISP pin open	DISP pin short circuit	Abnormal time							
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-1570.

### 6-1-4. Method to Set Indoor Unit Function DN Code

(When performing this task, be sure to use a wired remote controller.)

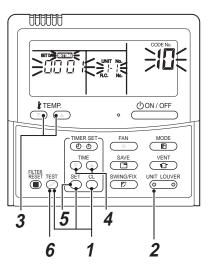
<Procedure> To be performed only when system at rest

**1** Push the  $\overset{\text{TEST}}{\oslash}$  +  $\overset{\text{set}}{\bigcirc}$  +  $\overset{\text{cL}}{\bigcirc}$  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 "Select unit" side of the <u>INIT LOUVER</u> 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 <sup>♣TEMP.</sup> button to select the CODE No. (DN code) of the desired function.
- **4** Use the  $\bigcirc$  **button to select the desired SET DATA associated** with the selected function.
- 5 Push the <sup>≦</sup> 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  $\stackrel{\text{\tiny SET}}{\bigcirc}$  button is pushed, the system returns to normal off state.



DN	Item		Desc	cription	At shipment
01	Filter display delay timer	0000: None 0002: 2500H 0004: 10000H		0001: 150H 0003: 5000H	According to type
02	Dirty state of filter	0000: Standard 0001: High degree of	dirt (Half of sta	indard time)	0000: Standard
03	Central control address	0001: No.1 unit 0099: Unfixed	to	0064: No.64 unit	0099: Unfixed
04	Specific indoor unit priority	0000: No priority		0001: Priority	0000: No priority
06	Heating temp shift	0000: No shift 0002: +2°C	to	0001: +1°C 0010: +10°C (Up to +6 recommended)	0002: +2°C (Floor type 0000: 0°C)
0d	Existence of [AUTO] mode	0000: Provided 0001: Not provided (A	utomatic selec	tion from connected outdoor unit)	0001: Not provided
0F	Cooling only	0000: Heat pump 0001: Cooling only (N	o display of [A	UTO] [HEAT])	0000: Heat pump
10	Туре	0001: 4-way Air Disch	arge Cassette		Depending on model type
11	Indoor unit capacity	0000: Unfixed		0001 to 0034	According to capacity type
12	Line address	0001: No.1 unit	to	0030: No.30 unit	0099: Unfixed
13	Indoor unit address	0001: No.1 unit	to	0064: No.64 unit	0099: Unfixed
14	Group address	0000: Individual 0002: Follower unit of	group	0001: Header unit of group	0099: Unfixed
19	Louver type (Air direction adjustment)	0000: No louver 0002: (1-way Air Disc 0003: (2-way Air Disc 0004: (4-way Air Disc	harge Cassette		According to type
1E	Temp difference of [AUTO] mode selection COOL $\rightarrow$ HEAT, HEAT $\rightarrow$ COOL	0000: 0 deg (For setup temperatur	to re, reversal of (	0010: 10 deg COOL/HEAT by ± (Data value)/2)	0003: 3 deg (Ts±1.5)
28	Automatic restart of power failure	0000: None		0001: Restart	0000: None
2A	Selection of option/error input (CN70)	0000: Filter input 0002: None		0001: Alarm input (Air washer, etc.)	0002: None
2E	HA terminal (CN61) select	0000: Usual 0002: Fire alarm input	t	0001: Leaving-ON prevention control	0000: Usual (HA terminal)
31	Ventilating fan control	0000: Unavailable		0001: Available	0000: Unavailable
32	TA sensor selection	0000: Body TA senso	r	0001: Remote controller sensor	0000: Body TA sensor
33	Temperature unit select	0000: °C (at factory sl	nipment)	0001: °F	0000: °C
F0	Swing mode	0001: Standard 0003: Cycle swing		0002: Dual swing	0001: Standard
F1	Louver fixed position (Louver No.1)	0000: Release 0005: Downward disc	harge position	0001: Horizontal discharge position	0000: Not fixed
F2	Louver fixed position (Louver No.2)	0000: Release 0005: Downward disc	harge position	0001: Horizontal discharge position	0000: Not fixed
F3	Louver fixed position (Louver No.3)	0000: Release 0005: Downward disc		0001: Horizontal discharge position	0000: Not fixed
F4	Louver fixed position (Louver No.4)	0000: Release 0005: Downward disc	harge position	0001: Horizontal discharge position	0000: Not fixed

### Function CODE No. (DN Code) Table (Includes All Functions Needed to Perform Applied Control on Site)

DN	Item				Descrip	otion				At shipment		
	High-ceiling adjustment	1-way a	air discharge ca	0000: Standard								
	(Air flow selection)	Value	Туре	•	AF	015, AP01	8	AP02	24			
		0000	Standard (factory default) 3.5 m or less 3.8 m or less									
		0001	High-ceilir	ng (1)	4.	0 m or less	s	4.0 m or	less			
		0003	High-ceilir	ng (3)	(3) 4.2 m or less		s	4.2 m or	less			
		2-way a	ir discharge cas	ssette								
		Value	Туре	AF	AP007~AP030			AP056				
		0000	Standard (facto	ory default)	2	.7 m or less	s	2.7 m oi	less			
		0001	High-ceilir	ng (1)	3.2	m or less	(*)	3.0 m or	· less			
		0003	High-ceilir	ng (3)	3.8	m or less	(*)	3.5 m oi	less			
		<ul> <li>* The high-ceiling installation of model AP007 to AP012 can only be undertaken when the combined capacity of the indoor units connected is 100% or less than the capacity of the outdoor unit. Do not proceed with high-ceiling installation if this limit is exceeded.</li> <li>4-way air discharge cassette</li> </ul>										
		Value	Туре	AF	P009~AP0	12	A	P015~AP0	18			
		Value	Air flow at outlet	4 directions	3 directions	2 directions	4 directions	3 directions	2 directions			
		0000	Standard (factory default)	2.7 m	2.8 m	3.0 m	2.8 m	3.2 m	3.5 m			
		0001	High-ceiling (1)	-	-	-	3.2 m	3.5 m	3.8 m			
		0003	High-ceiling (3)	-	-	-	3.5 m	3.8 m	-			
		Value	Туре	AF	P024~AP0	30	AP036~AP056					
5d		Value	Air flow at outlet	4 directions	3 directions	2 directions	4 directions	3 directions	2 directions			
		0000	Standard (factory default)	3.0 m	3.3 m	3.6 m	3.0 m	3.3 m	3.6 m			
		0001	High-ceiling (1)	3.3 m	3.5 m	3.8 m	3.3 m	3.5 m	3.8 m			
		0003	High-ceiling (3)	3.6 m	3.8 m	-	3.6 m	3.8 m	-			
		Under ceiling										
		Value Type				1	AP015~AP	056				
		0000	Standard (facto	ory default)			3.5 m or le					
		0001	0001         High-ceiling (1)         4.0 m or less									
	Built-in filter	0000: \$ 0001: \$ 4-way a 0000: \$ Under o 0000: \$ Concea 0000: \$	2-way air discharge cassette 0000: Standard filter (factory default) 0001: Super long-life filter 4-way air discharge cassette 0000: Standard filter (factory default) Under ceiling 0000: Standard filter (factory default) Concealed duct standard 0000: Standard filter (factory default) 0001: High-performance filter (65%, 90%)									
	Static pressure selection	0000: S 0001: H 0003: H	aled duct stand Standard (facto High static pres High static pres Low static pres	ry defauli sure 1 sure 2	t) 0 0 0	lim Duct 000: Star 001: Higł 003: Higł 006: Higł	ndard (fa n static p n static p	ressure 2 ressure 2	1 2			
50	Timer setting (wired remote controller)	0000: A	Available (can b	be perforr		001: Una erformed		(cannot b	be	0000: Available		

### Type DN code "10"

Value	Туре	Model			
0000	1-way Air Discharge Cassette	MMU-AP***SH			
0001* <sup>1</sup>	4-way Air Discharge Cassette	MMU-AP***H			
0002	2-way Air Discharge Cassette	MMU-AP***WH			
0003	1-way Air Discharge Cassette (Compact)	MMU-AP***YH			
0004	Concealed Duct Standard	MMD-AP***BH			
0005	Slim Duct	MMD-AP***SPH (SH)			
0006	Concealed Duct High Static Pressure	MMD-AP***H			
0007	Under Ceiling	MMC-AP***H			
0008	High Wall	MMK-AP***H			
0010	Floor Standing Cabinet	MML-AP***H			
0011	Floor Standing Concealed	MML-AP***BH			
0013	Floor Standing	MMF-AP***H			
0014	Compact 4-way Air Discharge Cassette	MMU-AP***MH			
0015	Super Slim Duct	MMD-AP****M(P)HY			
0016	Fresh Air Intake indoor unit (Duct type)	MMD-AP***HFE			
0018	Console	MML-AP****NH			

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

### Indoor Unit Capacity DN code "11"

Setup data	Model		ſ	Setup data	Model
0000*	*Invalid			0014	-
0040	005 type	MMU-AP0054MH		0015	036 type
0040	005 type	MMD-AP0054SPH		0016	-
0041	005 type	MMU-AP0056MH		0017	048 type
0041	005 type	MMD-AP0056SPH		0018	056 type
0001	007 type			0019	-
0002	008 type			0020	-
0003	009 type			0021	072 type
0004	010 type			0022	-
0005	012 type			0023	096 type
0006	014 type			0024	-
0007	015 type			0025	-
0008	017 type			0026	-
0009	018 type			0027	-
0010	020 type			0028	-
0011	024 type			~	-
0012	027 type			0034	-
0013	030 type		_		

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

### 6-1-5. Applied Control of Indoor Unit

### Control system using remote control interface (TCB-IFCB4E2)

### Wiring and setting

• In the case of group control, the control system functions as long as it is connected to one of the indoor units (control P.C. board) in the group. If it is desired to access the operation and error statuses of other units, relevant signals must be brought to it from those units individually.

### ▼ Control items

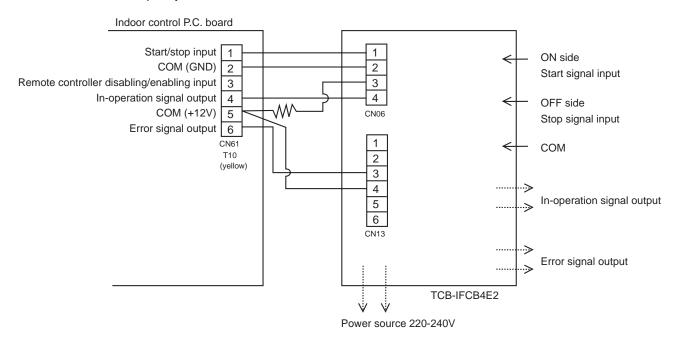
(1) Start/Stop input signal Start/stop of unit

(2) In-operation signal Output present while unit in normal operation

(3) Error signal Output present while alarm (e.g. serial communication error or operation of protective device for indoor/outdoor unit) being activated

### ▼ Wiring diagram of control system using remote control interface (TCB-IFCB4E2)

Input IFCB4E2: No-voltage ON/OFF serial signal Output No-voltage contact (in-operation and error indication) Contact capacity: Max. AC 240V, 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 A contact as an outside input signal.
- In a group control, the units are collectively operated and they can not 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.

### **1** Push concurrently $\stackrel{\text{SET}}{\bigcirc}$ + $\stackrel{\text{C}}{\bigcirc}$ + $\stackrel{\text{TEST}}{\oslash}$ 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 button, the indoor unit numbers in group control are displayed successively.

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

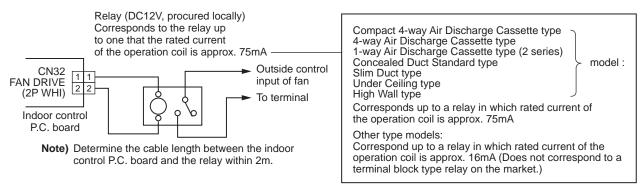
- **3** Using the setup temp  $\frown$  or  $\frown$  button, specify the CODE No. 31.

SET DATA	Handling of operation of air to air heat exchanger or ventilating fan							
0000	Unavailable (At shipment)							
000 1	Available							

#### **5** Push <sup>™</sup> 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  $\stackrel{\text{\tiny TET}}{>}$  returns the status to the usual stop status.

#### 2. Wiring



### ▼ Leaving-ON prevention control

### [Function]

- This function controls the indoor units individually. It is connected with cable to the control P.C. board of the indoor unit.
- In a group control, it is connected with cable to the indoor unit (Control P.C. board), and the CODE No. 2E is set to the connected indoor unit.
- It is used when the start operation from outside if unnecessary but the stop operation is necessary.
- Using a card switch box, card lock, etc, the forgotten-OFF of the indoor unit can be protected.
- When inserting a card, start/stop operation from the remote controller is allowed.
- When taking out a card, the system stops if the indoor unit is operating and start/stop operation from the remote controller is forbidden.

#### 1. Control items

1) Outside contact ON: The start/stop operation from the remote controller is allowed.

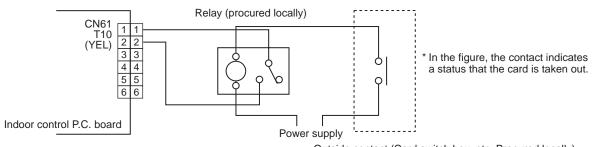
(Status that card is inserted in the card switch box)

- 2) Outside contact OFF: If the indoor unit is operating, it is stopped forcedly. (Start/Stop prohibited to remote controller) (Status that card is taken out from the card switch box)
- \* When the card switch box does not perform the above contact operation, convert it using a relay with b contact.

#### 2. Operation

Handle the wired remote controller switch in the following procedure.

- \* Use the wired remote controller switch during stop of the system.
- **1** Push concurrently  $\overset{\text{set}}{\frown}$  +  $\overset{\text{a}}{\bigcirc}$  +  $\overset{\text{test}}{\textcircled{>}}$  buttons for 4 seconds or more.
- **2** Using the setup temp  $\frown$  or  $\frown$  button, specify the CODE No.  $\mathcal{F}$ .
- **3** Using the timer time  $\bigcirc$  or  $\bigcirc$  button, set [[]]] / to the SET DATA.
- **4** Push  $\stackrel{\text{set}}{\bigcirc}$  button.
- **5** Push  $\stackrel{\text{TEST}}{>}$  button. (The status returns to the usual stop status.)
  - 3. Wiring

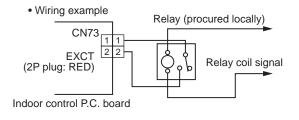


Outside contact (Card switch box, etc: Procured locally)

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

#### Power peak-cut from indoor unit

When the relay is turned on, a forced thermostat-OFF operation starts.



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

# 6-2. Applied Control for Outdoor Unit

The outdoor fan high static pressure support and priority operation mode setting (cooling / heating / number of units / or priority indoor unit) functions are available by setting relevant switches provided on the interface P.C. board of the outdoor unit.

### 6-2-1. Outdoor Fan High Static Pressure Shift

### **Purpose/characteristics**

This function is used when connecting a duct to the discharge port of an outdoor unit (as part of, for example, unit installation on the floor by floor installation.)

### Setup

Turn ON the DIP switch [SW10, Bit 2] provided on the interface P.C. board of the outdoor unit. This function must be enabled with every discharge duct connected outdoor unit for both of the header and follower units.

### **Specification**

Increase the speed of the propeller fan units on the outdoor fan to allow the installation of a duct with a maximum external static pressure not greater than specified in the table below. If a discharge duct with a resistance greater than 15 Pa (1.5 mmAq) is to be used, enable this function. The maximum external static pressures of single units are shown below (Table 1). In the case of combined use of multiple outdoor units, set all the units to the same maximum external static pressure as the one with the lowest maximum external static pressure (see table2).

Table 1: Maximum External Static Pressures of Single Outdoor Units

Model	MMY-	MAP0806*	MAP1006*	MAP1206*	MAP14B6*	MAP10A6*	MAP12A6*	MAP1406*	MAP1608*	MAP18B6*	MAP14A6*	MAP16A6*	MAP1806*	MAP2006*	MAP2206*
Maximum external static pressure (	(Pa)	60	60	50	40	50	50	50	40	40	50	50	50	40	40
(*) Outdoor unit air flow (	(m3/h)	9700	9700	12200	12200	12200	12200	12200	12600	12600	17300	17300	17300	17900	18500

(\*) Calculate duct resistance from outdoor unit air flow.

#### Table 2: Maximum External Static Pressures for Combined Use of Single Units

#### (1-1) For HT8P, HT7P, HT8P-E, T8P-E, HT8P-TR model

			Com	bination of outdoor	units	Maximum external
	Combined horsepower output	Model MMY-	Unit1	Unit2	Unit3	static pressure (Pa)
	8	MAP0806*	MAP0806*	-	-	60
	10	MAP1006*	MAP1006*	-	-	60
	12	MAP1206*	MAP1206*	-	-	50
	14	MAP1406*	MAP1406*	-	-	50
	16	MAP1606*	MAP1606*	-	-	40
	18	MAP1806*	MAP1806*	-	-	50
	20	MAP2006*	MAP2006*	-	-	40
	22	MAP2206*	MAP2206*	-	-	40
	24	AP2416*	MAP1206*	MAP1206*	-	50
	26	AP2616*	MAP1406*	MAP1206*	-	50
	28	AP2816*	MAP1606*	MAP1206*	-	40
	30	AP3016*	MAP1606*	MAP1406*	-	40
o	32	AP3216*	MAP1606*	MAP1606*	-	40
Standard	34	AP3416*	MAP1806*	MAP1606*	-	40
models	36	AP3616*	MAP2006*	MAP1606*	-	40
	38	AP3816*	MAP2206*	MAP1606*	-	40
	40	AP4016*	MAP2006*	MAP2006*	-	40
	42	AP4216*	MAP2206*	MAP2006*	-	40
	44	AP4416*	MAP2206*	MAP2206*	-	40
	46	AP4616*	MAP1606*	MAP1606*	MAP1406*	40
	48	AP4816*	MAP1606*	MAP1606*	MAP1606*	40
	50	AP5016*	MAP1806*	MAP1606*	MAP1606*	40
	52	AP5216*	MAP2006*	MAP1606*	MAP1606*	40
	54	AP5416*	MAP2206*	MAP1606*	MAP1606*	40
	56	AP5616*	MAP2006*	MAP2006*	MAP1606*	40
	58	AP5816*	MAP2206*	MAP2006*	MAP1606*	40
	60	AP6016*	MAP2206*	MAP2206*	MAP1606*	40
	20	AP2026*	MAP1006*	MAP1006*	-	60
	22	AP2226*	MAP1206*	MAP1006*	-	50
	36	AP3626*	MAP1206*	MAP1206*	MAP1206*	50
High efficiency	38	AP3826*	MAP1406*	MAP1206*	MAP1206*	50
models	40	AP4026*	MAP1406*	MAP1406*	MAP1206*	50
	42	AP4226*	MAP1406*	MAP1406*	MAP1406*	50
	44	AP4426*	MAP1606*	MAP1406*	MAP1406*	40
	54	AP5426*	MAP2006*	MAP2006*	MAP1406*	40

### (1-2) For HT8P-ME, HT7P-ME model

	Combined	Model	Com	bination of outdoor	units	Maximum external
	horsepower output	MMY-	Unit1	Unit2	Unit3	static pressure (Pa)
	8	MAP0806*	MAP0806*	-	-	60
	10	MAP1006*	MAP1006*	-	-	60
	12	MAP1206*	MAP1206*	-	-	50
	14	MAP1406*	MAP1406*	-	-	50
	16	MAP1606*	MAP1606*	-	-	40
	18	MAP1806*	MAP1806*	-	-	50
	20	MAP2006*	MAP2006*	-	-	40
	22	AP2216*	MAP1206*	MAP1006*	-	50
	24	AP2416*	MAP1206*	MAP1206*	-	50
	26	AP2616*	MAP1406*	MAP1206*	-	50
	28	AP2816*	MAP1406*	MAP1406*	-	50
Standard	30	AP3016*	MAP1606*	MAP1406*	-	40
models	32	AP3216*	MAP1606*	MAP1606*	-	40
models	34	AP3416*	MAP1806*	MAP1606*	-	40
	36	AP3616*	MAP1806*	MAP1806*	-	50
	38	AP3816*	MAP2006*	MAP1806*	-	40
	40	AP4016*	MAP2006*	MAP2006*	-	40
	42	AP4216*	MAP1406*	MAP1406*	MAP1406*	50
	44	AP4416*	MAP1606*	MAP1406*	MAP1406*	40
	46	AP4616*	MAP1606*	MAP1606*	MAP1406*	40
	48	AP4816*	MAP1606*	MAP1606*	MAP1606*	40
	50	AP5016*	MAP1806*	MAP1606*	MAP1606*	40
	52	AP5216*	MAP1806*	MAP1806*	MAP1606*	40
	54	AP5416*	MAP2006*	MAP2006*	MAP1406*	40
	56	AP5616*	MAP2006*	MAP2006*	MAP1606*	40
	10	MAP10A6*	-	-	-	50
	12	MAP12A6*	-	-	-	50
	14	MAP14A6*	-	-	-	50
	16	MAP16A6*	-	-	-	50
	18	AP1826*	MAP10A6*	MAP0806*	-	50
	20	AP2026*	MAP10A6*	MAP10A6*	-	50
	22	AP2226*	MAP12A6*	MAP10A6*	-	50
	24	AP2426*	MAP12A6*	MAP12A6*	-	50
High efficiency	26	AP2626*	MAP14A6*	MAP12A6*	-	50
models	28	AP2826*	MAP14A6*	MAP14A6*	-	50
	30	AP3026*	MAP16A6*	MAP14A6*	-	50
	32	AP3226*	MAP16A6*	MAP16A6*	-	50
	34	AP3426*	MAP12A6*	MAP12A6*	MAP10A6*	50
	36	AP3626*	MAP12A6*	MAP12A6*	MAP12A6*	50
	38	AP3826*	MAP14A6*	MAP12A6*	MAP12A6*	50
	40	AP4026*	MAP14A6*	MAP14A6*	MAP12A6*	50
	42	AP4226*	MAP16A6*	MAP14A6*	MAP12A6*	50
	44	AP4426*	MAP16A6*	MAP16A6*	MAP12A6*	50

### (1-3) For HT8P-A model

	Combined	Model	Com	bination of outdoor	units	Maximum externa
	horsepower output	MMY-	Unit 1	Unit 2	Unit 3	static pressure (Pa)
	8	MAP0806*	MAP0806*	-	-	60
	10	MAP1006*	MAP1006*	-	-	60
	12	MAP1206*	MAP1206*	-	-	50
	14	MAP1406*	MAP1406*	-	-	50
	16	MAP1606*	MAP1606*	-	-	40
	18	MAP1806*	MAP1806*	-	-	50
	20	MAP2006*	MAP2006*	-	-	40
	22	AP2216*	MAP1206*	MAP1006*	-	50
	24	AP2416*	MAP1206*	MAP1206*	-	50
	26	AP2616*	MAP1406*	MAP1206*	-	50
	28	AP2816*	MAP1606*	MAP1206*	-	40
Standard	30	AP3016*	MAP1606*	MAP1406*	-	40
models	32	AP3216*	MAP1606*	MAP1606*	-	40
models	34	AP3416*	MAP1806*	MAP1606*	-	40
	36	AP3616*	MAP2006*	MAP1606*	-	40
	38	AP3816*	MAP2006*	MAP1806*	-	40
	40	AP4016*	MAP2006*	MAP2006*	-	40
	42	AP4216*	MAP1606*	MAP1406*	MAP1206*	40
	44	AP4416*	MAP16Q6*	MAP1606*	MAP1206*	40
	46	AP4616*	MAP1606*	MAP1606*	MAP1406*	40
	48	AP4816*	MAP1606*	MAP1606*	MAP1606*	40
	50	AP5016*	MAP1806*	MAP1606*	MAP1606*	40
	52	AP5216*	MAP2006*	MAP1606*	MAP1606*	40
	54	AP5416*	MAP2006*	MAP2006*	MAP1406*	40
	56	AP5616*	MAP2006*	MAP2006*	MAP1606*	40
	20	AP2026*	MAP1006*	MAP1006*	-	60
High efficiency	36	AP3626*	MAP1206*	MAP1206*	MAP1206*	50
models	38	AP3826*	MAP1406*	MAP1206*	MAP1206*	50
	40	AP4026*	MAP1406*	MAP1406*	MAP1206*	50

	Combined	Model	Com	bination of outdoor	Maximum external	
	horsepower output	MMY-	Unit1	Unit2	Unit3	static pressure (Pa)
	8	MAP0806*	MAP0806*	-	-	60
	10	MAP1006*	MAP1006*	-	-	60
	12	MAP1206*	MAP1206*	-	-	50
	14	MAP14B6*	MAP14B6*	-	-	50
	16	MAP1606*	MAP1606*	-	-	40
	18	MAP18B6*	MAP18B6*	-	-	40
	20	MAP2006*	MAP2006*	-	-	40
	22	MAP2206*	MAP2206*	-	-	40
	24	AP2416*	MAP1206*	MAP1206*	-	50
	26	AP2616*	MAP14B6*	MAP1206*	-	40
	28	AP2816*	MAP14B6*	MAP14B6*	-	40
	30	AP3016*	MAP1606*	MAP14B6*	-	40
Ota a da ad	32	AP3216*	MAP1606*	MAP1606*	-	40
Standard	34	AP3416*	MAP18B6*	MAP1606*	-	40
models	36	AP3616*	MAP18B6*	MAP18B6*	-	40
	38	AP3816*	MAP2206*	MAP1606*	-	40
	40	AP4016*	MAP2206*	MAP18B6*	-	40
	42	AP4216*	MAP2206*	MAP2006*	-	40
	44	AP4416*	MAP2206*	MAP2206*	-	40
	46	AP4616*	MAP1606*	MAP1606*	MAP14B6*	40
	48	AP4816*	MAP1606*	MAP1606*	MAP1606*	40
	50	AP5016*	MAP18B6*	MAP1606*	MAP1606*	40
	52	AP5216*	MAP18B6*	MAP18B6*	MAP1606*	40
	54	AP5416*	MAP18B6*	MAP18B6*	MAP18B6*	40
	56	AP5616*	MAP2006*	MAP18B6*	MAP18B6*	40
	58	AP5816*	MAP2206*	MAP18B6*	MAP18B6*	40
	60	AP6016*	MAP2206*	MAP2206*	MAP1606*	40
	14	MAP1406*	MAP1406*	-	-	50
	18	MAP1806*	MAP1806*	-	-	50
	20	MAP2006*	MAP1006*	MAP1006*	-	60
	22	MAP2206*	MAP1206*	MAP1006*	-	50
	26	AP2616*	MAP1406*	MAP1206*	-	50
	28	AP2816*	MAP1406*	MAP1406*	-	50
	30	AP3016*	MAP1606*	MAP1406*	-	40
	34	AP3416*	MAP1806*	MAP1606*	-	40
	36	AP3616*	MAP1206*	MAP1206*	MAP1206*	50
High efficiency	38	AP3816*	MAP1406*	MAP1206*	MAP1206*	50
models	40	AP4016*	MAP1406*	MAP1406*	MAP1206*	50
	42	AP4216*	MAP1406*	MAP1406*	MAP1406*	50
	44	AP4416*	MAP1606*	MAP1406*	MAP1406*	40
	44 46	AP4616*	MAP1606*	MAP1400 MAP1606*	MAP1406*	40
	50	AP5016*	MAP1806*	MAP1606*	MAP1400 MAP1606*	40
	52	AP5216*	MAP2006*	MAP1606*	MAP1606*	40
	54	AP5416*	MAP2006*	MAP 1000 MAP2006*	MAP1606*	40
	56	AP5616*	MAP2006*	MAP2006*	MAP1406 MAP1606*	
	58	AP5816*	MAP2006*	MAP2006*	MAP1606*	40 40

### (1-4) For T8P, T7P, T8P-SG, T8P-ID, T8P-T model

### (1-5) For HT8P-C model

	Combined horsepower output	Model MMY-	combin	ation of outdo	or units	Maximum external static pressure
	noisepower output		Unit1	Unit2	Unit3	(Pa)
	16	MAP1606*	MAP1606*	-	-	40
	18	MAP1806*	MAP1806*	-	-	50
	20	MAP2006*	MAP2006*	-	-	40
	22	MAP2206*	MAP2206*	-	-	40
	34	AP3416*	MAP1806*	MAP1606*	-	40
	36	AP3616*	MAP2006*	MAP1606*	-	40
	38	AP3816*	MAP2206*	MAP1606*	-	40
Standard	40	AP4016*	MAP2006*	MAP2006*	-	40
models	42	AP4216*	MAP2206*	MAP2006*	-	40
models	44	AP4416*	MAP2206*	MAP2206*	-	40
	48	AP4816*	MAP1606*	MAP1606*	MAP1606*	40
	50	AP5016*	MAP1806*	MAP1606*	MAP1606*	40
	52	AP5216*	MAP2006*	MAP1606*	MAP1606*	40
	54	AP5416*	MAP2206*	MAP1606*	MAP1606*	40
	56	AP5616*	MAP2006*	MAP2006*	MAP1606*	40
	58	AP5816*	MAP2206*	MAP2006*	MAP1606*	40
	60	AP6016*	MAP2206*	MAP2206*	MAP1606*	40

### 6-2-2. Priority Operation Mode Setting

### **Purpose/characteristics**

This function allows switching between priority cooling and priority heating.

Four patterns of priority operation mode setting are available as shown in the table below. Select a suitable priority mode according to the needs of the customer.

### Setup

### 

In the case of the priority indoor unit mode, it is necessary to set up the specific indoor unit chosen for priority operation (a single unit only).

SW	V11	Operation
Bit 1	Bit 2	Operation
OFF	OFF	Priority heating (factory default)
ON	OFF	Priority cooling
OFF	ON	Priority operation based on No. of units in operation (priority given to the operation mode with the largest share of units in operation)
ON	ON	Priority indoor unit (priority given to the operation mode of the specific indoor unit set up for priority operation)

### (1) Outdoor unit setup method (header unit)

(2) Indoor unit setup method for priority indoor unit mode

The setting can be changed only when the system is at rest. (Be sure to turn off the system prior to this operation.)

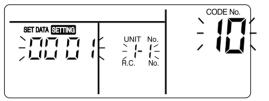
1 Push the <sup>™</sup> + <sup>™</sup> + <sup>™</sup> buttons simultaneously and hold for at least 4 seconds. The display window will start flashing in a little while.

Verify that the displayed CODE No. is 10.

¶ If the displayed CODE No. is not 10, press the 🖉 button to erase the display and repeat the procedure from the beginning.

(Note that the system does not respond to remote controller operation for about 1 minute after the  $\stackrel{\text{TEST}}{\Longrightarrow}$  button is pushed.)

(In the case of group control, the indoor unit No. displayed first indicates the header unit.)



2 Each time the button is pushed, one of the indoor unit Nos. under group control is displayed in turn. Select the indoor unit whose setting is to be changed. The fan and flap of the selected indoor unit then come on, so

that the position of this unit can be confirmed.

- **3** Use the  $rac{\text{HEMP}}{\text{(T)}}$  button to select the CODE No. 04.
- **4** Use the **→ button to select the SET DATA 0001.** Priority set 0001 No priority set 0000
- **5** Push the  $\stackrel{\text{\tiny SET}}{\bigcirc}$  button.

The setup is finished when the display changes from flashing to steady.

6 Upon finishing the setup, push the <sup>™</sup> button. (This finalizes the setting.)

When the  $\overset{\text{\tiny TEST}}{\textcircled{O}}$  button is pushed, the display goes blank, and the system returns to normal off state.

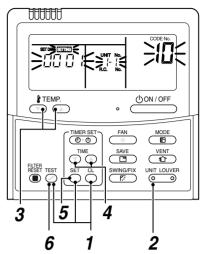
(Note that the system does not respond to remote controller operation for about 1 minute after the  $\frac{1}{2}$  button is pushed.)

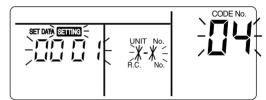


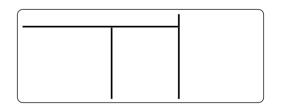
Priority can be given to only one indoor unit. If more than one indoor unit is accidentally set to priority, an check code (L5 or L6: Duplicated indoor unit priority setting) will be displayed.

All units displaying L5 have been set to 0001 (priority). Keep the unit to which priority should be given as it is, and change the value back to 0000 (no priority) for all the rest.

Check code	Description
15	Duplicated indoor unit priority setting (The unit is set to 0001.)
16	Duplicated indoor unit priority setting (The unit is set to 0000.)







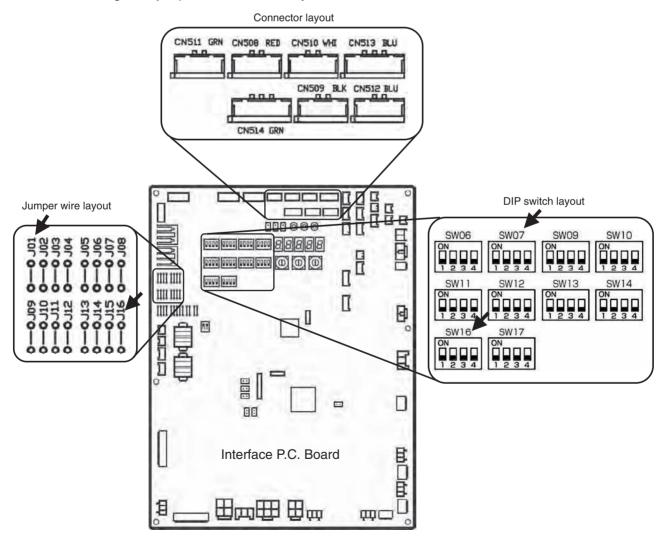
## 6-2-3. Applied Control of Outdoor Unit

		Outdoor unit	Control F	P.C. board to	be used	Outdoor	r unit interface P.0	C. board sett	ing*
No.	Function	for control P.C. board connection	PCDM4E	PCMO4E	PCIN4E	Connector No.	DIP SW No.	Bit	Jumper to be removed
	Power peak-cut Control (Standard)	Header unit	1	-	-	CN513(blue)	SW07	1	-
1	Power peak-cut Control (For one input function)	Header unit	1	-	-	CN513(blue)	SW07	   1 	J16
2	Power peak-cut Control (Enhanced Functions)	Header unit	1	-	-	CN513(blue)	SW07	1.2	-
3	Snowfall Fan Control	Header unit	-	1	-	CN509(black)	-	-	-
4	External master ON/OFF Control	Header unit	-	1	-	CN512(blue)	-	-	-
5	Night operation (sound reduction) Control	Header unit	-	1	-	CN508(red)	-	-	-
	Operation Mode Selection Control	Header unit	-	1	-	CN510(white)	-	-	-
6	Operation Mode Selection Control (forced choice)	Header unit	-	1	-	CN510(white)	-	-   -	J01
7	Error/Operation output	Header unit	-	-	1	CN511(green)	-	_	-
8	Compressor Operation Output	Individual outdoor unit	-	-	1	CN514(green)	-	_	-
9	Operating Rate Output	Header unit	-	-	1	CN514(green)	SW16	1	-

Optional control P.C. boards provide access to a range of functions as listed below.

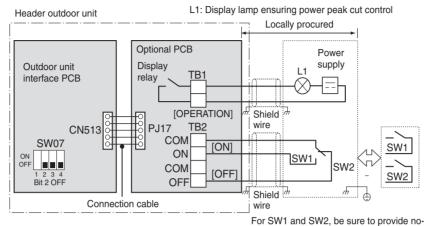
### Layout of Outdoor Unit Interface P.C. Board

\* DIP switch settings and jumper wire statuses vary from function to function.



### 6-2-4. Power peak-cut Control (Standard)

### (1) Four-core cable support



For SW1 and SW2, be sure to provide novoltage contacts for each terminal. The input signals of SW1 and SW2 may be pulse input (100 msec or more) or continuous make.

### Operation

An external power peak-cut control signal limits the peak capacity of the outdoor unit.

L1: Power peak-cut control indication lamp

SW1: Power peak-cut control ON switch (ON as long as target power peak-cut control has been reached or exceeded, normally OFF)\*1

SW2: Power peak-cut control OFF switch (OFF as long as target power peak-cut control has not been reached or exceeded, normally ON)\*1

\*1 The inputs of SW1 and SW2 can be either pulse (100 msec or longer) or step signals.

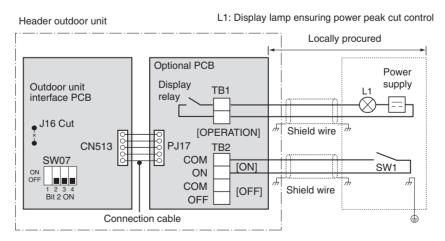
Do not turn on SW1 and SW2 simultaneously. Be sure to provide a contact for each terminal.

### Power peak-cut control settings

· · ·						
Power peak-cut control P.C.	wer peak-cut control P.C. SW1 SW2		L1	Interface P.C. board of header outdoor unit		
board	3001	3002	LI	SW07 Bit 1 OFF	SW07 Bit 1 ON	
Power peak-cut control ON signal received	ON	OFF	ON	0% (forced stop)	60% capacity (upper limit regulated)	
Power peak-cut control OFF signal received	OFF	ON	OFF	100% (normal operation)	100% (normal operation)	

### (2) Two-core cable support

SMMS-e models allows ON/OFF power peak-cut control to be implemented using a power peak-cut control ON input (SW1) alone, provided that the J16 jumper wire on the interface P.C. board of the header outdoor unit has been removed.



### <SW07 Bit 2 OFF (two-step control)>

Power peak-cut control is enabled as long as SW1, as shown on the wiring diagram, is ON (continuously).

Jumper wire	Input	SW0	Indicator relay	
J16	SW1	Bit 1 OFF	Bit 1 ON	(L1)
Cut	OFF	100% (normal operation)	100% (normal operation)	OFF
Out	ON	0% (forced stop)	Approx. 60% (upper limit regulated)	ON

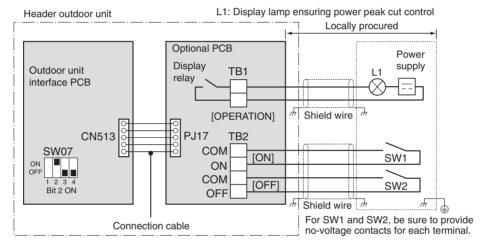
Note 1: Specifications of display relay contact

• The terminal for display output ([Operation] terminal) must satisfy the following electrical rating.

<electrical rating=""></electrical>	
220 to 240 VAC, 10 mA or more, 1 A or less	
24 VAC, 10 mA or more, 1 A or less (non-conductive load)	

When connecting a conductive load (e.g. relay coil) to the display relay load, insert a surge killer CR (for an AC power supply) or a diode for preventing back electromotive force (for a DC power supply) on the bypass circuit. The optional P.C. board should be connected to the header outdoor unit (U1).

### 6-2-5. Power peak-cut Control (Extended)



#### Operation

An external power peak-cut control signal limits the peak capacity of the outdoor unit.

L1: Power peak-cut control indication lamp

SW1: Power peak-cut control ON switch\*1

SW2: Power peak-cut control OFF switch\*1

\*1 The inputs of SW1 and SW2 can be either pulse (100 msec or longer) or step signals.

\* Be sure to provide a contact for each terminal.

#### Extended power peak-cut control settings

Specifications of display relay contact

Indication lamp	External power	peak-cut control	Peak c	apacity		
mulcation lamp	signals		I/F SW07 Bit 1			
L1	SW1 SW2		OFF	ON		
OFF	OFF OFF		100% (normal operation)	100% (normal operation)		
ON	ON OFF		80% (upper limit regulated)	85% (upper limit regulated)		
ON	OFF	ON	60% (upper limit regulated)	75% (upper limit regulated)		
ON	ON ON		0% (forced stop)	60% (upper limit regulated)		

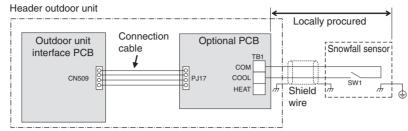
Note 1: Specifications of display relay contact

• The terminal for display output ([Operation] terminal) must satisfy the following electrical rating.

<electrical rating=""></electrical>
220 to 240 VAC, 10 mA or more, 1 A or less
24 VAC, 10 mA or more, 1 A or less (non-conductive load)

When connecting a conductive load (e.g. relay coil) to the display relay load, insert a surge killer CR (for an AC power supply) or a diode for preventing back electromotive force (for a DC power supply) on the bypass circuit. The optional P.C. board should be connected to the header outdoor unit (U1).

## 6-2-6. Snowfall Fan Control



SW1: Snowfall detection switch (snowfall sensor)

### Operation

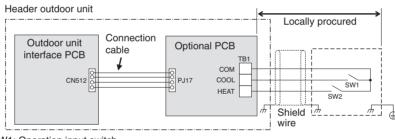
An external snowfall signal turns on the outdoor unit fan.

Terminal	Input signal	Operation
COOL (SW1)	ON OFF	All indoor units operate together
	ON OFF	All indoor units operate together

The input signal is recognized during its rising/falling phase.

(After reaching the top/bottom of the rising/falling edge, the signal must remain there for at least 100 ms.) The optional P.C. board should be connected to the header outdoor unit (U1).

### 6-2-7. External master ON/OFF Control



SW1: Operation input switch SW2: Stop input switch

### Operation

The system is started/stopped from the outdoor unit.

Terminal	Input signal	Operation
COOL (SW1)		Turns on all indoor units
HEAT (SW2)		Turns off all indoor units

The input signal is recognized during its falling phase. (After reaching the bottom of the falling edge, the signal must remain there for at least 100 ms.)

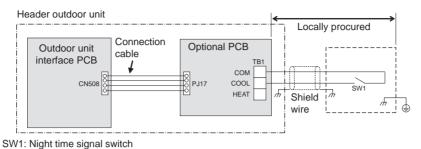
# 

(1) Do not turn on the COOL (SW1) and HEAT (SW2) terminals simultaneously.

- (2) Be sure to provide a contact for each terminal.
- External signal: No-voltage pulse contact

The optional P.C. board should be connected to the header outdoor unit (U1).

### 6-2-8. Night operation (sound reduction) Control



#### Operation

This function decreases noise at night or other times as necessary.

Terminal	Input signal	Operation
	ON	Night time control
COOL	OFF _	
(SW1)	ON	Normal operation
	OFF	

The input signal is recognized during its rising/falling phase.

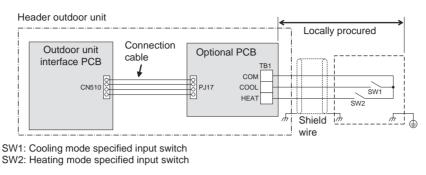
(After reaching the top/bottom of the rising/falling edge, the signal must remain there for at least 100 ms.) The optional P.C. board should be connected to the header outdoor unit (U1).

The system's capacity is reduced during low-noise operation. The table below provides a rough guide to this capacity reduction.

Model	During low-noise mode*	Сар	acity
MMY-	dB(A)	Cooling	Heating
MAP0806*	50	approx. 85%	approx. 80%
MAP1006*	50	approx. 70%	approx. 65%
MAP1206*	50	approx. 60%	approx. 55%
MAP14B6*	50	approx. 50%	-
MAP10A6*	53	approx. 90%	approx. 90%
MAP12A6*	53	approx. 85%	approx. 85%
MAP1406*	53	approx. 80%	approx. 80%
MAP1606*	53	approx. 70%	approx. 70%
MAP18B6*	53	approx. 60%	-
MAP14A6*	54	approx. 75%	approx. 75%
MAP16A6*	54	approx. 70%	approx. 70%
MAP1806*	54	approx. 65%	approx. 65%
MAP2006*	54	approx. 60%	approx. 60%
MAP2206*	54	approx. 55%	approx. 55%

\* Position of noise measuring device: 1 m from the front face of the set and 1.5 m above ground (anechoic sound)

### 6-2-9. Operation Mode Selection Control



#### NOTE

SW1: COOL mode selection switch SW2: HEAT mode selection switch

Input	signal	Operation	Remarks
COOL (SW1)	HEAT (SW2)	Operation	Remarks
ON	OFF	Only cooling operation allowed	*
OFF	ON	Only heating operation allowed	*
OFF	OFF	Normal operation	

\* The display " 🗗 (Operation mode selection control in progress)" appears on the remote controller

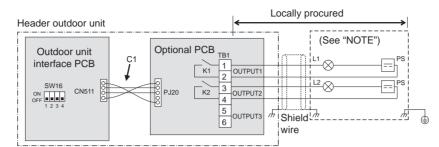
### Indoor unit operation intervention function

The statuses of indoor units operating in a mode different from the selected operation mode can be changed by changing the status of a jumper wire (J01) provided on the interface P.C. board of the header outdoor unit.

Jumper lead	Details of Processing			
	Unallowed indoor units in a mode other than the selected operation mode are not treated as priority (thermostat OFF state). (Unallowed indoor units)			
J01 connected (factory default)	Operation Mode	Operation State	Remote control	
	Cooling	Air blow operation at fan speed set on remote control		
	Heating	Air blow operation at ultra-low fan speed	Ü, ∰ indicator is displayed.	
	Fan	Regular air blow operation at fan speed set on remote control		
	Indoor units in a mode other than the selected operation mode are forcibly switched to the selected operation mode.			
J01 cut	PC board selection mode	Remote control operation/display		
	Normal	lpha, $(here)$ , $lpha$ , or $lpha$ can be selected	When using the remote	
	Cool	Only ≱, ⊘, or St can be selected	control, 📄 (mode select control)	
	Heat	Only   or 🛠 can be selected	indicator is displayed.	

The optional P.C. board should be connected to the header outdoor unit (U1).

### 6-2-10. Error/Operation Output



### Operation

In-operation output: An in-operation indication signal is output as long as at least one indoor unit is in operation in the line.

Error output: An error indication signal is output if an error occurs in at least one indoor/outdoor unit in the line.

Note 1: Output Relay (K1, K2) Contact Specifications

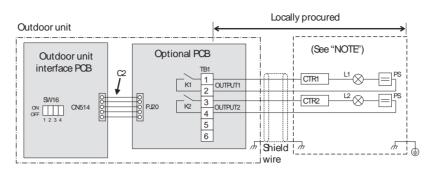
- Output terminals (OUTPUT1, 2) must satisfy the following electrical rating.
- When connecting a conductive load (e.g. relay coil) to loads K1 and K2, insert a surge killer CR (for an AC power supply) or a diode for preventing back electromotive force (for a DC power supply) on the bypass circuit.

<Electrical Rating> 220-240 VAC, 10 mA or more, 1A or less 24 VAC, 10 mA or more, 1 A or less (non-conductive load)

C1	Attached connection cable 1 (4wires)
CN511	Connector on interface side (green)
К1, К2	Relays
L1	Error indication Lamp
L2	Operation indication Lamp
OUTPUT1	Error output
OUTPUT2	Operation output
PJ20	Connector on optional PCB side
PS	Power supply unit
TB1	Terminal block

The optional P.C. board should be connected to the header outdoor unit (U1).

### 6-2-11. Compressor Operation Output



### Operation

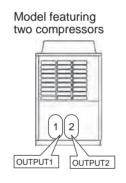
When a compressor is in operation, a relay connected to the output terminal assigned to it is turned on (closed). When it is at rest, the relay is turned off (open).

The output terminals are named OUTPUT1 and OUTPUT2 from left to right when facing the front of the outdoor unit, as shown in the diagram.

Note 1: Output Relay (K1, K2) Contact Specifications

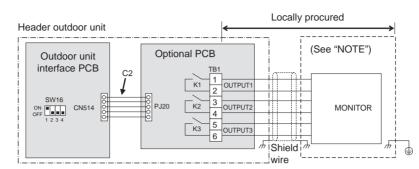
- Output terminals (OUTPUT1, 2) must satisfy the following electrical rating.
- When connecting a conductive load (e.g. relay coil) to loads K1and K2 insert a surge killer CR (for an AC power supply) or a diode for preventing back electromotive force (for a DC power supply) on the bypass circuit.

<Electrical Rating> 220-240 VAC, 10 mA or more, 1A or less 24 VAC, 10 mA or more, 1 A or less (non-conductive load)



C2	Connector cable 2 (2)
CN514	Connector on interface side (green)
CTR1	Elapsed operation counter 1
CTR2	Elapsed operation counter 2
K1, K2	Relays
L1, L2	Operation indication LEDs
OUTPUT1	Compressor 1 operation output terminal
OUTPUT2	Compressor 2 operation output terminal
PJ20	Connector on optional PCB side
PS	Power supply unit
TB1	Terminal block

### 6-2-12. Operating Rate Output



### Operation

At the output terminals, a signal is present (relay closed) or absent (relay open) in various combinations according to the system operation factor, as shown in the diagram.

The operation rate (FA) is the percentage ratio of the current output of the system to the maximum output (100%).

Function	SW16	OUTPUT1	OUTPUT2	OUTPUT3	Operation factor (FA)
System operation	Bit 1: ON	off	off	off	FA=0%
rate output		on	off	off	0% <fa<20%< td=""></fa<20%<>
		off	on	off	20%≦FA<35%
	Dit 2. 011	on	on	off	35%≦FA<50%
	-	off	off	on	50%≦FA<65%
		on	off	on	65%≦FA<80%
		off	on	on	80%≦FA<95%
		on	on	on	95%≦FA

off = Relay open

on	=	Re	lay	clos	ed

C2	Connector cable 2 (2)
CN514	Connector on interface side (green)
K1, K2, K3	Relays
MONITOR	Monitoring device
OUTPUT1	Output terminal for each function
OUTPUT2	Output terminal for each function
OUTPUT3	Output terminal for each function
PJ20	Connector on optional PCB side
TB1	Terminal block

\*Connect the optional P.C. board to the header outdoor unit.

Note 1: Output Relay (K1, K2, K3) Contact Specifications

- Output terminals (OUTPUT1, 2, 3) must satisfy the following electrical rating.
- When connecting a conductive load (e.g. relay coil) to loads K1, K2 and K3, insert a surge killer CR (for an AC power supply) or a diode for preventing back electromotive force (for a DC power supply) on the bypass circuit.

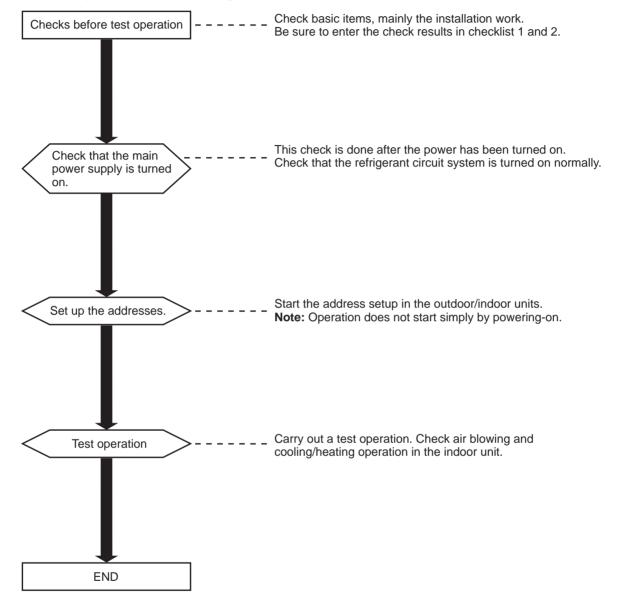
<Electrical Rating> 220-240 VAC, 10 mA or more, 1A or less

24 VAC, 10 mA or more, 1 A or less (non-conductive load)

# **7** TEST OPERATION

# 7-1. Procedure and Summary of Test Operation

A test operation is executed with the following procedure. When problems or an error occurs at any step, remove the causes of the problem or error referring to "8 TROUBLESHOOTING."



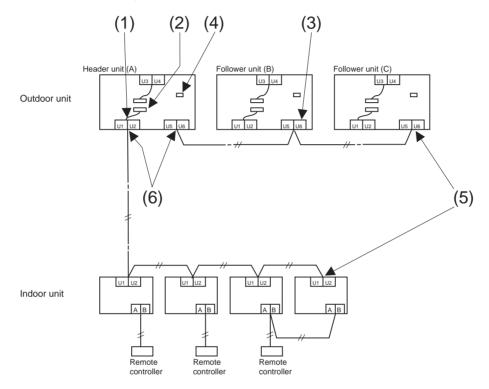
# 7-2. Check Items before Test Operation (before powering-on)

Prior to the test operation, check the following items to verify there are no problems with the installation work.

#### Main check items for electric wiring

The communication system differs from that of R22 or R407 refrigerant "Modular Multi System" air conditioners. Check wiring points again carefully.

(1) In the case that a central control system is not connected:

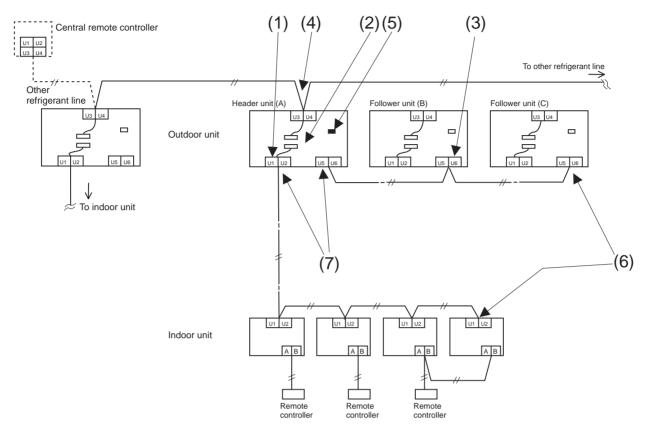


Main check items	Check
(1) Are the indoor and outdoor communication lines of the header unit connected to the U1/U2 terminals?	
(2)Is the relay connector between the U1/U2 terminal and the U3/U4 terminal disconnect? (Set up at shipment from the factory)	
(3) Is the communication line between outdoor units connected to the U5/U6 terminal?	
(4)Is the terminator resistor (SW30-bit 2) on the interface PC board of the header unit turned on? (Set up at shipment from the factory)	
(5) Is the end terminal of the shield wire open?	
(6) Is the end terminal of the shield wire earthed at the header unit side?	

### NOTE

The figure above does not show all the electric wires.

For details, refer to the installation manuals for the outdoor unit, indoor unit, remote controller, or optional devices.



#### (2) In the case that a central control system is connected (before address setup)

Main check items	Check
(1) Are the indoor and outdoor communication lines of the header unit connected to the U1/U2 terminals?	
(2)Is the relay connector between the U1/U2 terminal and the U3/U4 terminal disconnect? (Set up at shipment from the factory)	
(Keep the relay connector disconnected before address setup.)	
(3) Is the communication line between outdoor units connected to the U5/U6 terminal?	
(4) Is the communication line of the central control system connected to the header unit U3/U4 terminals of each refrigerant line?	
(The communication line of the central control system may be connected to the communication lines of the indoor/outdoor communication lines.)	
<ul> <li>(5) Is the terminator resistor (SW30-bit 2) on the interface PC board of the header unit turned on? (Set up at shipment from the factory)</li> <li>* After address setup and test operation check, turn on the SW30-bit 2 of the header unit for the smallest line address, and turn off SW30-bit 2 of the header unit for other refrigerant lines. (See "7-4-3. Address Setup Procedure")</li> </ul>	
(6) Is the end terminal of the shield wire open?	
(7) Is the end terminal of the shield wire earthed at the header unit side?	
(8) When the refrigerant line and the central control system of the DI-SDI series are connected:	
→ Are Network adapter (TCB-PCNT30TLE2) correctly connected?	
→ When the DI-SDI series operates with group, twin, or triple operation, are the adapters connected to the header unit of the indoor unit?	

#### NOTE

The figure above does not show all the electric wires.

For details, refer to the installation manuals for the outdoor unit, indoor unit, remote controller, or optional devices.

### Checklist 1

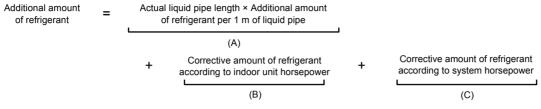
• Using Checklist 1, check that there are no problems with the installation work.

Is the capacity of the circuit breaker (Earth leakage breaker) appropriate?	Outdoor total capacity       A       Header unit (A)       A       Indoor unit       A         Follower unit (B)       A       A       Follower unit (C)       A	
Is the gauge of the	Header unit (A) mm <sup>2</sup> Indoor unit mn	n <sup>2</sup>
power cable correct?	Follower unit (B) mm <sup>2</sup>	
	Follower unit (C) mm <sup>2</sup>	
Is the control	Indoor-outdoor connection terminals (U1, U2)	
communication line correct?	Outdoor-outdoor connection terminals (U5, U6)	
conect?	Central control system connection terminals (U3, U4)	
Is the power of indoor	units supplied collectively?	
Is it grounded to earth	?	
Is the resistance suffic	cient? (10 MΩ or higher) MΩ or higher	
Is the main power volt	tage sufficient? (within 380-415 V ±10%)	
Is the diameter of con	necting pipe correct?	
Is the branch kit correct	ct?	
Is the water drain of th	ne indoor unit arranged so that it flows without accumulation?	
Is the heat insulation of	of pipes sufficient? (connecting pipes, branch kit)	
Is there no short circuit	it of discharge air in the indoor/outdoor units?	
After an airtightness te	est of the pipes, are vacuuming and adding of refrigerant executed?	
Are the valves of all th	ne outdoor units fully opened?	
	Gas side Liquid side Balance sid	le
	Header unit (A)	
	Follower unit (B)	
	Follower unit (C)	

• Check the additional amount of refrigerant.

#### **Checklist 2**

Calculate the additional amount of refrigerant from the additional amount of refrigerant (A) by the pipe diameter on the liquid side, the pipe length to be connected, and the corrective amount of refrigerant (B) according to Indoor unit horsepower, and the corrective amount of refrigerant (C) according to system horsepower.



First, enter the total length for each liquid pipe diameter in the following table, and then calculate the additional amount of refrigerant by pipe length.

#### <Additional amount of refrigerant by pipe length>

Pipe diameter on the liquid	Standard amount of	Total pipe length on each liquid side	Additional amount of refrigerant pipe diameter on
side	refrigerant		each liquid side
		m	kg
φ6.4	0.025 × 1.2 ×	=	kg
	0.055 × 1.2 ×	=	kg
φ12.7	0.105 × 1.2 ×	=	kg
φ15.9	0.160 × 1.2 ×	=	kg
φ19.0	0.250 × 1.2 ×	=	kg
φ22.2	0.350 × 1.2 ×	=	kg

Next, refer to the following table for the corrective amount of refrigerant (B) according to indoor unit horsepower.

according to indoor unit horsepower>					
Additional refrigerant charge amount Indoor unit		Standard Indoor	Fresh Air intake	Air to Air Heat Exchanger	
		unit	Indoor unit	with DX-coil	
Additional refrigerant charge amount	kg/HP	0.4	0.2	0.2	
Capacity of Indoor unit	HP	HP	HP	HP	
Corrective amount of refrigerant	kg	kg	kg	kg	

#### Next, refer to the Table 1-1~1-5 on P. 20 "Adding refrigerant" for the corrective amount of refrigerant (C) according to system horsepower.

Lastly, add the additional amount of refrigerant by pipe length (A) and the corrective amount of refrigerant by indoor unit horsepower (B) to the corrective amount of refrigerant by combined horsepower (C). This is the final additional amount of refrigerant. If a minus sign is indicated as the result, do not reduce or add the refrigerant (= 0 kg).

#### <Additional amount of refrigerant>

, and the second s	
Additional amount of refrigerant by pipe length (A) kg	kg
Corrective amount of refrigerant according to indoor unit horsepower (B) kg	kg
Corrective amount of refrigerant according to combined horsepower (C) kg	kg
Additional amount of refrigerant kg	kg

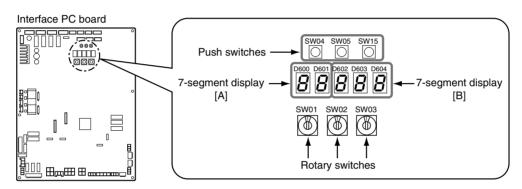
# 7-3. Check at Main Power-on

After turning on the main power of the indoor units and outdoor unit in the refrigerant line to conduct a test operation, check the following items in each outdoor and indoor unit. (After turning on the main power, be sure to check in order: indoor unit  $\rightarrow$  outdoor unit.)

#### <Check on the outdoor unit>

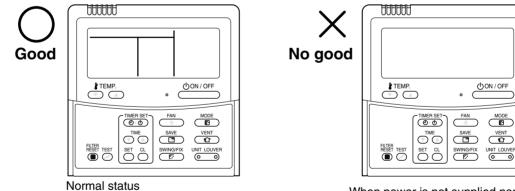
- (1) Check that all the rotary switches, SW01, SW02, and SW03, on the interface PC board of the header unit are set to "1."
- (2) If another check code is displayed on the 7-segment display [B], remove the cause of the problem referring to Section, "8 TROUBLESHOOTING".
- (3) Check that "L08" is displayed on the 7-segment display [B] on the interface PC board of the header unit. (L08: Indoor address not set up)

(If the address setup operation has already been completed during servicing, etc., the above check code is not displayed, and only "U1" is displayed on the 7-segment display [A].)

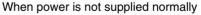


#### <Check on the indoor unit>

- (1) Display check on the remote controller (in the case of a wired remote controller)
- Check that a frame, as shown in the following figure at left, is displayed on the LC display section of the remote controller.



(power supplied and operation stopped)



If no frame is displayed, as shown in the above figure at right, the remote controller does not have a normal supply of power; check the following items.

- Check the power supply of the indoor unit.
- · Check the cabling between the indoor unit and the remote controller.
- Check whether there is a cutoff of wire around the indoor control PC board or not, and check for connection failures of the connectors.
- · Check for failure of the transformer for the indoor electrical control box.
- · Check for failure of the indoor control PC board.

# 7-4. Address Setup

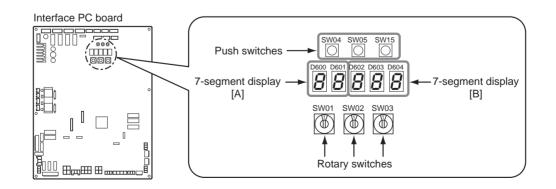
This product requires address setup before operation. Follow this procedure for address setup.

### 7-4-1. Precautions

- (1) Address setup is not performed simply by turning on the power supply.
- (2) For indoor units, address setup can be done either by manual address setup or by automatic address setup: Automatic address setup: Setup from SW15 on the interface PC board of the header unit Manual address setup: Setup from the wired remote controller. (For details, refer to "7-4-3. Address Setup Procedure.")
- (3) Automatic setup usually takes about 5 minutes per line. In some cases, however, it may take up to 10 minutes.
- (4) It is unnecessary to operate the air conditioner to achieve address setup.

### 7-4-2. Address Setup and Check Procedure

Procedure	ltem	Operation and check contents						
1	Indoor unit power-on	Turn on the power of the inc	Turn on the power of the indoor unit for the refrigerant line for which the address is to be set up					
2	Outdoor unit power-on	Turn on the power of all the outdoor units for the refrigerant line for which the address is to be set up.						
3	7-segment display check	Check that "L08" is displayed on the 7-segment display [B] on the interface PC board of the header unit in the system where the address is to be set up.						
4	Address setup start	Confirm the items in "7-4-3. to the operation procedure (Be careful to note that the systems.) Note: The address cannot be	setup op	eration	may dif	fer in group control		
5	Display check after setup	<ul> <li>After address setup, "U1'</li> <li>For follower outdoor units</li> <li>If a check code is display referring to "8 TROUBLE</li> </ul>	s, "U2" to ed on the	"U3" ar 7-segm	e displa	yed on the 7-segm		oblem
	System information check after setup	Using the 7-segment display function, check the system information of the scheduled system (This check is executed on the interface PC board of the header unit.)						
			Rotar	y switch	setup	7-segment	display	
			SW01	SW02	SW03	[A]	[B]	
6		System capacity	1	2	3	[Number of horsepower]	[H P]	
		Number of connected outdoor units	1	3	3	[Number of units]	[ P]	
		Number of connected indoor units	1	4	3	[Number of connected units]		
		After the above checks, ret	urn rotar	y switch	es SW0	1, SW02, and SW0	03 to 1/1/1.	

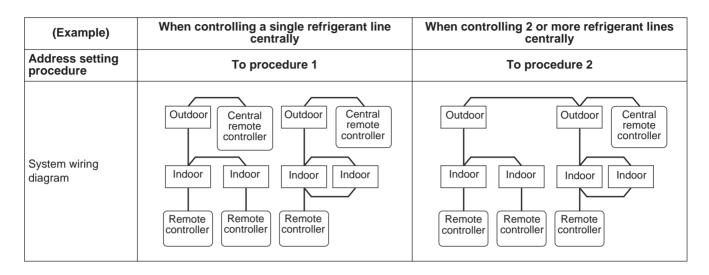


### 7-4-3. Address Setup Procedure

No central control:

Central control of 2 or more refrigerant lines:

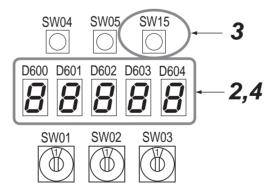
go to Address setting procedure 1 go to Address setting procedure 2



### Address setting procedure 1

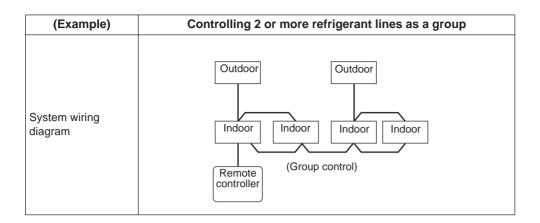
- **1** Turn on indoor units first, and then turn on outdoor units.
- 2 About one minute after turning the power on, confirm that the 7-segment display on the interface P.C. board of the header outdoor unit indicates U. 1. L08 (U. 1. flash).
- **3** Press SW 15 to start the automatic address setting. (It may take up to 10 minutes (normally about 5 minutes) to complete one line's setting.)
- 4 The 7-segment display indicates Auto 1 → Auto 2 → Auto 3. After the indication, U. 1. - - (U. 1. flash) starts flashing on the display. When the flashing stops and U. 1. - - (U. 1. light) remain lit on the display, the setting is complete.

Interface P.C. board on the header outdoor unit



#### REQUIREMENT

- When 2 or more refrigerant lines are controlled as a group, be sure to turn on all the indoor units in the group before setting addresses.
- If you set the unit addresses of each line separately, each line's header indoor unit is set separately. In that case, the CODE No. "L03" (Indoor header unit overlap) is indicated as running starts. Change the group address to make one unit the header unit using wired remote controller.



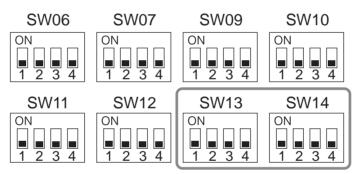
### ♦ Address setting procedure 2

 Set a system address for each system using SW 13 and 14 on the interface P.C. board on the header outdoor unit of each system. (Factory default: Address 1)

#### NOTE

Be sure to set a unique address on each system. Do not use a same address as another system (refrigerant line) or a "Digital Inverter" side.

#### Interface P.C. board on the header outdoor unit



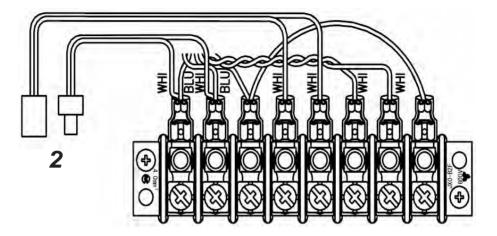
Line address switches on the outdoor interface PC board (O: switch on, X: switch off)

Line	SW13				SW14			
address	1	2	3	4	1	2	3	4
1				×	×	×	×	×
2				×	0	×	×	×
3				Х	×	0	×	×
4				Х	0	0	×	×
5				Х	×	×	0	×
6				Х	0	×	0	×
7				Х	×	0	0	×
8				Х	0	0	0	×
9				×	×	×	×	0
10				Х	0	×	×	0
11				Х	×	0	×	0
12				Х	0	0	×	0
13				Х	×	×	0	0
14				Х	0	×	0	0

Line		SW	/13		SW14			
address	1	2	3	4	1	2	3	4
15				×	×	0	0	0
16				×	0	0	0	0
17				0	×	×	×	×
18				0	0	×	×	×
19				0	×	0	×	×
20				0	0	0	×	×
21				0	×	×	0	×
22				0	0	×	0	×
23				0	×	0	0	×
24				0	0	0	0	×
25				0	×	Х	×	0
26				0	0	Х	×	0
27				0	×	0	×	0
28				0	0	0	×	0

Not used for setup of line address (do not change setup.)

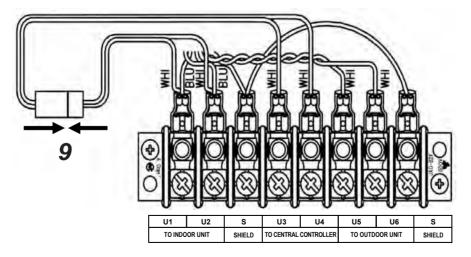
**2** Be sure to disconnect the relay connectors between the [U1U2] and [U3U4] terminals on all the header outdoor units that will be connected to the central control. (Factory default: disconnected)



- **3** Turn on indoor units first, and then turn on outdoor units.
- 4 About 1 minute after turning the power on, confirm that the 7-segment display on the interface P.C. board of the header outdoor unit indicates U. 1. L08 (U. 1. flash).
- **5** Press SW 15 to start the automatic address setting. (It may take up to 10 minutes (normally about 5 minutes) to complete one line's setting.)
- 6 The 7-segment display indicates Auto 1 → Auto 2 → Auto 3.
   After the indication, U. 1. --- (U. 1. flash) starts flashing on the display.
   When the flashing stops and U. 1. --- (U. 1. light), remains lit on the display, the setting is complete.
- 7 Repeat steps 4 to 6 for other refrigerant lines.
- 8 After completing address setting of all systems, 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 smallest address.

(For unifying the termination of the wiring for the central control of indoor and outdoor units)

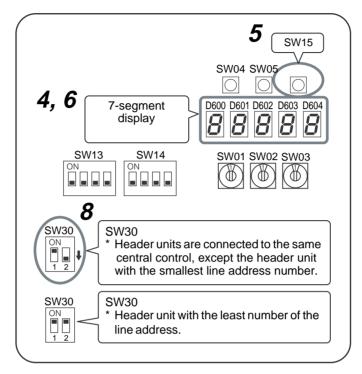
**9** Connect the relay connectors between the [U1, U2] and [U3, U4] terminals of the header outdoor unit of each refrigerant line.



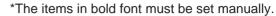
#### 10 Set the central control address.

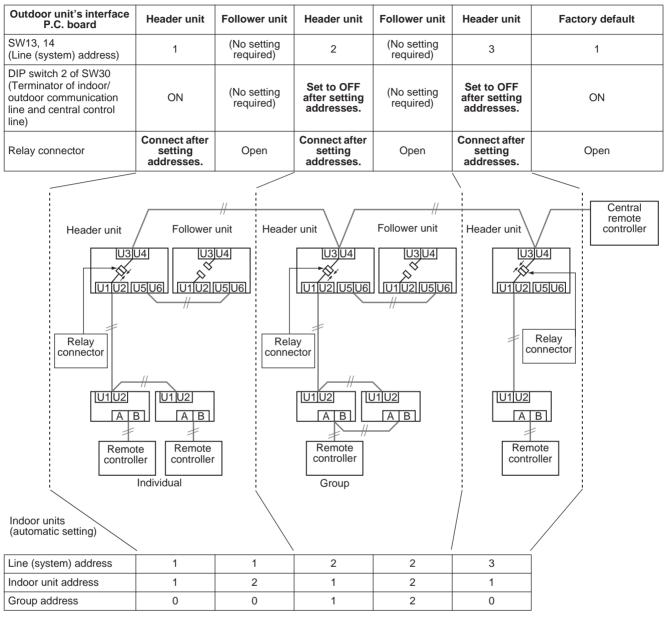
(For the setting of the central control address, refer to the installation manuals of the central control devices.)

Header unit interface P.C. board



#### Switch setting (setting example when controlling 2 or more refrigerant lines centrally) Outdoor units (setting manually)





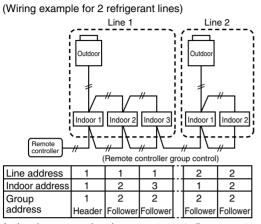
### 

#### **Relay connector connection**

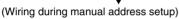
Never connect relay connectors between the [U1, U2] and [U3, U4] terminals before completing address setting of all the refrigerant lines. Otherwise, the addresses cannot be set correctly.

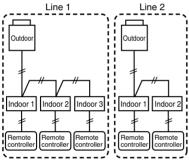
#### Manual address setup from the remote controller

With indoor wiring work completed and outdoor wiring work not done—in cases where indoor unit addresses are decided in advance from the wired remote controller, or in cases where addresses are change after address setup.



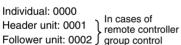
In the above example, where remote controllers are not yet wired, set the address manually after individually connecting the wired remote controller.

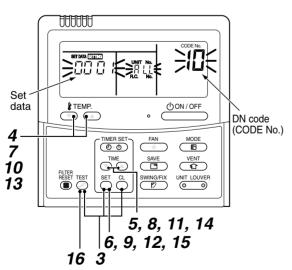




After address setup, return to the original wiring over remote controllers.

Group address





- 1 Arrange one indoor unit and one remote controller set to 1 by 1.
- **2** Turn on the power.
- 3 Push the <sup>St</sup>→ + <sup>C</sup>→ + <sup>St</sup>→ buttons simultaneously for 4 seconds or more. LCD begins blinking.

▼ (Refrigerant line address)

- **4** Using the  $(\mathbf{x})$  buttons, set the DN code to 12.
- 5 Using the ♥ ▲ buttons, set up the line address (match it with the line address on the interface PC board of the header unit on the same refrigerant line).
- **6** Push the  $\stackrel{\text{\tiny SET}}{\longrightarrow}$  button (OK when the display goes on).
- ▼ (Indoor address)
- 7 Using the  $\bigcirc$  buttons, set the DN code to 13.
- 8 Using the 
   ★ buttons, set up the indoor address.
   (0001~0064)
- **9** Push the  $\stackrel{\text{\tiny SET}}{\bigcirc}$  button (OK when the display goes on).
- ▼ (Group address)
- **10** Using the  $\bigcirc$  buttons, set the DN code to 14.
- 11 Using the ♥ ▲ buttons, set Individual = 0000, Header unit = 0001, Follower unit = 0002.
- **12** Push the  $\stackrel{\text{\tiny SET}}{\bigcirc}$  button (OK when the display goes on).
- ▼ (Central control address)
- **13** Using the  $\bigcirc$  buttons, set DN code to 03.
- 14 Using the ♥ ▲ buttons, set up the central control address. (0001~0064)
- **15** Push  $\stackrel{\text{\tiny def}}{\bigcirc}$  button. (OK when display goes on).
- **16** Push the button. Setup is finished ("Setting up" blinks; when "Setting up" goes off, operation is possible).
- 17 Return to the original wiring over remote controllers.

#### NOTE

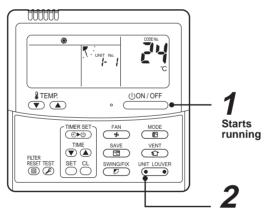
- (1) When setting the line address from the remote controller, do not use addresses 29 and 30. Addresses 29 and 30 cannot be set up on the outdoor unit. If they are incorrectly used, the code "E04" (indoor/outdoor communication circuit error) is output.
- (2) When manual address setup has been done from a remote controller, and central control over refrigerant lines is to be done, setup the header unit of each line as follows:
  - Using SW13 and SW14 on the interface PC board of the header unit of each line, setup the line address for each line.
  - Except for the line with the smallest line address number, set SW03-bit 2 to "off" for the interface PC board of the header unit of lines connected to the same central control (put the terminator resistor of the central control line, indoors and outdoors, into one).
  - Connect the relay connector between U1/U2 and U3/U4 of the header unit for each refrigerant line.
  - After that, set up the central control address. (For central control address setup, refer to the installation manual of the central control devices.)

# Confirming the indoor unit addresses and the position of an indoor unit using the remote controller

#### Confirming the numbers and positions of indoor units

To see the indoor unit address of an indoor unit which you know the position of

▼ When the unit is individual (the indoor unit is paired with a wired remote controller one-to-one), or it is a group-controlled one.



#### (Execute it while the units are running.)

**1** Push the  $\bigcirc^{\bigcirc ON/OFF}$  button if the units stop.

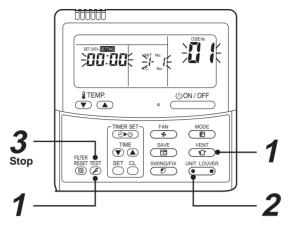
#### **2** Push the button (left side of the button).

A unit numbers *{-, f* 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).

To find an indoor unit's position from its address

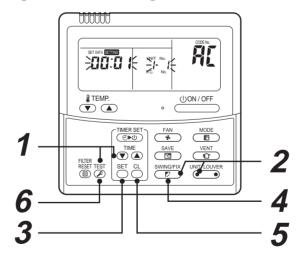
▼ When checking unit numbers controlled as a group



#### (Execute it while the units are stopped.)

The indoor unit numbers in a group are indicated one after another. The fan and louvers of the indicated units are activated.

- **1** Push and hold the  $\underbrace{\overset{\text{VENT}}{\textcircled{1}}}$  and  $\overleftarrow{\overset{\text{VENT}}{\textcircled{2}}}$  buttons at the same time for more than 4 seconds.
  - *ALL* appears on UNIT No. on the LCD display.
  - The fans and louvers of all the indoor units in the group are activated.
- 2 Push the unit button (left side of the button). Each time you push the button, the indoor unit numbers are indicated one after another.
  - The first-indicated unit number is the address of the header unit.
  - Only the fan and louvers of the indicated indoor unit are activated.
- **3** Push the  $\stackrel{\text{TEST}}{\textcircled{O}}$  button to finish the procedure. All the indoor units in the group stop.
- ▼ To check all the indoor unit addresses using an arbitrary wired remote controller. (When communication wirings of 2 or more refrigerant lines are interconnected for central control)



#### (Execute it while the units are stopped.)

You can check indoor unit addresses and positions of the indoor units in a single refrigerant line.

When an outdoor unit is selected, the indoor unit numbers of the refrigerant line of the selected unit are indicated one after another and the fan and louvers of the indicated indoor units are activated.

- 1 Push and hold the TIME and buttons at the same time for more than 4 seconds. At first, the line 1 and CODE No. ☐ (Address Change) are indicated on the LCD display. (Select an outdoor unit.)
- 2 Push the UNIT LOUVER (left side of the button) and buttons repeatedly to select a system address.
- **3** Push the  $\stackrel{\text{\tiny SET}}{\bigcirc}$  button to confirm the system address selection.
  - The address of an indoor unit connected to the selected refrigerant line is indicated on the LCD display and its fan and louvers are activated.
- 4 Push the button (left side of the button). Each time you push the button, the indoor unit numbers of the selected refrigerant line are indicated one after another.
  - Only the fan and louvers of the indicated indoor unit are activated.

#### To select another system address

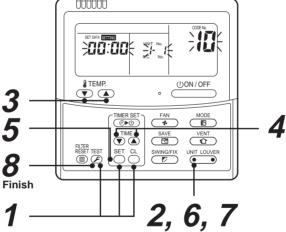
- **5** Push the  $\stackrel{\alpha}{\frown}$  button to return to step **2**.
  - After returning to step **2**, select another system address and check the indoor unit addresses of the line.
- **6** Push the  $\overset{\text{TEST}}{\textcircled{O}}$  button to finish the procedure.

### Changing the indoor unit address using a remote controller

To change an indoor unit address using a wired remote controller.

The method to change the address of an individual indoor unit (the indoor unit is paired with a wired remote controller one-to-one), or an indoor unit in a group. (The method is available when the addresses have already been set automatically.)

ne method is available when the addresses have already been set automatically



(Execute it while the units are stopped.)

- **1** Push and hold the  $\overset{\text{set}}{\bigcirc}$ ,  $\overset{\text{ch}}{\bigcirc}$ , and  $\overset{\text{rest}}{\textcircled{>}}$  buttons at the same time for more than 4 seconds. (If 2 or more indoor units are controlled in a group, the first indicated UNIT No. is that of the head unit.)
- 2 Push the button (left side of the button) repeatedly to select an indoor unit number to change if 2 or more units are controlled in a group. (The fan and louvers of the selected indoor unit are activated.)

(The fan of the selected indoor unit is turned on.)

**3** Push the TEMP.  $\bigcirc$  /  $\bigcirc$  buttons repeatedly to select ( $\bigcirc$  for CODE No..

- **4** Push the TIME I buttons repeatedly to change the value indicated in the SET DATA section to that you want.
- **5** Push the  $\stackrel{\text{\tiny SET}}{\bigcirc}$  button.
- 6 Push the button (left side of the button) repeatedly to select another indoor UNIT No. to change.

Repeat steps 4 to 6 to change the indoor unit addresses so as to make each of them unique.

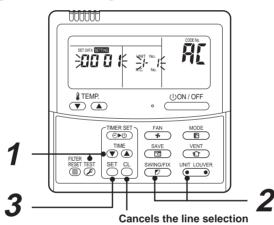
- 7 Push the button (left side of the button) to check the changed addresses.
- **8** If the addresses have been changed correctly, push the  $\overset{\text{TEST}}{>}$  button to finish the procedure.

▼ To change all the indoor unit addresses using an arbitrary wired remote controller. (The method is available when the addresses have already been set automatically.)

(When communication wirings of 2 or more refrigerant lines are interconnected for central control) NOTE

You can change the addresses of indoor units in each refrigerant line using an arbitrary wired remote controller.

\* Enter the address check/change mode and change the addresses.



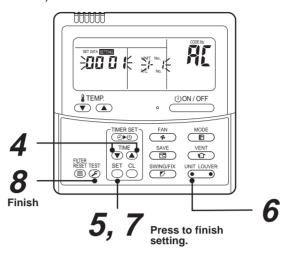
If no number appears on UNIT No., no outdoor unit exists on the line. Push  $\bigcirc$  button and select another line following step **2**.

(Execute it while the units are stopped.)

- **1** Push and hold the TIME **▼** and **▷** buttons at the same time for more than 4 seconds. At first, the line 1 and CODE No. *A*<sup>*C*</sup> (Address Change) are indicated on the LCD display.
- **2** Push (left side of the button) and *button* buttons repeatedly to select a system address.

#### **3** Push the $\stackrel{\text{\tiny SET}}{\bigcirc}$ button.

- The address of one of the indoor units connected to the selected refrigerant line is indicated on the LCD display and the fan and louvers of the unit are activated. At first, the current indoor unit address is displayed in SET DATA.
  - (No system address is indicated.)



**4** Push the TIME **▼** / **▲** buttons repeatedly to change the value of the indoor unit address in SET DATA.

Change the value in SET DATA to that of a new address.

- **5** Push the  $\stackrel{\text{\tiny SET}}{\bigcirc}$  button to confirm the new address on SET DATA.
- 6 Push the UNIT LOUVER button (left side of the button) repeatedly to select another address to change. Each time you push the button, the indoor unit numbers in a refrigerant line are indicated one after another. Only the fan and louvers of the selected indoor unit are activated. Repeat steps 4 to 6 to change the indoor unit addresses so as to make each of them unique.
- 7 Push the <sup>SET</sup> button. (All the segments on the LCD display light up.)
- **8** Push the  $\overset{\text{\tiny EST}}{$  button to finish the procedure.

### Resetting the address (Resetting to the factory default (address undecided))

#### Method 1

Clearing each address separately using a wired remote controller.

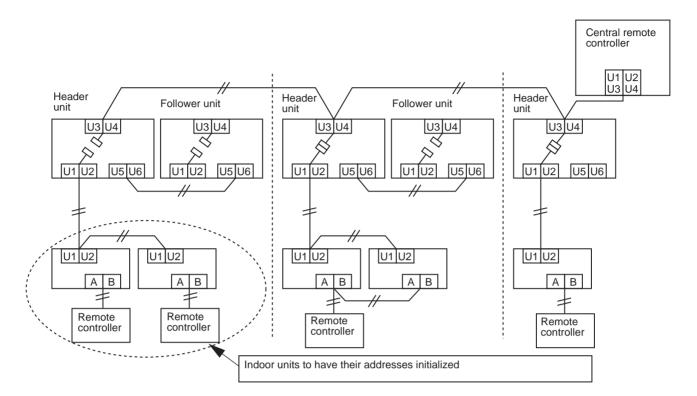
Set the system address, indoor unit address and group address to "0099" using a wired remote controller. (For the setting procedure, refer to the address setting procedures using the wired remote controller on the previous pages.)

#### Method 2

Clearing all the indoor unit addresses on a refrigerate line at once from the outdoor unit.

- **1** Turn off the refrigerant line to reset to the factory default and set the header outdoor unit of the line as below.
  - Disconnect the relay connectors between the [U1, U2] and [U3, U4] terminals. (Leave them as they are if they have already been disconnected.)

2) Turn on DIP switch 2 of SW30 on the interface P.C. board of the header outdoor unit if the switch is OFF. (Leave it as it is if it has already been set to ON.)



2 Turn on the indoor and outdoor units of the refrigerant line for which you want to initialize the addresses. About one minute after turning on the power, confirm that the 7-segment display on the header outdoor unit indicates "U.1. - - " and operate the interface P.C. board on the header outdoor unit of the refrigerant line as follows.

SW01	SW02	SW03	SW04	Clearable addresses
2	1	2	Confirm that the 7-segment display indicates "A.d.buS" and turn SW04 ON for more than five seconds.	System/indoor unit/group address
2	2	2	Confirm that the 7-segment display indicates "A.d.nEt" and turn SW04 ON for more than five seconds.	Central control address

- **3** Confirm that the 7-segment display indicates "A.d. c.L." and set SW01, SW02 and SW03 to 1, 1, 1 respectively.
- **4** After a time "U.1.L08" appears on the 7-segment display if the address clearing has been completed successfully.

If the 7-segment display indicates "A.d. n.G.", the outdoor unit may still connected with other refrigerant lines. Check the connection of the relay connectors between [U1, U2] and [U3, U4].

#### NOTE

Take care to carry out the procedure above correctly; otherwise, addresses in other refrigerate lines may also be cleared.

**5** Set the addresses again after finishing the clearance.

### In the case of an increase in address-undefined indoor units (extension, etc.)

To set up the indoor address of a unit with an address that is undefined due to the extension of indoor units or replacement of PC board, etc., follow the methods below.

#### Method 1

Set up an address individually from a wired remote controller. (Line address, Indoor address, Group address, Central address)

For the setup method, refer to "Manual address setup from the remote controller." above.

#### Method 2

Set up an address from the outdoor unit.

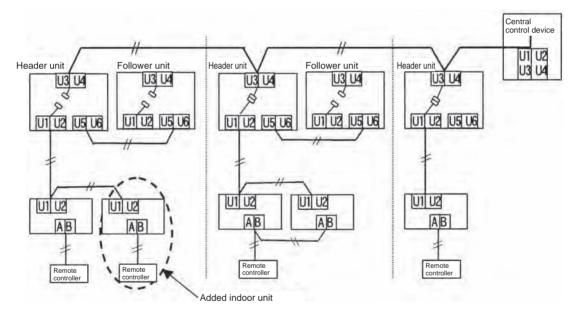
\* Leave the addresses of the units for which addresses have already been set up as they are. Set up an address only for the unit where the address is undefined. Addresses are allocated from lower numbers.

#### Setup procedure

Set up the outdoor header units in the refrigerant line to which indoor units have been added, as follows.

#### **1** Disconnect the relay connector between U1/U2 and U3/U4.

2 If it is off, turn on SW30-bit 2 on the interface PC board at outdoor header unit side. \*Turn off the power, and then execute the operation.



**3** Turn on the indoor/outdoor power for the refrigerant line for which an address is to be set up. After approximately 1 minute, check that "U.1. - - -" is displayed on the 7-segment display.

#### 4 Execute the following operation on the interface PC board of the header unit.

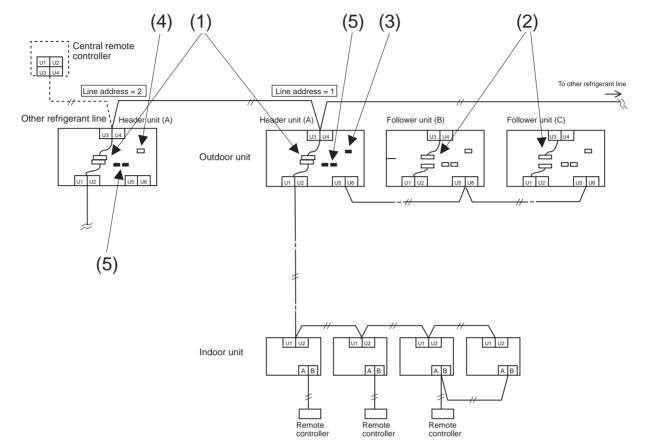
[	SW01	SW02	SW03	SW04
	2	14	2	After checking that "In.At" is displayed on the 7-segment display, push SW04 for 5 seconds or more.

"AUTO1"  $\rightarrow$  "AUTO2"  $\rightarrow$  "AUTO3"  $\rightarrow$  ...  $\rightarrow$  "AUTO9" ... is counted and displayed on the 7-segment display.

- **5** When "U.1. - -" is displayed on the 7-segment display, the setup operation finished. Turn off the indoor/outdoor power.
- **6** Return to the following setup as before.
  - Relay connector
  - SW30-bit 2
  - SW01, SW02, SW03

### 7-4-4. Check after Address Setup when Central Control System Is Connected

When the central control system is connected, check that the following setup has finished after address setup.



	Main check items	Check
Relay	(1) Is the relay connector of the header unit connected after address setup?	
connector	(2)Is the relay connector of the follower unit disconnect?	
Terminator resistor	(3)Is the terminator resistor (SW30-bit 2) of the header unit with the smallest line address number in the central control turned on? (Setup is unnecessary for follower units.)	
	(4)Is the terminator resistor (SW30-bit 2) of the header units, except for the line with the smallest central control line address, turned off? (Setup is unnecessary for follower units.)	
Line address	(5) Are addresses in the line address (SW13, SW14) not duplicated in each refrigerant line?	

#### NOTE

The figure above does not show all the electric wires. For details, refer to the installation manuals for the outdoor unit, indoor unit, remote controller, or optional devices.

# 7-5. Troubleshooting in Test Operation

If there are phenomena such as the output of a check code or the remote controller is not accepted when poweredon after wiring work or during address setup operation, the following causes are considered.

### 7-5-1. A Check Code is Displayed on the Remote Controller

Check the code displayed on the indoor remote controller	Header unit 7- segment display	Cause	Countermeasures	
	-	When outdoor power is off	Check that the header outdoor unit power is on	
	L08	<ul> <li>Address setup error</li> <li>Only line addresses of the connected indoor units are undefined.</li> <li>The outdoor line address and the line addresses of all the indoor units do not match.</li> <li>The indoor addresses are duplicated. (Units except those displaying E04 are duplicated.)</li> <li>A header unit is not set up in group control (except groups displaying E04).</li> </ul>	Set up the address again.	
504	E08 ⇔ -XX Alternate blinking	Duplication of indoor addresses (address number in the subcode of the check code are duplicated).	Set up the address again.	
E04	E07	There is no outdoor terminator resistor or there are two or more terminator resistor. (After address setup, when terminator resistor setup is changed after powering-on)	Check SW30 bit 2 of the header unit. No connection between multiple refrigerant lines: SW30 bit 2 is on. Connection between multiple refrigerant lines: SW30 bit 2 of the connected header unit is turned on only for one line.	
		Transmission circuit error at the interface side (PC board failure)	Replace the interface PC board.	
	E06	After address setup, communication from all the indoor units is interrupted under the condition that a normal operation can be performed.	Check and correct disconnection of the indoor/ outdoor communication line (the communication line between the header unit and the leading indoor unit). Check for the influence of communication noise.	
E16	E16 ⇔ -XX Alternate blinking	Exceeded the number or capacity of connected indoor units	Adjust the number or capacity of connected indoor units.	
E23	E23	Communication between outdoor units has stopped.	Check the number of connected outdoor units. Check that outdoor unit power is on.	
E25	E25	Duplication of outdoor addresses (only when an outdoor address was manually set up)	Do not use manual setup for outdoor addresses.	
E26	E26 ⇔ -XX Alternate blinking	Number of connected outdoor units has decreased. • When installing an outdoor backup • The power of a follower unit is not turned on.	<ul> <li>Correction of the cause of error occurrence</li> <li>If it occurs when installing a backup, clear the error after setup finishes.</li> <li>If the power of a follower unit is not turned on, turn on the power.</li> </ul>	
L04	L04	<ul> <li>Duplication of outdoor line addresses</li> <li>Line address setup error (occurred after connection between U1/U2 and U3/U4 connectors)</li> </ul>	Modify the line address setup of the header unit between lines. (Set up SW13 and SW14 on the interface PC board.)	
L05(*)	L06	Duplication of indoor units with priority	Set up priority only for one indoor unit.	
L06(*)		There are two or more indoor units set up with priority.	Among indoor units indicating "L05," set one unit with priority.	
L08	L08	<ul><li>Address setup error</li><li>Only indoor addresses of all the connected indoor units are undefined.</li></ul>	Set up the addresses again. Modify the setup.	

\* "L05": Displayed on the indoor unit set up with priority

"L06": Displayed on the indoor units except the one set up with priority

### 7-5-2. Operation from the indoor remote controller is not accepted, and a check code is displayed on the 7-segment display of the interface PC board of the header unit.

Indoor remote controller status	Header unit 7-segment display	Cause	Countermeasures
	L08	Line addresses and indoor addresses of all the connected indoor units are not set.	Set up addresses.
		There is no header unit of group control.	Set up a group address.
		Indoor unit power is not turned on.	Turn on the power again. (In the order: indoor $\rightarrow$ outdoor)
	E19 ⇔ -00 Alternate blinking E19 ⇔ -02 Alternate	Indoor/outdoor communication line is not correctly connected to the U1/U2 terminal of the header unit (Fig. 1). (Indoor/ outdoor cannot communicate before address setup.)	Correct wiring
No response		There is no of outdoor terminator resistor, or there are two or more resistances (before address setup).	Check SW30 bit 2 of the header unit. No connection between multiple refrigerant lines: SW30 bit 2 is on. Connection between multiple refrigerant lines: SW30 bit 2 of the connected header unit is turned on only for one line.
		When connecting an indoor/outdoor communication line between outdoor units under the condition of a connected communication line between outdoor units (Fig. 2).	Correct wiring
	blinking	SW08 setup error	Turn all SW08 switches to "off."
	E20 ⇔ -01 Alternate	Address setup is performed with connecting an indoor/ outdoor communication line between outdoor units ( Fig. 3).	Correct wiring
	blinking	Address setup is performed under the condition of connecting multiple refrigerant lines (Fig. 3).	Correct wiring

### 7-5-3. There is no display of a check code on the 7-segment display on the interface PC board of the header unit, although there is indoor unit that is not accepting operation from the indoor remote controller.

Indoor remote controller status display		Cause	Countermeasures	
No response		The communication line is not connected between indoor and outdoor (the unit that does not respond to the indoor remote controller).	Improve the wiring.	
		Line address and indoor address are not set (the unit that does not respond to the indoor remote controller).	Set up the address.	
	onse None	The power of the header unit of the group is not turned on in indoor group control (the unit that does not respond to the indoor remote controller).	Turn on the power.	
		Group address is set to the follower unit for individual control (the unit that does not respond to the indoor remote controller).	Set the group address to "0" in the case of individual control.	
	note None	The power is not turned on (the unit that is not displayed on the indoor remote controller).	Turn on the power.	
		The indoor remote controller is not connected with a wire (the unit that is not displayed on the indoor remote controller).	Improve the wiring.	
No display on the indoor remote controller (no line		Miswiring of the indoor remote controller (the unit that is not displayed on the indoor remote controller)	Improve the wiring.	
is output.)		Indoor remote controller communication circuit error (the unit that is not displayed on the indoor remote controller) If 220-240 V is incorrectly applied to the indoor remote controller terminal, the remote controller communication circuit fails.	Remove the quick connect terminal connected to indoor remote controller terminals A/B, and check the voltage. If voltage is not applied (normally 15 to 18 V), replace the PC board.	

### 7-5-4. In checking the number of connected outdoor units and connected indoor units after address setup, a lower number of connected units is displayed. (There are outdoor/indoor units that do not operate in a test operation.)

Status	Cause	Countermeasures
The number of connected outdoor units is too few.	Miswiring of communication lines between outdoor units or an unconnected wire (Fig. 4). (Address setup operation finished without recognizing a miswired follower unit.)	After improvement of wiring, set up the addresses again and check the number of connected outdoor units.
The number of connected indoor units is too few.	Miswiring of communication lines between indoor units or an unconnected wire (Fig. 5). (Address setup operation finished without recognizing a miswired indoor unit.)	After modification of wiring, set up the addresses again and check the number of connected indoor units.
The number of indoor units	The indoor remote controller is not connected with wire. Miswiring of the indoor remote controller	Using the main indoor remote controller connected to a group, start a test operation, specify the unit that is not operating (the unit not connected to the group), and then check the wiring.
connected to a group is too few in group operation from an indoor remote controller.	Indoor remote controller communication circuit error If 220-240 V is incorrectly applied to the remote controller terminal, the remote controller communication circuit fails.	Using the main indoor remote controller connected to a group, start a test operation and then specify the unit that is not operating (the unit not connected to the group). Remove the quick connect terminal connected to remote controller terminals A/B, and check the voltage. If voltage is not applied (normally 15 to18 V), replace the PC board.

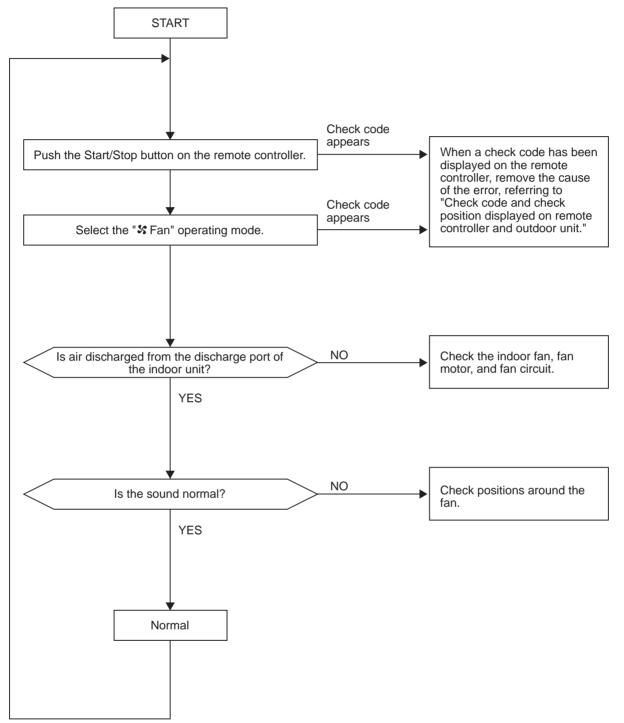
### Miswiring example

Figure	Remote controller status	Header unit 7-segment display	Miswiring example
Fig. 1	No response	E19-00	Header unit U3 U4 U5 U6 U1 U2 U1 U2 U1 U2 U1 U2 U1 U2 U1 U2
Fig. 2	No response	E19-02	Header unit U1 U2 U5 U6 U1 U2 U5 U6 U1 U2 U5 U6 U1 U2 U5 U6 U1 U2 U5 U6
Fig. 3	No response	E20-01	Header unit U1 U2 U1 U2

Figure	Status	Miswiring example
Fig. 4	The number of connected outdoor units is too few.	Header unit U1 U2 U1 U2
Fig. 5	The number of connected indoor units is too few.	Header unit U1 U2

# 7-6. Test Operation Check

### 7-6-1. Fan Check



Check every indoor unit in turn.

### 7-6-2. Cooling/heating Test Operation Check

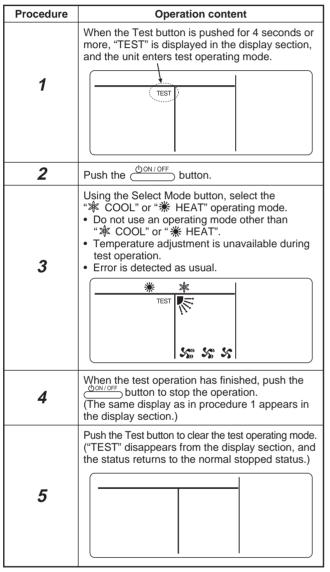
The cooling/heating test operation check can be performed on both the indoor remote controller and the outdoor header unit interface PC board.

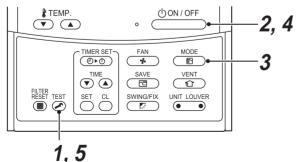
(1) Test operation start/stop operation

Test operation from the indoor remote controller

- Wired remote controller: Refer to the items below in "Test operation" of the wired remote controller.
- Wireless remote controller: Refer to the items below in "Test operation" of the wireless remote controller.
- Lite-Vision plus remote controller : Refer to the installation manual of RBC-AMS51E

#### ▼ Wired remote controller





#### ▼ Wireless remote controller (Except the 4way Cassette type and the Ceiling type)

# Test run (Forced cooling operation)

#### **Requirement:**

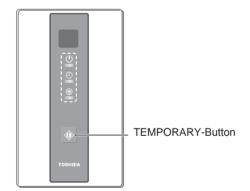
• Finish the forced cooling operation in a short time because it applies excessive strength to the air conditioner.

#### How to perform forced cooling operation

1. When TEMPORARY button is pushed 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 TEMPORARY button once again (Approx. 1 second).
  - Check wiring / piping of the indoor and outdoor units after forced cooling operation.



#### ▼ Wireless remote controller (4-way Cassette type)

#### Test run (Forced cooling operation)

#### **Requirement:**

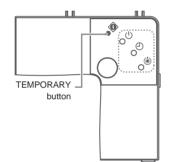
• Finish the forced cooling operation in a short time because it applies excessive strength to the air conditioner.

#### How to perform forced cooling operation

1. When TEMPORARY button is pushed 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 TEMPORARY button once again (Approx. 1 second).
  - Check wiring / piping of the indoor and outdoor units in forced cooling operation.



#### ▼ Wireless remote controller (Ceiling type)

#### Test run (Forced cooling operation)

#### **Requirement:**

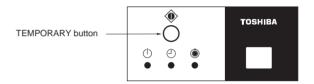
• Finish the forced cooling operation in a short time because it applies excessive strength to the air conditioner.

#### How to perform forced cooling operation

1. When TEMPORARY button is pushed 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 TEMPORARY button once again (Approx. 1 second).
  - Check wiring / piping of the indoor and outdoor units in forced cooling operation.

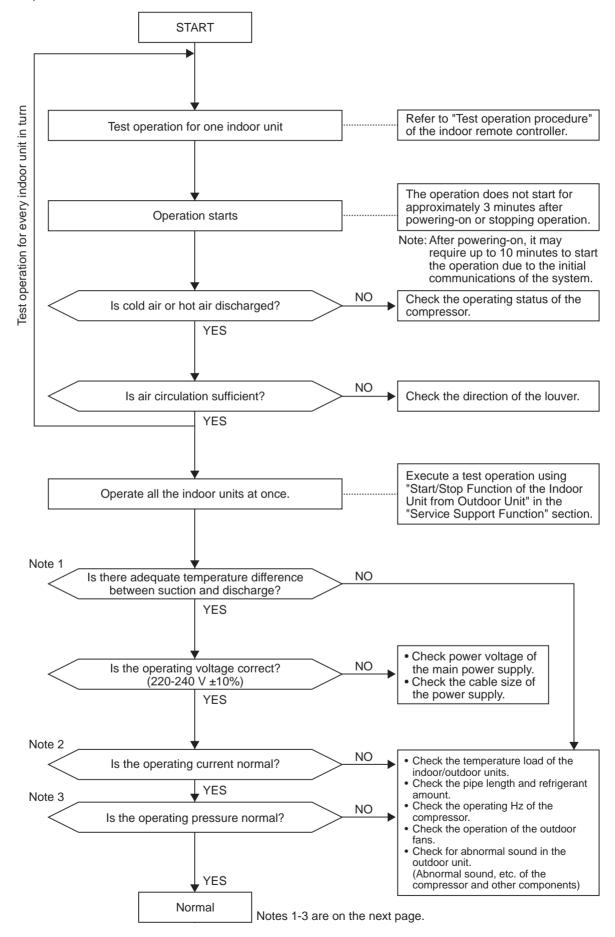


Test operation from the outdoor unit

• Refer to "7-7-2. Function to Start/Stop (ON/OFF) Indoor Unit from Outdoor Unit" in "7-7. Service Support Function."

Note: The test operation returns to normal operating mode after 60 minutes.

#### (2) Test operation



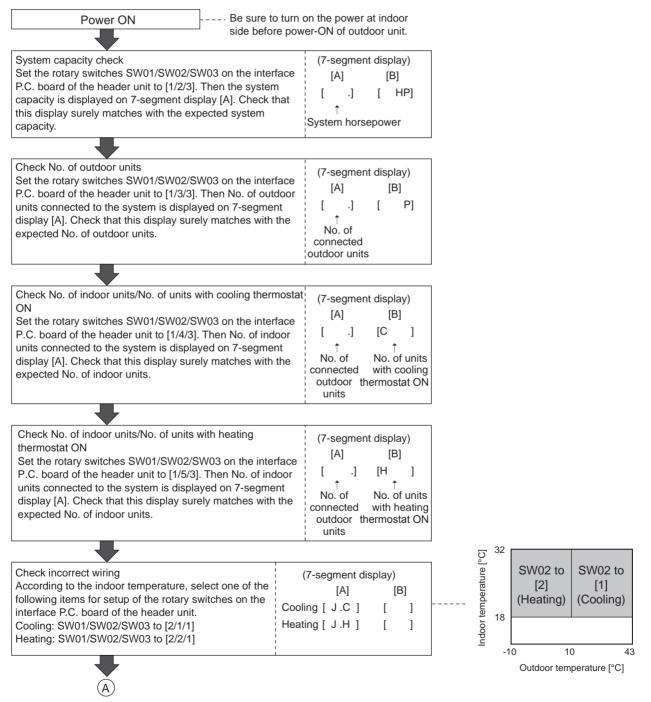
# 7-7. Service Support Function

### 7-7-1. Check Function for Connecting of Refrigerant and Control Lines

This function is provided to check misconnection of the refrigerant pipes and the control transmission line (Wiring over lines) between indoor unit and outdoor unit by using the switch on the interface P.C. board of the header unit. However, be sure to check the following items prior to executing this check function.

- **1** This check function does not work when a group operation by remote controller is performed and it is used over outdoor units.
- **2** When using this check system, be sure to check for each 1 line in the unit of outdoor unit. If checking the multiple lines at the same time, misjudgment may be caused.

(Check procedure)



#### Note 1: Criteria for the difference between suction and discharge temperatures

(1) Cooling operation

After operating for a minimum of 30 minutes in "COOL" mode, if the  $\Delta T$  dry bulb temperature difference between suction and discharge air of the indoor unit is 8°C or more, it is normal.

(2) Heating operation

After operating for a minimum of 30 minutes in "HEAT" mode, if the  $\Delta T$  dry bulb temperature difference between suction and discharge air of the indoor unit is 15°C or more, it is normal.

- \* If demand from the indoor unit on the outdoor unit is low because the difference between the temperature set by the remote controller and the temperature of the room is small, then the ∆T temperature difference is small.
- \* Consider that ∆T temperature difference may diminish in cases of a system in which the connected indoor unit capacity exceeds the outdoor unit capacity, the pipe length is long, or a large difference exists among outdoor units.

#### Note 2: Criteria for operating power current

The table below shows the maximum current for each outdoor unit. Under standard conditions, operating current is about 80% of the value shown in the table below.

Outdoor unit	MMY-MAP	0806*	1006*	1206*	14B6*	10A6*	12A6*	1406*	1606*	18B6*	14A6*	16A6*	1806*	2006*	2206*
Current value	(A)	20.5	21.5	26.1	29.4	21.5	26.1	31.0	35.8	39.9	31	35.8	40.6	44.9	49.3

#### Note 3: Criteria for cycle status

(1) These data are based on operating a 4-way Air Discharge Cassette type air conditioner of 100% connection with standard piping length.

Data may vary depending on temperature conditions, installed pipe length, and room shape combinations, or indoor unit connection capacity.

For pressure criteria in different temperature conditions, refer to (2).

Outdoor unit Ope	Operating	Pressure (MPa)		Pipe surface temperature (°C)					Number of compessor rotations (rps)		Indoor	Air temperature condition (DB/WB) (°C)	
MMY- MAP	mode	Pd	Ps	Discharge (TD)	Suction (TS)	Indoor heat exchanger (TC)	Outdoor heat exchanger (TE)	Liquid temperature (TL3)	Compressor 1	Compressor 2	fan	Indoor	Outdoor
0806*	Cooling	2.9	0.9	80	16	10	40	30	50	50	High	27/19	35/-
0800	Heating	2.6	0.7	75	5	35	3	30	50	50	High	20/-	7/6
1006*	Cooling	3.1	0.9	85	16	11	40	30	60	60	High	27/19	35/-
1000	Heating	2.6	0.7	80	4	35	2	30	65	65	High	20/-	7/6
1206*	Cooling	3.2	0.9	90	16	11	40	30	70	70	High	27/19	35/-
	Heating	2.6	0.7	85	3	35	2	25	75	75	High	20/-	7/6
14B6*	Cooling	3.2	0.9	95	16	11	40	30	85	85	High	27/19	35/-
10A6*	Cooling	3.1	0.9	85	16	10	40	30	50	50	High	27/19	35/-
10/10	Heating	2.6	0.7	80	5	35	3	30	55	55	High	20/-	7/6
12A6*	Cooling	3.1	0.9	85	16	11	40	35	60	60	High	27/19	35/-
1240	Heating	2.6	0.7	80	4	35	3	30	65	65	High	20/-	7/6
1406*	Cooling	3.2	0.9	90	16	10	40	35	60	60	High	27/19	35/-
1400	Heating	2.6	0.7	80	4	35	3	30	65	65	High	20/-	7/6
1606*	Cooling	3.2	0.9	90	16	10	40	35	70	70	High	27/19	35/-
1000	Heating	2.8	0.7	85	3	30	2	25	70	70	High	20/-	7/6
18B6*	Cooling	3.1	0.9	90	16	10	40	35	80	80	High	27/19	35/-
14A6*	Cooling	3.1	0.9	75	16	11	40	35	60	60	High	27/19	35/-
1470	Heating	2.6	0.7	65	4	30	3	30	65	65	High	20/-	7/6
16A6*	Cooling	3.1	0.9	80	16	11	40	35	70	70	High	27/19	35/-
1040	Heating	2.6	0.7	70	4	30	3	25	75	75	High	20/-	7/6
1806*	Cooling	3.1	0.9	80	15	11	40	35	70	70	High	27/19	35/-
1000	Heating	2.8	0.7	70	4	30	3	25	75	75	High	20/-	7/6
2006*	Cooling	3.1	0.9	85	15	11	40	35	80	80	High	27/19	35/-
2000	Heating	2.8	0.6	75	3	30	2	25	85	85	High	20/-	7/6
2206*	Cooling	3.2	0.9	95	14	11	40	35	100	100	High	27/19	35/-
2200	Heating	2.7	0.6	75	3	30	2	20	85	85	High	20/-	7/6

\* This compressor is driven with a 4-pole motor. The value of the compressor frequency (rps) measured with a clamp meter at the compressor lead line is two times the rotation count (rps) of the compressor.

\* Each compressor may have a different frequency as a measure against resonance.

\* The temperature of the indoor heat exchanger (TC) indicates TCJ sensor temperature when cooling, and TC2 sensor temperature when heating, respectively.

#### (2) Criteria for operating pressure

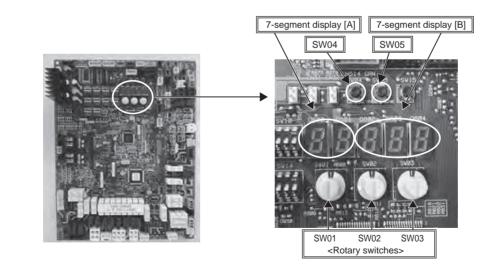
Operating m	ode	Cooling	Heating		
Indoor tempe	erature (°C)	18~32	15~25		
Outdoor tem	perature (°C)	25~35	5~10		
Drosouro	High pressure (MPa)	2.0~3.7	2.5~3.3		
Pressure	Low pressure (MPa)	0.5~0.9	0.5~0.7		

\* Criteria after 15 minutes or more has passed since operating started

#### (3) On rotations of outdoor fans

Outdoor fans may rotate slowly to control pressure when cooling with low outer air temperature or heating with excessive load. For control content, also refer to items in Section 5, "Control Outline: Outdoor Unit, Outdoor Fan Control."

Operation start Press the push-switch SW04 on the interface P.C. board of the header unit for 2 seconds or more. The operation starts. Check that 7-segment display [B] shows [ CC] for cooling and [ HH] for heating.	(7-segment display) [A] [B] Cooling [ C ] [ CC ] Operation Heating [ H ] [ HH ]
Confirmation of check results (1) Check that No. of misconnected indoor units is displayed on 7-segment display [B] after 15 minutes. (If there is no misconnection, [00P] is displayed.)	(7-segment display)       This check operation requires 15 minutes         [A]       [B]         []       [##P]         ↑       ↑         C or H       No. of misconnected indoor units
Confirmation of check results (2) Press the push-switch SW05 on the interface P.C. board of the header unit for 2 seconds or more. The indoor address in which error is being detected is displayed on 7-segment display [B]. If there are multiple indoor address in which error is being detected, they are successively exchanged and displayed. (When SW05 is turned on again, the display returns to display of No. of units.)	
After check, return the rotary switches SW01/SW02/SW03 on the interface P.C. board of the header unit to [1/1/1].	(7-segment display) [A] [B] [U1] [ ]

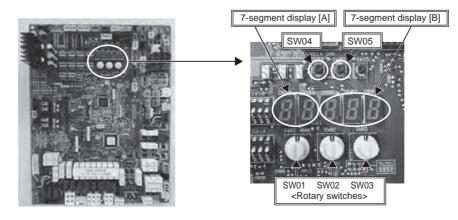


### 7-7-2. Function to Start/Stop (ON/OFF) Indoor Unit from Outdoor Unit

The following functions of the indoor unit can start or stop by the switches on the interface P.C. board of the header unit.

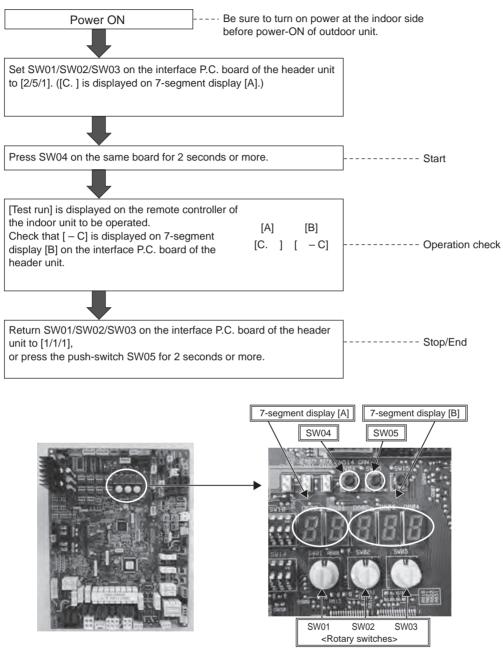
No	Function	Outline	Setup/Release	7-segment display
1	Cooling test operation	Changes the mode of all the connected indoor units collectively to cooling test operation. Note) Control operation same as usual test operation from remote control is performed.	[Setup] Set SW01/SW02/SW03 to [2/5/1], and press SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1].	Section A Section B [C.] [-C]
2	Heating test operation	Changes the mode of all the connected indoor units collectively to heating test operation. Note) Control operation same as usual test operation from remote control is performed.	[Setup] Set SW01/SW02/SW03 to [2/6/1], and press SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1].	Section A Section B [H.] [ – H]
3	Fan test operation	Changes operation mode of all the connected indoor units collectively to test operation mode. Note) Control operation same as usual test operation from remote control is performed.	[Setup] Set SW01/SW02/SW03 to [2/9/1], and push SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1].	Section A Section B [F.] [-F]
4	Batch start	Starts all the connected indoor units collectively. Note) The contents follow to the setup of remote controller.	[Setup] Set SW01/SW02/SW03 to [2/7/1], and press SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1].	Section A Section B [C.H] [11] [00] is displayed on Section B for 5 seconds.
+	Batch stop	Stops all the connected indoor units collectively.	[Setup] Set SW01/SW02/SW03 to [2/7/1], and press SW05 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1].	Section A Section B [C.H] [ 00] [ 00] is displayed on Section B for 5 seconds.
	Individual start	<ul> <li>Starts the specified indoor unit.</li> <li>Notes) <ul> <li>The contents follow to the setup of remote controller.</li> <li>The other indoor units keep the status as they are.</li> </ul> </li> </ul>	[Setup] Set SW01 to [16], set SW02 and SW03 to address No. (1 to 64) to be started, and press SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1].	Section A Section B [] [] Section A: Displays the corresponding indoor address. Section B: Displays [ 11] for 5 seconds from operation-ON.
5	Individual stop	Stops the specified indoor unit. Note) The other indoor units keep the status as they are.	[Setup] Set SW01 to [16], set SW02 and SW03 to address No. (1 to 64) to be stopped, and press SW05 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1].	Section A Section B [] [] Section A: Displays the corresponding indoor address. Section B: Displays [ 00] for 5 seconds from operation-OFF.
	Individual test operation	Operates the specified indoor unit. Note) The other indoor units keep the status as they are.	[Setup] Set SW01 to [16], set SW02 and SW03 to address No. to be operated, and press SW04 for 10 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1].	Section A Section B [] [] Section A: Displays the corresponding indoor address. Section B: Displays [FF] for 5 seconds from test operation-ON.

NOTE 1) This start/stop function only sends the signals from the outdoor unit to the indoor unit, such as start, stop, operation mode, etc. It does not resend the signals even if the indoor unit does not follow the sent signals.
 NOTE 2) The above controls are not used during abnormal stop.



(1) Cooling test operation function

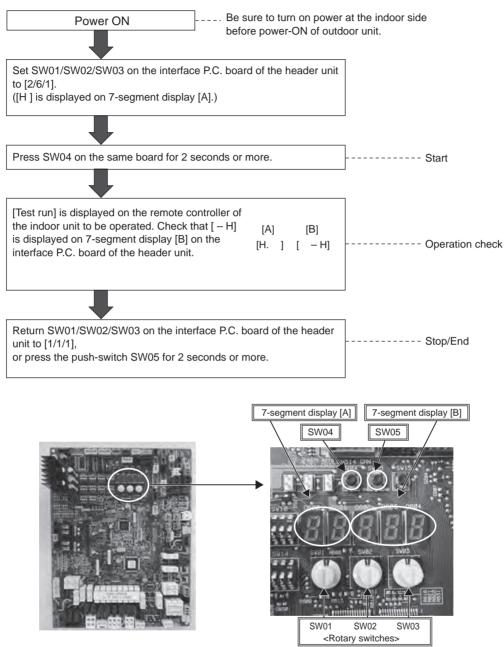
This function is provided to change collectively the mode of all the indoor units connected to the same system for the cooling test operation mode, by using switches on the interface board of the header unit. <Operation procedure>



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

(2) Heating test operation function

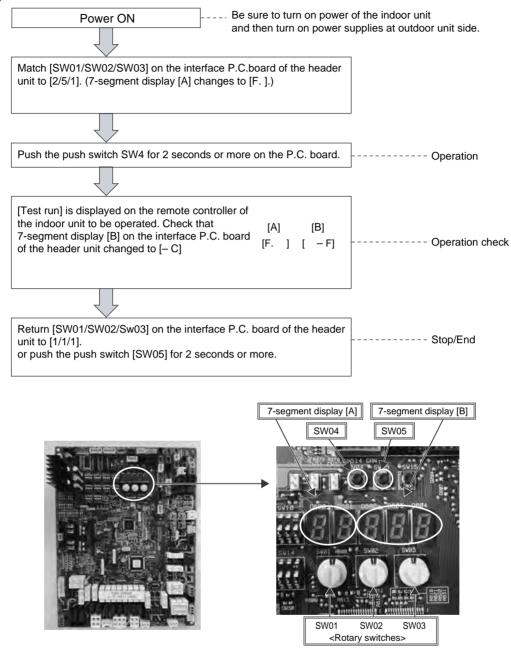
This function is provided to change collectively the mode of all the indoor units connected to the same system for the heating test operation mode, by using switches on the interface board of the header unit. <Operation procedure>



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

#### (3) Fan test operation function

This function is provided to change collectively the mode of all the indoor units connected to the same system for the fan test operation mode by using switches on the interface P.C. board of the header unit. <Operation procedure>

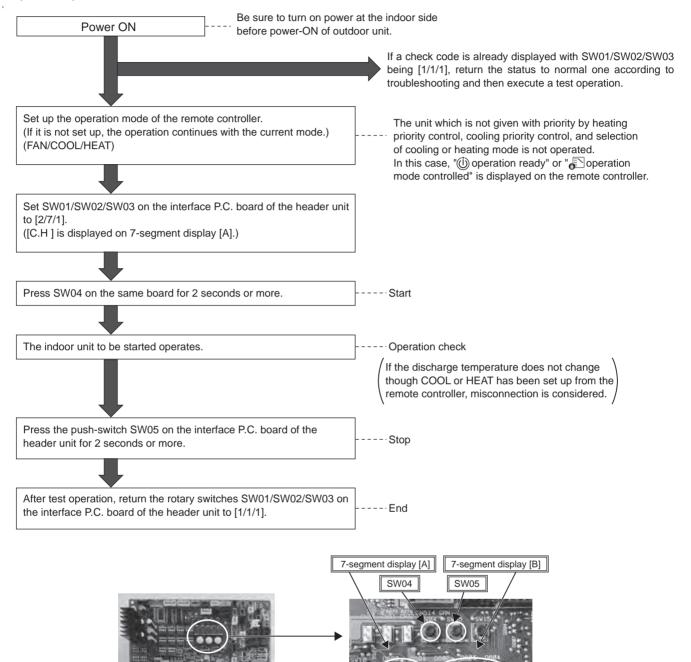


NOTE) The test operation ends after 60 minutes and the operation returns to normal status.

#### (4) Batch start/stop (ON/OFF) function

This function is provided to start/stop collectively all the indoor units connected to the same system by using switches on the interface board of the header unit.





SW01

SW02

<Rotary switches>

SW03

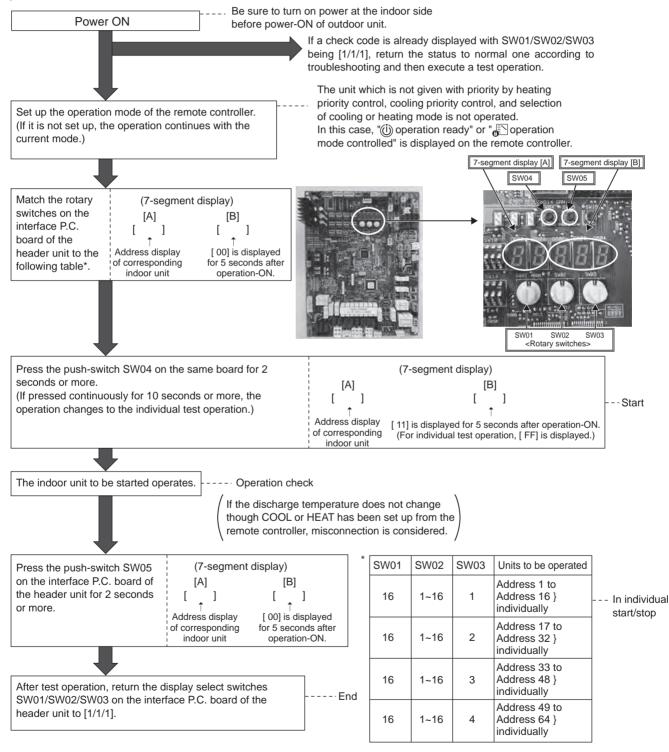
(5) Individual start/stop (ON/OFF) individual test operation function

This function is provided to start/stop (ON/OFF) individually each indoor unit connected to the same system by using switches on the interface board of the header unit.

Set SW01 [16] and set SW02, SW03 to indoor address No. (1 to 64) to be started (Refer to the following table\*) - only the setup indoor unit starts operation.

(In the rotary switches of the indoor unit which operates in a group by the remote controller, the follower unit cannot be individually started or stopped. In this case, [ - - ] is displayed on 7-segment display [B] on the interface P.C. board of the header unit.)

<Operation procedure>



NOTE) The individual test operation returns to the normal operation after 60 minutes.

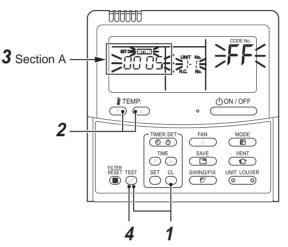
# 7-7-3. Check code Clearing Function

#### (1)Clearing from the main remote controller

#### ▼ Check code clearing in outdoor unit

Check code of the outdoor unit currently detected is cleared by the unit of one refrigerant circuit system to which the indoor units operated by the remote controller is connected. (Check code of the indoor unit is not cleared.) For clearing check codes, the service monitor function of the remote controller is used. **<Method>** 

- 1 Change the mode to service monitor mode by pushing <sup>△</sup>→ + <sup>∞</sup> buttons simultaneously for 4 seconds or more.
- **2** Using  $\bigcirc$  buttons, set CODE No. to "FF".
- 3 The display in Section A in the following figure is counted with interval of 5 seconds as "0005" --> "0004" --> "0003" --> "0002" --> "0001" --> "0000". When the count arrives "0000", the check code is cleared. "However, counting from "0005" is repeated on the display.
- **4** When  $\stackrel{\text{\tiny TST}}{>}$  button is pushed, the status returns to the normal status.

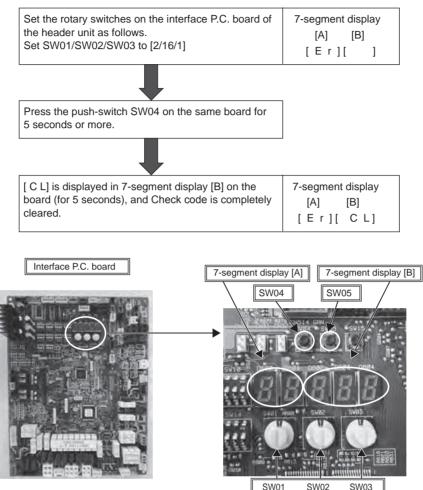


#### ▼ Check code clearing in indoor unit

Check code in the indoor unit is cleared by button on the remote controller. (Only check code of the indoor unit connected with operating remote controller is cleared.)

#### (2)Clearing check code by using switches on the interface board of the header unit

Using the switches on the interface P.C. board of the header unit, this function is to clear the currently detected check code for each refrigerant circuit system without resetting the power supply. Check codes in both outdoor and indoor units are once cleared, and check code detection is performed again.



<Rotary switches>

#### (3)Clearing check code by resetting power

This function is provided to clear check code in a system by resetting the power of all the outdoor and the indoor units. As same as the clearing method by the interface P.C. board, check codes of both the outdoor and the indoor units are once cleared, and check code detection is performed again.

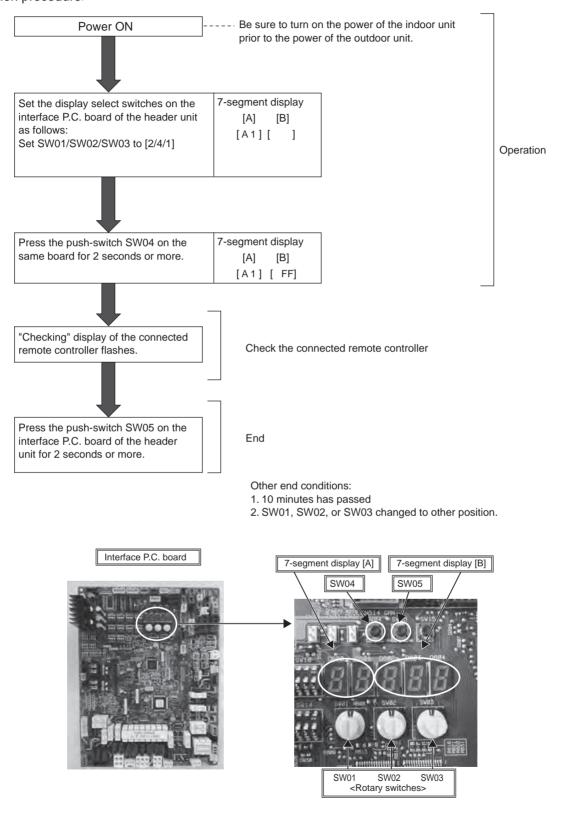
#### <Method>

(1) Be sure to reset power of both the outdoor and the indoor units.

- (2) Turn on the power of the indoor unit prior to the power of the outdoor unit.
- (If the power is turned on in reverse order, a check code [E19] (No. of header unit error) is output.)
- **NOTE)** After power reset, it requires usually 3 minutes to power-on due to the initial communication of the system. In some cases, it requires max. 10 minutes.

# 7-7-4. Remote Controller Distinction Function

This function is provided to distinguish the remote controller connected to the indoor unit from the outdoor unit for a refrigerant circuit system by using switches on the interface P.C. board of the header unit. <Distinction procedure>



### 7-7-5. Pulse Motor Valve (PMV) Forced Open/Close Function in Indoor Unit

This function is provided to open or close forcedly PMV for 2 minutes in all the indoor units by the switch operation on the interface P.C. board of the header unit.

This function is also used to open PMV fully when turning off the power and executing an operation.

#### <Operation>

#### [Open fully]

Set the switches SW01/SW02/SW03 on the interface P.C. board of the header unit to [2/3/1], and press SW04 for 2 seconds or more.

(Display appears on 7-segment display for 2 minutes as follows.) [P ] [ FF]

#### [Close fully]

Set the switches SW01/SW02/SW03 on the interface P.C. board of the header unit to [2/3/1], and press SW05 for 2 seconds or more.

(Display appears on 7-segment display for one minute as follows.) [P] [00]

#### [Clear]

After 2 minutes (1 minutes for "Close fully") after setting up, the opening automatically returns to the normal opening.

### 7-7-6. Pulse Motor Valve (PMV) Forced Open Fully/Close fully Function in Outdoor Unit

This function is provided to forcedly open or close fully P.M.V. (PMV1/PMV3, PMV4) used in the outdoor unit for 2 minutes.

#### [PMV1 Open fully]

On the interface board of the outdoor unit, set the DIP switch [SW12·bit1] to [OFF], [SW12·bit2] to [OFF], and short-circuit CN30.

#### [PMV1 Close fully]

On the interface board of the outdoor unit, set the DIP switch [SW12·bit1] to [OFF], [SW12·bit2] to [OFF], and short-circuit CN31.

#### [PMV3 Open fully]

On the interface P.C. board of the outdoor unit, set the DIP switch [SW12·bit1] to [ON], [SW12·bit2] to [OFF], and shortcircuit CN30.

#### [PMV3 Close fully]

On the interface P.C. board of the outdoor unit, set the DIP switch [SW12·bit1] to [ON], [SW12·bit2] to [OFF], and shortcircuit CN31.

#### [PMV4 Open fully]

On the interface board of the outdoor unit, set the DIP switch [SW12·bit1] to [OFF], [SW12·bit2] to [ON], and short-circuit CN30.

#### [PMV4 Close fully]

On the interface board of the outdoor unit, set the DIP switch [SW12·bit1] to [OFF], [SW12·bit2] to [ON], and short-circuit CN31.

#### [Clear]

For both open fully and close fully, after 2 minutes, the opening returns to the normal opening. Be sure to remove the cord used for short-circuit after confirmation, and set the DIP switch [SW12·bit1] to [OFF] and [SW12·bit2] to [OFF].

# 7-7-7. Solenoid Valve Forced Open/Close Function in Outdoor Unit

This function is provided to forcedly open each solenoid valve mounted in the outdoor unit by the switch operation on the interface P.C. board in the outdoor unit. Use this function to check there is no refrigerant clogging with ON/ OFF operation of the solenoid valve.

#### [Operation]

(1) Set the switches SW01/SW02/SW03 on the interface P.C. board of the outdoor unit to [2/1/3].

- (2) When [H. r] is displayed in 7-segment display [A], keep pressing the switch SW04 for 2 seconds or more.
- (3) From when [2] is displayed in 7-segment display [B], SV2 is turned on.
- (4) After then, ON and OFF of each solenoid valve are exchanged by changing the setup number of the switch SW02.

(ON/OFF output pattern of each solenoid valve is as shown below.)

- **NOTE 1)** Display in 7-segment display [B] is exchanged just when the number of SW02 has been changed; on the other hand, the solenoid valve output is exchanged when SW02 has been kept with the same number for 5 seconds or more.
- **NOTE 2)** The mark [O] in the table indicates that the corresponding solenoid valve is forcedly turned on.
- **NOTE 3)** The mark [-] in the table indicates that ON/OFF of the solenoid value is controlled based upon the specifications of the air conditioner.
- **NOTE 4)** The mark [x] in the table indicates that the corresponding solenoid value is forcedly turned off with this operation.
- NOTE 5) The case heater output is for both the compressor and accumulator heaters.

	7-segment			Opera	tion pat	tern of	solenoio	d valve			Case heater
SW02	display [B]	SV2 SV51 SV52 SV41 SV42 SV3A SV3B SV3C SV3D		output relay							
1	[2]	0	-	-	-	-	-	-	-	-	0
2	[ 51]	-	0	-	-	-	-	-	-	-	0
3	[ 52]	-	-	0	-	-	-	-	-	-	0
4	[ 41]	-	-	-	0	-	-	-	-	-	0
5	[ 42]	-	-	-	-	0	-	-	-	-	0
7	[ 3A]	-	-	-	-	-	0	-	-	-	0
8	[ 3b]	-	-	-	-	-	-	0	-	-	0
9	[ 3C]	-	1	1	-	1	-	-	0	-	0
10	[ 3d]	-	-	-	-	-	-	-	-	0	0
11	[ 3-]	-	-	-	-	-	0	0	0	0	0
12~15		-	-	-	-	-	-	-	-	-	0
16	[ALL]	0	0	0	0	0	0	0	0	0	0

#### [Clear]

Return switches SW01/SW02/SW03 on the interface P.C. board to [1/1/1].

**NOTE)** As this function is not based on the specified general control, be sure to release this mode after checking.

## 7-7-8. Fan Operation Check in Outdoor Unit

This function is provided to check the fan operation of the outdoor unit by using switches on the interface P.C. board in the outdoor unit. The frequency of the fan speed can be controlled by setting of the switches. Use this function to check the operation or abnormal sound in the fan system. And, use this function while the system is stopped.

**NOTE)** Do not use this function during operation of the compressor. It may damage the compressor. Two fans move synchronously in two fan model (MMY-MAP1806\* to MAP2206\*).

#### [Operation]

(1) Set the switches SW01/SW02/SW03 on the interface P.C. board of the outdoor unit to [2/1/4].

(2) When [F. d] is displayed in 7-segment display [A], keep pressing the switch SW04 for 2 seconds or more.

(3) When [ 63] is displayed in 7-segment display [B], the fan starts operation. (Max. mode operation)

(4) After that, by changing the setup number of the switches SW02 and SW03, 7-segment display [B] and the fan mode are changed.

			,				
SW02	SW03	7-segment display [B]	Fan mode	SW02	SW03	7-segment display [B]	Fan mode
1		[ 63 ]	63	1		[ 31 ]	31
2	1	[ 62 ]	62	2		[ 30 ]	30
3		[ 61 ]	61	3		[ 29 ]	29
4		[ 60 ]	60	4		[ 28 ]	28
5	]	[ 59]	59	5		[ 27 ]	27
6		[ 58]	58	6		[ 26 ]	26
7		[ 57]	57	7		[ 25 ]	25
8	4	[ 56]	56	8	6	[ 24 ]	24
9		[ 55]	55	9		[ 23 ]	23
10		[ 54]	54	10		[ 22 ]	22
11	]	[ 53]	53	11		[ 21 ]	21
12	]	[ 52]	52	12	]	[ 20 ]	20
13	1	[ 51]	51	13	1	[ 19]	19
14	1	[ 50]	50	14		[ 18 ]	18
15	1	[ 49]	49	15		[ 17]	17
16		[ 48]	48	16		[ 16 ]	16
1		[ 47]	47	1		[ 15]	15
2	]	[ 46]	46	2		[ 14]	14
3	1	[ 45]	45	3	1	[ 13 ]	13
4	1	[ 44 ]	44	4		[ 12 ]	12
5	1	[ 43]	43	5		[ 11 ]	11
6		[ 42 ]	42	6		[ 10 ]	10
7		[ 41 ]	41	7		[ 9]	9
8		[ 40]	40	8		[ 8]	8
9	5	[ 39]	39	9	7	[ 7]	7
10	1	[ 38]	38	10		[ 6]	6
11	1	[ 37]	37	11		[5]	5
12		[ 36]	36	12	1	[ 4]	4
13	1	[ 35]	35	13	1	[ 3]	3
14	1	[ 34]	34	14	1	[ 2]	2
15	1	[ 33]	33	15	1	[ 1]	1
16	1	[ 32]	32	16	1	[ 0]	0
					1		

(Mode output pattern of the fan is as follows.)

### [Clear]

This function is cleared by one of the following operations.

(1) When SW01 setting number was changed to other number.

(2) Press-switch SW05 was pressed for 2 seconds or more.

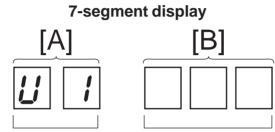
### 7-7-9. Abnormal Outdoor Unit Discrimination Method By Fan Operating Function

This function is provided to forcedly operate the fan of the outdoor unit in which a check code occurred or the fan of the normal outdoor unit by the switch operation on the interface P.C. board in the header unit. To specify which one of the follower units connected to the system had problem, use this function for the system stop due to a follower unit problem (Check code [E28]).

### [Operation]

#### <In case to operate the fan in the erroneous outdoor unit only>

(1) Check that the switches SW01/SW02/SW03 on the interface P.C. board in the header unit are set to [1/1/1].



Outdoor unit No. Check code display

- (2) Press the push-switch SW04 for 2 seconds or more.
- (3) [E 1] is displayed on 7-segment display [A].
- (4) The fan of the outdoor unit in which problem occurred starts operation within approx. 10 seconds after [E 1] was displayed.

#### <In case to operate the fans in all the normal outdoor units>

- (1) Check that the switches SW01/SW02/SW03 on the interface P.C. board in the header unit are set to [1/1/1].
- (2) Press the push-switches SW04 and SW05 at the same time for 2 seconds or more.
- (3) [E 0] is displayed on 7-segment display [A].
- (4) The fans of all the normal outdoor units start operation with the Max. fan speed within approx. 10 seconds after [E 0] was displayed.

#### [Release]

Press the push-switch SW05 on the interface P.C. board in the header unit for 2 seconds or more. The outdoor fan which was operated stops.

\* Check that [U. 1] is displayed on 7-segment display [A], and then finish the work.

### 7-7-10. Manual Adjustment Function of Outside Temperature (TO) Sensor

This function is provided to fix TO sensor value manually by the switch operation on the interface P.C. board in the outdoor unit. When the unit stops abnormally due to TO sensor failure, etc, an emergent operation is available by setting up the value manually to position near the current outside temperature.

### [Operation]

(1) Set the rotary switches on the interface P.C. board to numbers as follows:

- SW01/SW02/SW03 to [2/1/15]
- 7-segment display: [t o]
- (2) Keep pressing the push-switch SW04 on the interface P.C. board for 1 second or more. The mode changes to the TO sensor value fix manual mode.
- (3) As shown in the following table, TO sensor value can be fixed by setting the rotary switch SW02 on the interface P.C. board.

#### [Clear]

Return SW01/SW02/SW03 on the interface P.C. board in the outdoor unit to [1/1/1].

SW02	7-segment display [B]	TO sensor value
1	[ 10]	10°C
2	[ 15]	15°C
3	[ 20]	20°C
4	[ 25]	25°C
5	[ 30]	30°C
6	[ 35]	35°C
7	[ 40]	40°C
8	[ 43]	43°C
9	[ 45]	45°C
10	[ –15 ]	-15°C
11	[ -10 ]	-10°C
12	[-5]	-5°C
13	[ 0]	0°C
14	[ 2]	2°C
15	[ 5]	5°C
16	[ 7]	7°C

**NOTE)** If operated with TO sensor fixed by this function, the system control operation of the air conditioner may not be based on the specification of the product. Therefore an emergent operation should be restricted to a day or so.

When the outside temperature is 45°C or more, set to 45°C (SW02="9")

#### <Service support function list>

SW01	SW02	SW03	7-segment display [A]		Function contents			
	1		[J . C]	Refrigerant circuit and co operation)	ntrol communication line check function (Cooling			
	2		[J . H]	[J . H] Refrigerant circuit and control communication line check function ( operation)				
	3		[P.]	Indoor PMV forced full open function				
2	4	1	[A . 1]	Indoor remote controller discriminating function				
	5		[C . ]	Cooling test operation function				
	6		[H.]	Heating test operation function				
	7		[C . H]	Indoor collective start/stop (ON/OFF) function				
	9		[F.]	Fan test operation function	on			
	11		[r . d]	Outdoor refrigerant recov	very operation function (Pump down function)			
	16		[E . r]	Check code clear function	n			
2	1~16	3	[H.r]	Solenoid valve forced op	en/close function			
2	1~16	4~7	[F.d]	Fan forced operation fund	ction			
2	1~16	15	[t . 0]	Outside temperature sensor manual adjustment function				
		1	[0 1]~[1 6]	Indoor No. 1 to 16 unit	Indoor individual start/stop (ON/OFF) function			
		2	[1 7]~[3 2]	Indoor No. 17 to 32 unit	1			

16	1~16	2	[1 7]~[3 2]	Indoor No. 17 to 32 unit	
10	1~10	3	[3 3]~[4 8]	Indoor No. 33 to 48 unit	
		4	[4 9]~[6 4]	Indoor No. 49 to 64 unit	

SWO	1 SW02	SW03	7-segment display [A/B]	Function contents
1	1	1	[U 1] [ E28 ]	Follower unit check code / Corresponding unit fan operation function

# 7-7-11. Refrigerant leakage detection

The refrigerant leakage can be confirmed by using the switches on Interface PCB of the outdoor unit.

If there is a leak, the location must be found in order to recover the refrigerant. After that, implement appropriate countermeasure and refill the refrigerant to its standard volume.

Refrigerant leaks can be detected by comparing the Actual opening of PMV with the Calculated opening of PMV\* during the operation. \* Calculated opening of PMV: calculated from the initial value(C.i/H.i), the pressure sensor value,

the compressor's rotation speed, and the opening of PMV. The initial values are automatically saved when the specified conditions are met.

(A leak can be detected only when C.i/H.i = 1)

[Operation]

(1) Confirming the refrigerant leakage

Set SW01 to 03 as shown in the following table to confirm whether the leaks are being detected. (It also can be confirmed by remote control monitor function. Refer to 7-7-12. Monitor function of remote controller switch.)

(2) Clearing the initial value

If the system is changed (e.g. indoor units are increased/replaced, outdoor units are moved, or refrigerant is refilled/increased) it is necessary to clear the initial value that had been saved.

Make sure that the compressor has stopped, and then press and hold SW04 for at least 5 seconds.

SW01	SW02	SW03	Display detail					
2	13	14	Refrigerant leakage detection	В	[ L. d ] Normal: [ 0] Possibility of leakage: [ 1] Clear the data: [C.L] (Only Display for 5 seconds)			

(3) Checking the record of the initial value

Set SW01 to 03 as shown in the following table to confirm the record of the initial value.

SW01	SW02	SW03	Display detail					
2	14	14	Cooling initial value	А	[C. i]			
			-	B Incomplete: [ 0]				
					Completed: [ 1]			
2	15	14	Heating initial value	А	[H. i]			
				В	Incomplete: [ 0]			
					Completed: [ 1]			

[Clear]

Return SW01/SW02/SW03 on the Interface PCB in the outdoor unit to [1/1/1] .

NOTE)

(a) During the operation, the slow leaks can be detected.

However, if the air-conditioner cannot cooling down / cannot warming up / make an unusual stop, the slow leaks might not be detectable. The fast leaks always cannot be detected.

(b) Poor refrigerant circulation may be detected as a refrigerant leaks.

(e.g. plugged strainers / capillaries, malfunction / clogging of the PMV / 2-way valve / 4-way valve)

- (c) Due to the outside temperature, the initial value may not be recorded, or it may be impossible to determine the leakage.
- (d) The initial value cannot be saved until the accumulated operating time has reached at least 20 hours.
- (e) The initial value cannot be saved if the indoor unit's operating ratio is low.
- (f) If the following indoor units are connected, leakage determination is not possible.

•Air to air heat exchanger with DX coil unit

# 7-7-12. Monitor Function of Remote Controller Switch

# When using a remote controller with the model name RBC-AMT32E, the following monitor functions can be used.

# Switching to the service monitor mode <Content>

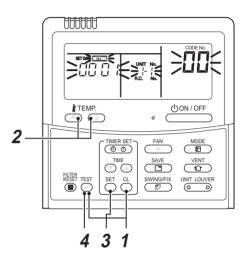
The sensor temperature or operation status of the remote controller, indoor unit, or the outdoor unit can be known by switching to the service monitor mode from the remote controller.

#### [Procedure]

 Push <sup>™</sup> + <sup>a</sup> buttons simultaneously for 4 seconds or more to call up the service monitor mode.

The service monitor goes on, and temperature of the CODE No. 00 is firstly displayed.

- 2 Push the temperature setup → buttons to select the CODE No. to be monitored. For displayed codes, refer to the table next page.
- **3** Push  $\stackrel{\text{set}}{\bigcirc}$  button to determine the item to be monitored. Then monitor the sensor temperature or operation status of indoor unit and the outdoor unit in the corresponding refrigerant line.
- **4** Pushing  $\stackrel{\text{TEST}}{>}$  button returns the display to the normal display.



	CODE No.	Data name	Display format	Unit	Remote controller display example
	00	Room temperature (Use to control)	×1	°C	
*2	01	Room temperature (Remote controller)	×1	°C	
data *	02	Indoor suction air temperature (TA)	×1	°C	
it da	03	Indoor coil temperature (TCJ)	×1	°C	[0024]=24°C
r unit	04	Indoor coil temperature (TC2)	×1	°C	
Indoor	05	Indoor coil temperature (TC1)	×1	°C	
1	06	Indoor discharge air temperature (TF) *1	×1	°C	
	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) <sup>*1</sup>	×1	°C	[0024] = 24°C
	FA	Outside air temperature (TOA) <sup>*1</sup>	×1	°C	
ta	0A	No. of connected indoor units	×1	unit	[0048]=48 units
n data	0B	Total horsepower of connected indoor units	×10	HP	[0415]=41.5HP
System	0C	No. of connected outdoor units	×1	unit	[0003]=3 units
Sy	0D	Total horsepower of outdoor units	×10	HP	[0420]=42HP

	[	CODE No		Data name	Display format	Unit	Remote controller display example
	U1	U2	U3	Data hame	Display Iomat	Unit	Remote controller display example
	10	20	30	High-pressure sensor detention pressure (Pd)	×100	MPa	[0123] = 1.23MPa
ç	11	21	31	Low-pressure sensor detention pressure (Ps)	×100	MPa	[0123] = 1.23MFa
-	12	22	32	Compressor 1 discharge temperature (TD1)	×1	°C	
ata	13	23	33	Compressor 2 discharge temperature (TD2)	×1	°C	
p	15	25	35	Outdoor coil temperature (TE1)	×1	°C	
vidual	16	26	36	Outdoor coil temperature (TE2)	×1	°C	
divid	17	27	37	Outdoor coil temperature (TG1)	×1	°C	
.inc	18	28	38	Outdoor coil temperature (TG2)	×1	°C	[0024] = 24°C
ji ji	19	29	39	Outside ambient temperature (TO)	×1	°C	[0024] - 24 C
2	1A	2A	3A	Suction temperature (TS1)	×1	°C	
8	1C 2C 3C Suction	Suction temperature (TS3)	×1	°C			
Outdo	1D	2D	3D	Temperature at liquid side (TL1)	×1	°C	
0	1E	2E	3E	Temperature at liquid side (TL2)	×1	°C	]
	1F	2F	3F	Temperature at liquid side (TL3)	×1	°C	

		CODE No		Data name	Display format	Unit	Remote controller display example	
	U1	U2	U3	Data fidille	Display Iornat	Unit	Remote controller display example	
	50	60	70	PMV1 opening	×1	pls		
2 *	51	61	71	PMV3 opening	×1	pls	[0500] = 500pls	
ata	52	62	72	PMV4 opening	×1	pls		
ual da	53	63	73	1 fan model : Compressor 1 curent (I1) 2 fan model : Compressor 1 and Outdoor fan 1 current (I1)	×10	А	[0135] = 13.5A	
individu	54	64	74	1 fan model : Compressor 2 and Outdoor fan 1 current (I2) ×10 A 2 fan model : Compressor 2 and Outdoor fan 2 current (I2) ×10 A				
it i	56	66	76	Compressor 1 revolutions	×10	rps	[0642] = 64.2rps	
5	57	67	77	Compressor 2 revolutions	×10	rps		
DO I	59	69	79	Outdoor fan mode	×1	mode	[0058] = 58 mode	
ntdo	5A	6A	7A	Compressor IPDU 1 heat sink temperature	×1	°C		
õ	5B	6B	7B	Compressor IPDU 2 heat sink temperature	×1	°C	[0024] = 24°C	
	5D	6D	7D	Outdoor fan IPDU 1 heat sink temperature	×1	°C		
	5E	6E	7E	Outdoor fan IPDU 2 heat sink temperature	×1	°C	]	
	5F	6F	7F	Outdoor unit horsepower	×1	HP	[0016] = 16HP	

	CODE No.	Data name	Display format	Unit	Remote controller display example
iit a 3 *5	90	Heating/cooling recovery controlled	0: Normal 1: Recovery controlle		[0010]=Heating recovery controlled [0001]=Cooling recovery controlled
ata	91	Pressure release			[0010]=Pressure release controlled
oor al d	92	Discharge temperature release			[0001]=Discharge temperature release controlled
Outd	9.5	Follower unit release (U2/U3 outdoor units)	0: Normal 1: Release controlled	1	[0100]=U2 outdoor unit release controlled [0010]=U3 outdoor unit release controlled [0001]=U4 outdoor unit release controlled

\*1 Only a part of indoor unit types is installed with the discharge air temperature sensor. This temperature is not displayed for other types.
\*2 When the units are connected to a group, data of the header indoor unit only can be displayed.
\*3 The first digit of an CODE No. indicates the outdoor unit number.
\*4 The upper digit of an CODE No. -4 indicates the outdoor unit number.
\*5 ... U1 outdoor unit (Header unit)
2 ... U1 outdoor unit (Header unit)

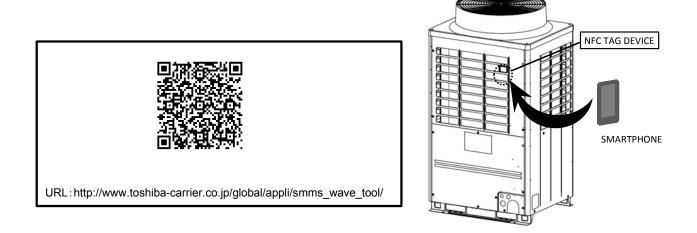
2\*, 6\* ... U2 outdoor unit (Follower unit)
2\*, 6\* ... U2 outdoor unit (Follower unit 1)
3\*, 7\* ... U3 outdoor unit (Follower unit 2)
\*5 Only the CODE No. 9\* of U1 outdoor unit (Header unit) is displayed.

# 7-8. SMMS WAVE TOOL FOR SMARTPHONE

The NFC TAG DEVICE of the Outdoor unit communicates with SMARTPHONE that simplifies the install, the test operation and the maintenance of the SMMS-e. \*NFC (Near Field Communication)

As for the details, refer to the Operation Manual of "SMMS WAVE TOOL FOR SMARTPHONE"

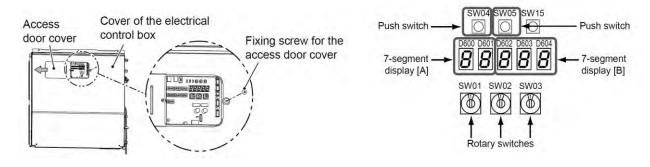
•You can download the Application and the Operating Manual from the below URL or QR code.



### 7-8-1. Prohibition/Permission of the NFC Setting

- This Application enables the functions of the auto-address setup and the test operation of the outdoor unit with Smartphone within 48 hours from the power input to the outdoor unit.
- •You should decide whether to make use of the functions of the auto-address setup and test operation at its own responsibility and also be sure to confirm notices in the Operating Manual before performing the test operation.
- If you want to disable the functions of the auto-address setup and the test operation, perform the following operations.

#### Switch setting of some functions prohibition



#### How to set the NFC operation all time prohibition

Follow the below procedure.

01	F	Rotaly switc	:h	Push switch	7-segment display	NFC operation
Step	SW01	SW02	SW03	SW04	[A] [B]	setting
(1)	2	1	14	-	[nF] [c.00]	(Default setting) After the power input, :below 48 hours [NFC operation permit] :more than 48 hours [NFC operation prohibit]
(2)	2	1	14	Press for more than 5 secs	[nF] [c.01]	NFC operation all time prohibition
(3)	1	1	1	-	[U.1.][]	Return the switch

#### How to set the NFC operation all time permission Follow the below procedure.

Otere	F	Rotaly swite	h	Push switch	7-segment display	NFC operation setting
Step	SW01	SW02	SW03	SW04	[A] [B]	
(1)	2	1	14	-	[nF] [c.00]	(Default setting) After the power input, :below 48 hours [NFC operation permit] :more than 48 hours [NFC operation prohibit]
	2	1	14	(Press 5 secs)	[nF] [c.01]	NFC operation all time prohibition
(2)	2	1	14	Press for more than 10 secs	[nF] [c.02]	NFC operation all time permission
(3)	1	1	1	-	[U.1.][]	Return the switch

\*Do it again if the 7-segment display is different from the above.

\*The functions other than the auto-address setup and test operation of this Application can work normally even if the functions of the auto-address setup and the test operation are disabled.

### 7-8-2. Confirmation for the generation of the error of the NFC

When you can not read out the information of the NFC Tag Device with your Smartphone, perform the following operations after restarting the power supply of the outdoor unit.

If there is no problem, refer to the Operation Manual of "SMMS WAVE TOOL FOR SMARTPHONE".

Stop	F	Rotaly switc	h	Push switch	7-segment display	NFC-I/F board	
Step	SW01	SW02	SW03	SW04	[A] [B]	communication	
(1)	2	16	14		[nF] [c.Er]	Abnormal	
(1)	2	10	14	-	[nF] [c.00]	Normal	
(2)	1	1	1	-	[U.1.][]	Return the switch	

Trademark

Android is a trademark or registered trademark of Google Inc. QR code is a trademark or registered trademark of DENSO WAVE Inc.

# 7-9. DRED (Demand response enabling device) (MMY-MAP\*\*\*6HT8P-A)

This model supports only DRM1.

DRM1 AS/NZS 4755 

### Safety precautions

- Read these "Safety precautions" carefully before installation.
- Install in accordance with the wiring rules (AS/NZS 3000).
- The precautions described below include important items regarding safety. Observe them without fail.
- The manufacturer shall not assume any liability for the damage caused by not observing the description of this manual.

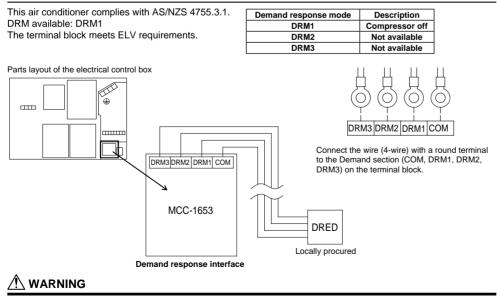
# 🔨 WARNING

- Turn off the main power supply switch or breaker before attempting installation. Make sure all power switches are off. Failure to do so may cause electric shock.
- Connect the connecting wire correctly. If the connecting wire is incorrect, electric parts may be damaged.
- Ensure that all terminals are securely fixed, so preventing any external forces having a negative effect on the terminals.
- Do not connect the DRED mains cable to the terminal block of the outdoor unit. Improper installation may result in fire.
- Connect the demand connecting wires so that they do not come into contact with the refrigerant cycle parts or refrigerant pipes.
- Wire breakage or water intrusion may cause electric shock or fire.
- Do not screw the DRED signal receiver directly to the outdoor unit. The screw may damage the internal parts and cause an electric shock, fire or refrigerant leak.

# ✓ CAUTION

Wear heavy gloves during the installation work to avoid injury.

#### Connection procedure

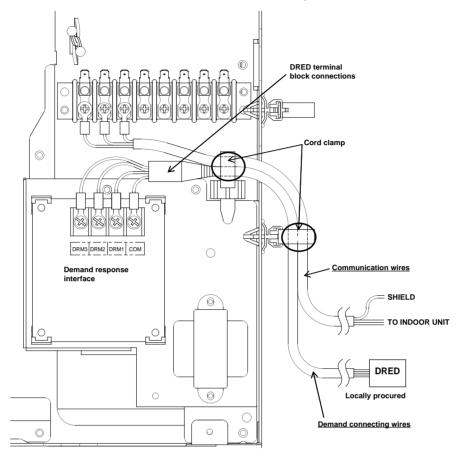


- Do not connect the DRED mains cable to the terminal block of the outdoor unit.

Improper installation may result in fire. For the power supply of the DRED, prepare exclusive power supply separated from that of the outdoor unit.

# ■ Wiring procedure

- Bind securely together the communication wires and the demand connecting wires with the cord clamp to be not affected by external forces.
- If the demand connecting wires contain DRED terminal block connections, confirm to fix it so that DRED terminal block connections comes to the left side from the cord clamp.



# 8 TROUBLESHOOTING

# 8-1. Overview

(1) Before engaging in troubleshooting

- (a) Applicable models
  - All Super Module Multi System (SMMS-e) models.
  - (Indoor units: MM\*-AP\*\*\*, Outdoor units: MMY-MAP\*\*\*6\*)
  - (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)

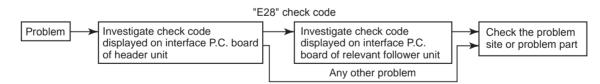
NO.	Behavior	Possible cause
1	A compressor would not start	<ul> <li>Could it just be the 3-minute delay period (3 minutes after compressor shutdown)?</li> <li>Could it just be the air conditioner having gone thermostats OFF?</li> <li>Could it just be the air conditioner operating in fan mode or put on the timer?</li> <li>Could it just be the system going through initial communication?</li> </ul>
2	An indoor fan would not start	<ul> <li>Could it just be cold air discharge prevention control, which is part of heating?</li> </ul>
3	An outdoor fan would not start or would change speed for no reason	<ul> <li>Could it just be cooling operation under low outside temperature conditions?</li> <li>Could it just be defrosting operation?</li> </ul>
4	An indoor fan would not stop	<ul> <li>Could it just be the elimination of residual heat being performed as part of the air conditioner shutdown process after heating operation?</li> </ul>
5	The air conditioner would not respond to a start/stop command from a remote controller	<ul> <li>Could it just be the air conditioner operation under external or remote control?</li> </ul>

# 

The cooling performance may decling considerably when total operating capacity of cooling indoor units is less than 4 HP WHILE AMBIENT TEMPERATURE IS BELOW 0°C.

#### (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.

# 8-2. Troubleshooting Method

The remote controllers (main remote controller and central control remote controller) and the interface P.C. board of an outdoor unit are provided with an LCD display (remote controller) or a 7-segment display (outdoor interface P.C. board) to display operational status. Using this self-diagnosis feature, the problem site/problem part may be identified in the event of a problem 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 problem in consultation with the list.

• When investigating a problem on the basis of a display provided on the indoor remote controller or TCC-LINK central control remote controller -See the "TCC-LINK remote control or main remote controller display" section of the list.

- When investigating a problem on the basis of a display provided on an outdoor unit See the "Outdoor 7-segment display" section of the list.
- When investigating a problem on the basis of a wireless remote controller-controlled indoor unit See the "Light sensor indicator light block" section of the list.

#### List of Check Codes (Indoor Unit) (Check code detected by indoor unit)

IPDU: Intelligent Power Drive Unit (Inverter P.C. board)  $\bigcirc$ : Lighting,  $\bigcirc$ : Flashing, •: Goes off ALT.: Flashing is alternately when there are two flashing LED SIM: Simultaneous flashing when there are two flashing LED

<b>CL</b>	Check code					1 11014		
			•		ceiving	-	-	
TCC-LINK central control or main remote controller display	Outo	loor 7-segment display Sub-code			Ready	Flash	- Typical problem site	Description of Check code
E03	-	_	Ø	•	•		Indoor-remote controller periodic communication error	Communication from remote controller or network adaptor has been lost (so has central control communication).
E04	-	_	•	•	Ø		Indoor-outdoor periodic communication error	Signals are not being received from outdoor unit.
E08	E08	Duplicated indoor address	O				Duplicated indoor address	Indoor unit detects address identical to its own.
E10	-	_	Ø	•	٠		Indoor inter-MCU communication error	MCU communication between main controller and motor microcontroller is faulty.
E18	-	-	0	•	•		Error in periodic communication between indoor header and follower unit	Periodic communication between indoor header and follower units cannot be maintained.
F01	-	-	Ø	Ø	•	ALT	Indoor heat exchanger temperature sensor (TCJ) error	Heat exchanger temperature sensor (TCJ) has been open/short-circuited.
F02	-	-	Ø	Ø	•	ALT	Indoor heat exchanger temperature sensor (TC2) error	Heat exchanger temperature sensor (TC2) has been open/short-circuited.
F03	-	-	Ø	0	•	ALT	Indoor heat exchanger temperature sensor (TC1) error	Heat exchanger temperature sensor (TC1) has been open/short-circuited.
F10	-	_	0	Ø	•	ALT	Room air temperature sensor (TA/TSA) error	Room air temperature sensor (TA) has been open/short-circuited.
F11	-	-	0	0	•	ALT	Discharge air temperature sensor (TF/TFA) error	Discharge air temperature sensor (TF) has been open/short-circuited.
F17	-	-	0	Ø	0	ALT	Outside air suction temperature sensor (TOA) error	Open/Short of outside air suction temperature sensor (TOA) was detected.
F18	-	_	Ø	Ø	0	ALT	Indoor air suction temperature sen sor (TRA) error	Discharge air temperature sensor (TF) has been open/short-circuited.
F29	-	-	Ø	Ø	•	SIM	P.C. board or other indoor error	Open/Short of indoor air suction temperature sensor (TRA) was detected.
L03	-	-	O	•	Ø	SIM	Duplicated indoor group header unit	There is more than one header unit in group.
L07	-	-	Ø	•	Ø	SIM	Connection of group control cable to stand-alone indoor unit	There is at least one stand-alone indoor unit to which group control cable is connected.
L08	L08	-	0	•	Ø	SIM	Indoor group address not set	Address setting has not been performed for one c more indoor units (also detected at outdoor unit end).
L09	-	-	Ø	•	Ø	SIM	Indoor capacity not set	Capacity setting has not been performed for indoc unit.
L20	-	_	O	0	Ø	SIM	Duplicated central control address	There is duplication in central control address setting.
L30	L30	Detected indoor unit No.	O	0	Ø	SIM	Indoor external error input (interlock)	Unit shutdown has been caused by external error input (CN80).
P01	-	_	•	0	Ø	ALT	Indoor AC fan error	Indoor AC fan error is detected (activation of fan motor thermal relay).
P10	P10	Detected indoor unit No.	•	0	Ø	ALT	Indoor overflow error	Float switch has been activated.
P12	-	-	•	0	Ø	ALT	Indoor DC fan error	Indoor DC fan error (e.g. overcurrent or lock-up) i detected.
P31	-	_	0	•	O	ALT	Other indoor unit error	Follower unit cannot be operated due to header ur alarm (E03/L03/L07/L08).

#### (Check code detected by main remote controller)

c	Check co	ode	Display	y of re	eceiving	g unit			
	Outo	loor 7-segment display	Indicator light block				Typical problem site	Description of problem	
Main remote controller		Sub-code	Operation	n Timer	Ready	Flash	rypical problem site		
E01	-	_	Ø	•	•		No master remote controller, faulty remote controller communication (reception)	Signals cannot be received from indoor unit master remote controller has not been set (including two remote controller control).	
E02	-	-	0	•	•		Faulty remote controller communication (transmission)	Signals cannot be transmitted to indoor uni	
E09	-	_	Ø	•	٠		Duplicated master remote controller	Both remote controllers have been set as master remote controller in two remote controller control (alarm and shutdown for header unit and continued operation for follower unit)	

#### (Check code detected by central control device)

Ch	eck co	ode	Display of receiv	ing u	unit			
	Outo	loor 7-segment display	Indicator light	bloc	k	Typical problem site	Description of problem	
TCC-LINK central control		Sub-code	Operation Timer Read		lash	Typical problem site	Description of problem	
C05	-	_				Faulty central control communication (transmission)	Central control device is unable to transmit signal due to duplication of central control device.	
C06	-	-	No indication (when main remote controller also in use)			Faulty central control communication (reception)	Central control device is unable to receive signal.	
-	-	_				Multiple network adapters	Multiple network adapters are connected to remote controller communication line.	
C12	-	_	_			Blanket alarm for general- purpose device control interface	Device connected to general-purpose device control interface for TCC-LINK is faulty.	
P30	-	_	As per alarm unit (see above)			Group control follower unit error	Group follower unit is faulty (unit No. and above detail [***] displayed on main remote controller)	

Note: The same error, e.g. a communication error, 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.

#### List of Check Codes (Outdoor Unit)

(Check code detected by SMMS-e 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 error.

IPDU: Intelligent Power Drive Unit (Inverter P.C. board)  $\bigcirc$ : Lighting,  $\bigcirc$ : Flashing,  $\bigcirc$ : 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 re	ceiving	unit			
	Outdoor 7-segment display	TCC-LINK central control	Indica	ator li	ght blo	ock	Typical problem site	Description of problem
	Sub-code	or main remote controller display	Operation	Timer	Ready	Flash	Typical problem site	Description of problem
E06	Number of indoor units from which signal is received normally	E06	•	•	Ø		Signal lack of indoor unit	Indoor unit initially communicating normally fails to return signal (reduction in number of indoor units connected).
E07	_	(E04)	•	•	Ø		Indoor-outdoor communication circuit error	Signal cannot be transmitted to indoor units (→ indoor units left without communication from outdoor unit).
E08	Duplicated indoor address	(E08)	Ø	•	•		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	Ø	•	•		Automatic address starting error	<ul> <li>Indoor automatic address setting is started while automatic address setting for equipment in other refrigerant line is in progress.</li> <li>Outdoor automatic address setting is started while automatic address setting for indoor units is in progress.</li> </ul>
E15	-	E15	•	•	Ø		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: Overloading 01: Number of units connected	E16	•	•	Ø		Too many indoor units connected/overloading	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	•	•	Ø		Error 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	•	•	0		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	•	•	Ø		Outdoor-outdoor communication transmission error	Signal cannot be transmitted to other outdoor units.
E25	-	E25	•	•	Ø		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	•	•	Ø		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	•	•	Ø		Outdoor follower unit error	Outdoor header unit detects fault relating to follower outdoor unit (detail displayed on follower outdoor unit).
E31	A3-IPDU         Fan-IPDU         A3-IPDU         Fan-IPDU           1         2         1         2         1         2           01         0         1         2         1         2         1         2           02         0         11         0 <td< td=""><td>E31</td><td>•</td><td>•</td><td>Ø</td><td></td><td></td><td>There is no communication between IPDUs (P.C. boards) in inverter box.</td></td<>	E31	•	•	Ø			There is no communication between IPDUs (P.C. boards) in inverter box.
F04	_	F04	Ø	0	0	ALT	Outdoor discharge temperature sensor (TD1) error	Outdoor discharge temperature sensor (TD1) has been open/short-circuited.
F05	-	F05	0	0	0	ALT	Outdoor discharge temperature sensor (TD2) error	Outdoor discharge temperature sensor (TD2) has been open/short-circuited.
F06	01: TE1 02: TE2	F06	0	0	0	ALT	Outdoor heat exchanger liquid side temperature sensor (TE1, TE2) error	Outdoor heat exchanger liquid side temperature sensors (TE1, TE2) have been open/short- circuited.
F07	01: TL1 02: TL2 - 03: TL3	F07	Ø	0	0	ALT		Outdoor liquid temperature sensor (TL1,TL2,TL3) has been open/short-circuited.
F08	-	F08	Ø	0	0	ALT	Outdoor outside air temperature sensor (TO) error	Outdoor outside air temperature sensor (TO) has been open/short-circuited.
F09	01: TG1 02: TG2						Outdoor heat exchanger gas side temperature sensor (TG1, TG2) error	Outdoor heat exchanger gas side temperature sensors (TG1, TG2) have been open/short- circuited.
	•						•	

	Check code		Displa	y of re	ceiving	g unit		
	Outdoor 7-segment display	TCC-LINK	Indic	ator li	ight blo	ock	-	
	Sub-code	central control or main remote controller display	Operation	n Timer	Ready	Flash	<ul> <li>Typical problem site</li> </ul>	Description of problem
F12	01: TS1 03: TS3	F12	0	Ø	0	ALT	Outdoor suction temperature sensor (TS1,TS3) error	Outdoor suction temperature sensor (TS1,TS3) has been open/short-circuited.
F15	-	F15	0	Ø	0	ALT	Outdoor temperature sensor (TE1,TL1) wiring error	Wiring error in outdoor temperature sensors (TE1,TL1) has been detected.
F16	-	F16	O	Ø	0	ALT	Outdoor pressure sensor (Pd, Ps) wiring error	Wiring error in outdoor pressure sensors (Pd, Ps) has been detected.
F23	-	F23	Ø	Ø	0	ALT	Low pressure sensor (Ps) error	Output voltage of low pressure sensor (Ps) is zero.
F24	-	F24	0	Ø	0	ALT	High pressure sensor (Pd) error	Output voltage of high pressure sensor (Pd) is zero or provides abnormal readings when compressors have been turned off.
F31	-	F31	0	0	0	SIM	Outdoor EEPROM error	Outdoor EEPROM is faulty (alarm and shutdown for header unit and continued operation for follower unit)
H05	-	H05	•	0	•		Outdoor discharge temperature sensor (TD1) wiring error	Wiring/installation error or detachment of outdoor discharge temperature sensor (TD1) has been detected.
H06	_	H06	•	0	•		Activation of low-pressure protection	Low pressure (Ps) sensor detects abnormally low operating pressure.
H07	_	H07	•	O	•		Low oil level protection	Temperature sensor for oil level detection (TK1,TK2,TK4,TK5) detects abnormally low oil level.
H08	01: TK1 sensor error 02: TK2 sensor error 04: TK4 sensor error 05: TK5 sensor error	H08	•	Ø	•		Error in temperature sensor for oil level detection (TK1,TK2,TK4,TK5)	Temperature sensor for oil level detection (TK1,TK2,TK4,TK5) has been open/short- circuited.
H15	_	H15	•	0	•		Outdoor discharge temperature sensor (TD2) wiring error	Wiring/installation error or detachment of outdoor discharge temperature sensor (TD2) has been detected.
H16	01: TK1 oil circuit error 02: TK2 oil circuit error 04: TK4 oil circuit error 05: TK5 oil circuit error	H16	•	0	•		Oil level detection circuit error	No temperature change is detected by temperature sensor for oil level detection (TK1,TK2,TK4,TK5) despite compressor having been started.
L04	_	L04	0	0	Ø	SIM	Duplicated outdoor refrigerant line address	Identical refrigerant line address has been assigned to outdoor units belonging to different refrigerant piping systems.
	Number of priority indoor units	L05	0	•	Ø	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	(check code L05 or L06 depending on individual unit)	L06	0	•	Ø	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)	O	•	Ø	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	0	0	Ø	SIM	Outdoor capacity not set	Outdoor unit capacity has not been set (after P.C. board replacement).
L17	-	L17	Ø	0	Ø	SIM	Outdoor model incompatibility error	Old model outdoor unit (prior to 6 series) has been connected.
L23	-	L23	Ø	0	Ø	SIM	SW setting mistake	Bit 3 and 4 of SW17 are turning on.
L28	_	L28	0	0	Ø	SIM	Too many outdoor units connected	More than three outdoor units have been connected.
-	-							· · · · · · · · · · · · · · · · · · ·

	Check code		Display	y of re	ceiving	g unit			
	Outdoor 7-segment display	TCC-LINK central control	Indic	ator li	ght blo	ock	Typical problem site	Description of problem	
	Sub-code	or main remote controller display	Operation	Timer	Ready	Flash			
L29	A3-IPDU         Fan-IPDU         Fan-IPDU         I	L29	0	0	0	SIM	Error in number of IPDUs	There are insufficient number of IPDUs (P.C. boards) in inverter box.	
L30	Detected indoor unit No.	(L30)	Ø	0	Ø	SIM	Indoor external error input (interlock)	Indoor unit has been shut down for external error input in one refrigerant line (detected by indoor unit).	
P03	_	P03	Ø	•	0	ALT	Outdoor discharge (TD1) temperature error	Outdoor discharge temperature sensor (TD1) has detected abnormally high temperature.	
	00: Open phase detected						Open phase/power failure	Open phase is detected when power is turned on.	
P05	01: Compressor 1 02: Compressor 2	P05	Ø	•	0		Inverter DC voltage (Vdc) error MG-CTT error	Inverter DC voltage is too high (overvoltage) or too low (undervoltage).	
P07	01: Compressor 1 02: Compressor 2	P07	Ø	•	Ø	ALT	Heat sink overheating error	Temperature sensor built into IPM (TH) detects overheating.	
P10	Indoor unit No. detected	(P10)	•	Ø	0	ALT	Indoor unit overflow	Indoor unit has been shutdown in one refrigerant line due to detection of overflow (detected by indoor unit).	
P13	-	P13	•	0	Ø	ALT	Outdoor liquid backflow detection error	State of refrigerant cycle circuit indicates liquid backflow operation.	
P15	01: TS condition 02: TD condition	P15	Ø	•	Ø	ALT	Gas leak detection	Outdoor suction temperature sensor (TS1) detects sustained and repeated high temperatures that exceed standard value.	
P17	_	P17	Ø	•	0	ALT	Outdoor discharge (TD2) temperature error	Outdoor discharge temperature sensor (TD2) detects abnormally high temperature.	
P19	P19 Outdoor unit No. detected F		Ø	•	0	ALT	4-way valve reversing error	Abnormality in refrigerating cycle is detected during heating operation.	
P20	-	P20	0	•	Ø	ALT	Activation of high-pressure protection	High pressure (Pd) sensor detects high pressure that exceeds standard value.	

MG-CTT: Magnet contactor

	Check code		Display	of re	ceiving	g unit			
	Outdoor 7-segment display	TCC-LINK central control	Indica	ator I	ight bl	ock	Typical problem site	Description of proplem	
	Sub-code	or main remote controller display	Operation	Timer	Ready	Flash			
F13	01: Compressor 1 02: Compressor 2	F13	Ø	0	0	ALT	Error in temperature sensor built into indoor IPM (TH)	Temperature sensor built into indoor IPM (TH) has been open/short-circuited.	
H01	01: Compressor 1 02: Compressor 2	H01	•	0	•		Compressor breakdown	Inverter current (Idc) detection circuit detects overcurrent.	
H02	01: Compressor 1 02: Compressor 2	H02	•	Ø	•		Compressor error (lockup)	Compressor lockup is detected	
H03	01: Compressor 1 02: Compressor 2	H03	•	Ø	•		Current detection circuit error	Abnormal current is detected while inverter compressor is turned off.	
P04	01: Compressor 1 02: Compressor 2	P04	Ø	•	Ø	ALT	Activation of high-pressure SW	High-pressure SW is activated.	
P07	01: Compressor 1 02: Compressor 2	P07	Ø	•	Ø	ALT	Heat sink overheating error	Temperature sensor built into IPM (TH) detects overheating or has been short-circuited.	
P22	#0:Element short circuit #1:Position detection circuit error #3:Motor lock error #4:Motor current error #C:TH Sensor temperature error #D:TH Sensor short circuit/release error #E:Vdc voltage error *Put in Fan IPDU No. in [#] mark	P22	0	•	Ø	ALT	Outdoor fan IPDU error	Outdoor fan IPDU detects error.	
P26	01: Compressor 1 02: Compressor 2	P26	Ø	•	0	ALT	Activation of IPM short-circuit protection	Short-circuit protection for compressor motor driver circuit components is activated (momentary overcurrent).	
P29	01: Compressor 1 02: Compressor 2	P29	Ø	•	Ø	ALT	Compressor position detection circuit error	Compressor motor position detection error is detected.	

(Check code detected by IPDU featuring in SMMS-e standard outdoor unit - typical examples)

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

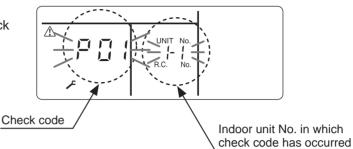
# 8-3. Troubleshooting Based on Information Displayed on Remote Controller

### Using main remote controller (RBC-AMT32E)

#### (1) Checking and testing

When a problem 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) Ckeck code history

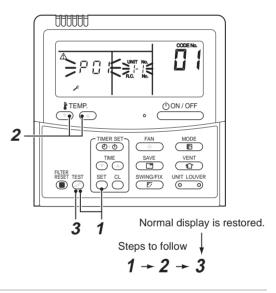
The check code history access procedure is described below (up to four check code stored in memory). Check code history can be accessed regardless of whether the air conditioner is in operation or shut down.

<Procedure> To be performed when system at rest

1 Invoke the SERVICE CHECK mode by pressing the <sup>™</sup>/<sub>●</sub> + <sup>™</sup>/<sub>●</sub> buttons simultaneously and holding for at least 4 seconds. The letters " ✓ SERVICE CHECK" light up, and the check code

"O1" is displayed, indicating the error history. This is accompanied by the indoor unit No. to which the check code history is related and a check code.

- 2 To check other check code history items, press button to select another check code.
  Check code "01" (latest) → Check code "04" (oldest) Note: Check code history contains four items.
- **3** When the  $\textcircled{\scale}$  button is pushed, normal display is restored.



#### REQUIREMENT

Do not push the  $\stackrel{\alpha}{\frown}$  button as it would erase the whole check code history of the indoor unit.

#### How to read displayed information

<7-segment display symbols> <Corresponding alphanumerical letters> 0 1 2 3 4 5 6 7 8 9 А b С d Е F Н J L Ρ

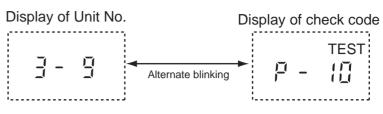
#### Using TCC-LINK central remote controller (TCB-SC642TLE2)(1)

#### Checking and testing

When a problem 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.

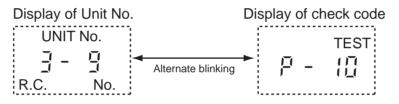


(2) Check code history

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

- **1** Push the  $\overset{\text{rest}}{\frown}$  +  $\overset{\text{set}}{\frown}$  buttons simultaneously and hold for at least 4 seconds.
- 2 The letters "  $\checkmark$  SERVICE CHECK" light up, and the check code "01" is displayed.
- **3** When a group No. is selected (blinking), if there is an check code history, the UNIT No. and the latest check code history information are displayed alternately.

\*During this procedure, the temperature setting feature is unavailable.



- **4** To check other check code history items, push the  $\textcircled{ITEMP.}{\textcircled{ITEMP.}}$  button to select another check code (01-04.).
- 5 To check check code relating to another group, push (ZONE) and (GROUP)  $\lhd \triangleright$  buttons to select a group No.

Do not push the  $\overset{\alpha}{\frown}$  button as it would erase the whole check code history of the selected group.

**6** To finish off the service check, push the  $\overset{\text{\tiny TST}}{\frown}$  button.

### 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 "8-2. Troubleshooting Method".

		•: Go	bes off (): Lighting	ک <sup>−</sup> : Blinking (0.5 seconds)									
Light block	Check code		Cause of fault										
Operation Timer Ready All lights out	_	Power turned off or error in wirin	g between receiving and indoor	units									
Operation Timer Ready	E01	Faulty reception		Error or poor contact in wiring									
	E02	Faulty transmission	Receiving unit	Error or poor contact in wiring between receiving and indoor									
- <u>Q</u> - • •	E03	Loss of communication		units									
Blinking	E08	Duplicated indoor unit No. (addr	ess)	Cotting office									
	E09	Duplicated master remote control	oller	Setting error									
	E10	Indoor unit inter-MCU communic	cation error	1									
	E12	Automatic address starting error											
	E18	Error or poor contact in wiring between indoor units, indoor power turned off											
Operation Timer Ready	E04	Error or poor contact in wiring between indoor and outdoor units loss of indoor-outdoor communication)											
● ● - <u>Ö</u> -	E06	aulty reception in indoor-outdoor communication (Signal lack of indoor unit)											
Blinking	E07	Faulty transmission in indoor-outdoor communication											
Diriking	E15	Indoor unit not found during automatic address setting											
	E16	Too many indoor units connecte	d/overloading										
	E19	Error in number of outdoor head	er units										
	E20	Detection of refrigerant piping communication error during automatic address setting											
	E23	Faulty transmission in outdoor-outdoor communication											
	E25	Duplicated follower outdoor address											
	E26	Faulty reception in outdoor-outdoor communication, Signal lack of outdoor unit											
	E28	Outdoor follower unit error											
	E31	IPDU communication error, sub MCU communication error											
Operation Timer Ready	P01	Indoor AC fan error											
	P10	Indoor overflow error											
	P12	Indoor DC fan error											
Alternate blinking	P13	Outdoor liquid backflow detectio	n error										
Operation Timer Ready	P03	Outdoor discharge (TD1) tempe	rature error										
	P04	Activation of outdoor high-press	ure SW										
Alternate blinking	P05	Open phase/power failure Inverter DC voltage (Vdc) error MG-CTT error											
	P07	Outdoor heat sink overheating e	rror - Poor cooling of electrical c	omponent (IPM) of outdoor unit									
	P15	Gas leak detection - insufficient	refrigerant charging										
	P17	Outdoor discharge (TD2) tempe	rature error										
	P19	Outdoor 4-way valve reversing e	error										
	P20	Activation of high-pressure prote	ection										
	P22	Outdoor fan IPDU error											
	P26	Outdoor IPM short-circuit error											
	P29	Compressor position detection of	ircuit error										
	P31	Shutdown of other indoor unit in	group due to fault (group follow	er unit error)									

MG-CTT: Magnet contactor

Light block		Check code	Cause of fault							
Operation Timer F	Ready	F01	Heat exchanger temperature sensor (TCJ) error							
		F02	Heat exchanger temperature sensor (TC2) error							
-XX-		F03	Heat exchanger temperature sensor (TC1) error	Indoor unit temperature sensor errors						
Alternate blinking		F10	Ambient temperature sensor (TA/TSA) error	enois						
Alternate billiking		F11	Discharge temperature sensor (TF) error							
On another Times T	De e el c	F04	Discharge temperature sensor (TD1) error							
Operation Timer F	Ready	F05	Discharge temperature sensor (TD2) error							
-QQ-		F06	Heat exchanger temperature sensor (TE1, TE2) error							
Alternate blinking	-	F07	Liquid temperature sensor (TL1,TL2,TL3) error	Outdoor unit temperature						
Alternate billiking	-	F08	Outside air temperature sensor (TO) error	sensor errors						
	-	F12	Suction temperature sensor (TS1,TS3) error							
	-	F13	Heat sink sensor (TH) error							
		F15	Wiring error in heat exchanger sensor (TE1) and liquid tempe Outdoor unit temperature sensor wiring/installation error	rature sensor (TL1)						
		F16	Wiring error in outdoor high pressure sensor (Pd) and low pre Outdoor pressure sensor wiring error	essure sensor (Ps)						
	F	F17	Outside air suction temperature sensor (TOA) error							
	-	F18	Indoor air suction temperature sensor (TRA) error							
		F23	Low pressure sensor (Ps) error	Outdoor unit pressure sensor						
	-	F24	High pressure sensor (Pd) error	errors						
	g	F29	Fault in indoor EEPROM							
Operation Timer F	Ready	H01	Compressor breakdown							
		H02	Compressor lockup	Outdoor unit compressor- related errors						
•		H03	Current detection circuit error							
Blinking		H05	Wiring/installation error or detachment of outdoor discharge to	emperature sensor (TD1)						
		H06	Abnormal drop in low-pressure sensor (Ps) reading	Protective shutdown of outdoor						
		H07	Abnormal drop in oil level	unit						
		H08	Error in temperature sensor for oil level detection circuit (TK1	, TK2, TK4 or TK5)						
		H15	Wiring/installation error or detachment of outdoor discharge to	emperature sensor (TD2)						
		H16	Oil level detection circuit error - Error in outdoor unit TK1, TK	2, TK4 or TK5 circuit						
		L02	Outdoor unit model unmatched error							
		L03	Duplicated indoor group header unit							
Operation Timer F	Ready –	L05	Duplicated priority indoor unit (as displayed on priority indoor	unit)						
- <u>Q</u> - • -	·Q-	L06	Duplicated priority indoor unit (as displayed on indoor unit oth	er than priority indoor unit)						
	L	L07	Connection of group control cable to stand-alone indoor unit							
Synchronized blink	king –	L08	Indoor group address not set							
		L09	Indoor capacity not set							
		L04	Duplicated outdoor refrigerant line address							
Operation Timer F	Ready –	L10	Outdoor capacity not set							
- <u>,</u> , O - <u>,</u>	<u>-</u> ,	L17	Outdoor model incompatibility error							
L		L20	Duplicated central control address							
Our change in the second secon	king	L23	SW setting mistake							
Synchronized blink	1									
Synchronized blink	-	L28	Too many outdoor units connected							
Synchronized blink		L28 L29	Too many outdoor units connected Error in number of IPDUs							

Light block	Check code	Cause of fault
Operation Timer Ready	F31	Outdoor EEPROM error

# Other (indications not involving check code)

Light block	Check code	Cause of fault
Operation Timer Ready $- \begin{array}{c} - \\ - \\ - \end{array} \begin{array}{c} - \\ - \\ - \\ - \end{array} - \begin{array}{c} - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - $	_	Test run in progress
Operation Timer Ready O	_	Setting incompatibility (automatic cooling/heating setting for model incapable of it and heating setting for cooling-only model)

# 8-4. Check Codes Displayed on Remote Controller and SMMS-e Outdoor Unit (7-Segment Display on I/F Board) and Locations to Be Checked

		Check code					
Main	Out	door 7-segment display	Location of	Description	System status	Error detection	Check items (locations)
remote controller	Check code	Sub-code	detection			condition(s)	
E01	_	_	Remote controller	Indoor-remote controller communication error (detected at remote controller end)	Stop of corresponding unit	Communication between indoor P.C. board and remote controller is disrupted.	<ul> <li>Check remote controller inter-unit tie cable (A/B).</li> <li>Check for broken wire or connector bad contact.</li> <li>Check indoor power supply.</li> <li>Check for defect in indoor P.C. board.</li> <li>Check remote controller address settings (when two remote controllers are in use).</li> <li>Check remote controller P.C. board.</li> </ul>
E02	-	-	Remote controller	Remote controller transmission error	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.
E03	_	-	Indoor unit	Indoor-remote controller communication error (detected at indoor end)	Stop of corresponding unit	There is no communication from remote controller (including wireless) or network adaptor.	<ul> <li>Check remote controller and network adaptor wiring.</li> </ul>
E04	_	_	Indoor unit	Indoor-outdoor communication circuit error (detected at indoor end)	Stop of corresponding unit	Indoor unit is not receiving signal from outdoor unit.	<ul> <li>Check order in which power was turned on for indoor and outdoor units.</li> <li>Check indoor address setting.</li> <li>Check indoor-outdoor tie cable.</li> <li>Check outdoor terminator resistor setting (SW30, Bit 2).</li> </ul>
E06	E06	No. of indoor units from which signal is received normally	I/F	Signal lack of indoor unit	All stop	Indoor unit initially communicating normally fails to return signal for specified length of time.	<ul> <li>Check power supply to indoor unit. (Is power turned on?)</li> <li>Check connection of indoor-outdoor communication cable.</li> <li>Check connection of communication connectors on indoor P.C. board.</li> <li>Check connection of communication connectors on outdoor P.C. board.</li> <li>Check for defect in indoor P.C. board.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>
-	E07	-	I/F	Indoor-outdoor communication circuit error (detected at outdoor end)	All stop	Signal cannot be transmitted from outdoor to indoor units for 30 seconds continuously.	<ul> <li>Check outdoor terminator resistor setting (SW30, Bit 2).</li> <li>Check connection of indoor-outdoor communication circuit.</li> </ul>

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

	(	Check code					
Main	Out	door 7-segment display	Location of	Description	System status	Error detection	Check items (locations)
remote controller	Check code	Sub-code	detection			condition(s)	
E08	E08	Duplicated indoor address	Indoor unit I/F	Duplicated indoor address	All stop	More than one indoor unit are assigned same address.	<ul> <li>Check indoor addresses.</li> <li>Check for any change made to remote controller connection (group/ individual) since indoor address setting.</li> </ul>
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.)	<ul> <li>Check remote controller settings.</li> <li>Check remote controller P.C. boards.</li> </ul>
E10	_	_	Indoor unit	Indoor inter- MCU communication error	Stop of corresponding unit	Communication cannot be established/maintained upon turning on of power or during communication.	Check for defect in indoor     P.C. board
E12	E12	01: Indoor-outdoor communication 02: Outdoor-outdoor communication	I/F	Automatic address starting error	All stop	<ul> <li>Indoor automatic address setting is started while automatic address setting for equipment in other refrigerant line is in progress.</li> <li>Outdoor automatic address setting is started while automatic address setting for indoor units is in progress.</li> </ul>	<ul> <li>Perform automatic address setting again after disconnecting communication cable to that refrigerant line.</li> </ul>
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.	<ul> <li>Check connection of indoor-outdoor communication line.</li> <li>Check for error in indoor power supply system.</li> <li>Check for noise from other devices.</li> <li>Check for power failure.</li> <li>Check for defect in indoor P.C. board.</li> </ul>
E16	E16	00: Overloading 01-: No. of units connected	I/F	Too many indoor units connected	All stop	<ul> <li>Combined capacity of indoor units is too large.</li> <li>Note:         <ul> <li>If this code comes up after backup setting for outdoor unit failure is performed, perform "No overloading detected" setting.</li> <li>&lt;"No overloading detected" setting method&gt;</li> <li>Turn on SW09/Bit 2 on I/F</li> <li>P.C. board of outdoor header unit.</li> <li>For Cooling Only model, this check code is not displayed even if it exceeds the combined capacity of indoor units.</li> <li>More than 64 indoor units are connected.</li> </ul> </li> </ul>	<ul> <li>Check capacities of indoor units connected.</li> <li>Check combined HP capacities of indoor units.</li> <li>Check HP capacity settings of outdoor units.</li> <li>Check No. of indoor units connected.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>

	(	Check code					
Main	Out	door 7-segment display	Location of	Description	System status	Error detection condition(s)	Check items (locations)
remote controller	Check code	Sub-code	detection		-	condition(s)	
E18	_	_	Indoor unit	Error in communication between indoor header and follower units	Stop of corresponding unit	Periodic communication between indoor header and follower units cannot be maintained.	<ul> <li>Check remote controller wiring.</li> <li>Check indoor power supply wiring.</li> <li>Check P.C. boards of indoor units.</li> </ul>
E19	E19	00: No header unit 02: Two or more header units	I/F	Error in number of outdoor header units	All stop	<ul> <li>There are more than one outdoor header units in one line.</li> <li>There is no outdoor header unit in one line.</li> </ul>	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 defect 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	Outdoor- outdoor communication transmission error	All stop	Signal cannot be transmitted to other outdoor units for at least 30 seconds continuously.	<ul> <li>Check power supply to outdoor units. (Is power turned on?)</li> <li>Check connection of tie cables between outdoor units for bad contact or broken wire.</li> <li>Check communication connectors on outdoor P.C. boards.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> <li>Check termination resistance setting for communication between outdoor units.</li> </ul>
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.	<ul> <li>Backup setting is being used for outdoor units.</li> <li>Check power supply to outdoor unit. (Is power turned on?)</li> <li>Check connection of tie cables between outdoor units for bad contact or broken wire.</li> <li>Check communication connectors on outdoor P.C. boards.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>
E28	E28	Detected outdoor unit No.	I/F	Outdoor follower unit error	All stop	Outdoor header unit receives error code from outdoor follower unit.	<ul> <li>Check check code displayed on outdoor follower unit.</li> <li>Convenient functions&gt; 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 error comes on.</li> <li>If SW04 and SW05 are pressed simultaneously, the fans of normal outdoor units come on.</li> <li>To stop the fan or fans, press SW05 on its own.</li> </ul>

		Check code					
Main	0	utdoor 7-segment display	Location of	Description	System	Error detection	Check items (locations)
remote controller	Check code	Sub-code	detection		status	condition(s)	
E31	E31	A3-IPDU         Fan-IPDU         A3-IPDU         Fan-IPDU           1         2         1         2         1         2           01         0         10         0         0         0           03         0         11         0         0         0           08         0         13         0         0         0           0A         0         18         0         0         0           0B         0         14         0         0         0           0B         0         13         0         0         0           0B         0         18         0         0         0           0B         0         0         14         0         0         0	I/F	IPDU communication error	All stop	Communication is disrupted between IPDUs (P.C. boards) in inverter box.	<ul> <li>Check wiring and connectors involved in communication between IPDU-I/F P.C. board for bad contact or broken wire.</li> <li>Check for defect in outdoor P.C. board (I/F, A3-IPDU or Fan IPDU).</li> <li>Check for external noise.</li> </ul>
		80		Communication error between MCU and Sub MCU	All stop	Communication between MCU and Sub MCU stopped.	<ul> <li>Operation of power supply reset (OFF for 60 seconds or more)</li> <li>Outdoor I/F PC board error check</li> </ul>
F01	_	_	Indoor unit	Indoor TCJ sensor error	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TCJ sensor connector and wiring.</li> <li>Check resistance characteristics of TCJ sensor.</li> <li>Check for defect in indoor P.C. board.</li> </ul>
F02	_	-	Indoor unit	Indoor TC2 sensor error	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TC2 sensor connector and wiring.</li> <li>Check resistance characteristics of TC2 sensor.</li> <li>Check for defect in indoor P.C. board.</li> </ul>
F03	_	_	Indoor unit	Indoor TC1 sensor error	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TC1 sensor connector and wiring.</li> <li>Check resistance characteristics of TC1 sensor.</li> <li>Check for defect in indoor P.C. board.</li> </ul>
F04	F04	-	I/F	TD1 sensor error	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TD1 sensor connector.</li> <li>Check resistance characteristics of TD1 sensor.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>
F05	F05	_	I/F	TD2 sensor error	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TD2 sensor connector.</li> <li>Check resistance characteristics of TD2 sensor.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>
F06	F06	01: TE1 sensor error 02: TE2 sensor error	I/F	TE1/TE2 sensor error	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TE1/ TE2 sensor connectors.</li> <li>Check resistance characteristics of TE1/TE2 sensors.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>
F07	F07	01: TL1 sensor error 02: TL2 sensor error 03: TL3 sensor error	I/F	TL1/TL2/TL3 sensor error	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TL1/ TL2/TL3 sensor connector.</li> <li>Check resistance characteristics of TL1/TL2/ TL3 sensor.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>

		Check code						
Main	Main Outdoor 7-segment display		Location	Description	System	Error detection	Check items (locations)	
remote controller	Check code	Sub-code	detection		status	condition(s)		
F08	F08	_	I/F	TO sensor error	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TO sensor connector.</li> <li>Check resistance characteristics of TO sensor.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>	
F09	F09	01: TG1 sersor error 02: TG2 sersor error	I/F	TG1/TG2 sensor error	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TG1/TG2 sensor connectors.</li> <li>Check resistance characteristics of TG1/TG2 sensors.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>	
F10	_	-	Indoor unit	Indoor TA sensor error	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TA sensor connector and wiring.</li> <li>Check resistance characteristics of TA sensor.</li> <li>Check for defect in indoor P.C. board.</li> </ul>	
F11	-	_	Indoor unit	Indoor TF sensor error	Stop of corresponding unit	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TF sensor connector and wiring.</li> <li>Check resistance characteristics of TF sensor.</li> <li>Check for defect in indoor P.C. board.</li> </ul>	
F12	F12	01: TS1 sersor error 03: TS3 sersor error	I/F	TS1/TS3 sensor error	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TS1/ TS3 sensor connector</li> <li>Check resistance characteristics of TS1/TS3 sensor.</li> <li>Check for defect</li> </ul>	
F13	F13	01: Compressor 1 side 02: Compressor 2 side	IPDU	TH sensor error	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Defect in IPM built-in temperature sensor</li> <li>→ Replace A3-IPDU P.C. board.</li> </ul>	
F15	F15	-	I/F	Outdoor temperature sensor wiring error (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.	<ul> <li>Check installation of TE1 and TL1 sensors.</li> <li>Check resistance characteristics of TE1 and TL1 sensors.</li> <li>Check for outdoor P.C. board (I/F) error.</li> </ul>	
F16	F16	_	I/F	Outdoor pressure sensor wiring error (Pd, Ps)	All stop	Readings of high-pressure Pd sensor and low- pressure Ps sensor are switched. Output voltages of both sensors are zero.	<ul> <li>Check connection of high- pressure Pd sensor connector.</li> <li>Check connection of low- pressure Ps sensor connector.</li> <li>Check for defect in pressure sensors Pd and Ps.</li> <li>Check for error in outdoor P.C. board (<i>I/F</i>).</li> <li>Check for deficiency in compressive output of compressor.</li> </ul>	
F23	F23	_	I/F	Ps sensor error	All stop	Output voltage of Ps sensor is zero.	<ul> <li>Check for connection error involving Ps sensor and Pd sensor connectors.</li> <li>Check connection of Ps sensor connector.</li> <li>Check for defect in Ps sensor.</li> <li>Check for defect in ervice compressive output of compressor.</li> <li>Check for defect in 4-way valve.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> <li>Check for defect in SV4 circuit.</li> </ul>	
F24	F24	-	I/F	Pd sensor error	All stop	Output voltage of Pd sensor is zero (sensor open-circuited). Pd > 4.15MPa despite compressor having been turned off.	<ul> <li>Check connection of Pd sensor connector.</li> <li>Check for defect in Pd sensor.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>	

		Check code					
Main	Ou	tdoor 7-segment display	Location of	Description	System	Error detection	Check items (locations)
remote controller	Check code	Sub-code	detection		status	condition(s)	
F29	-	-	Indoor unit	Other indoor error	Stop of corresponding unit	Indoor P.C. board does not operate normally.	Check for defect in indoor P.C. board (faulty EEPROM)
F31	F31	-	I/F	Outdoor EEPROM error	All stop *1	Outdoor P.C. board (I/F) does not operate normally.	<ul> <li>Check power supply voltage.</li> <li>Check power supply noise.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>
H01	H01	01: Compressor 1 side 02: Compressor 2 side	IPDU	Compressor breakdown	All stop	Inverter current detection circuit detects overcurrent and shuts system down.	<ul> <li>Check power supply voltage. (AC380-415V ± 10%).</li> <li>Check for defect in compressor.</li> <li>Check for possible cause of abnormal overloading.</li> <li>Check for defect in outdoor P.C. board (A3-IPDU).</li> </ul>
H02	H02	01: Compressor 1 side 02: Compressor 2 side	IPDU	Compressor error (lockup) MG-CTT error	All stop	Overcurrent is detected several seconds after startup of inverter compressor.	<ul> <li>Check for defect in compressor.</li> <li>Check power supply voltage. (AC380-415V ± 10%).</li> <li>Check compressor system wiring, particularly for open phase.</li> <li>Check connection of connectors/terminals on A3-IPDU P.C. board.</li> <li>Check conductivity of case heater. (Check for refrigerant problem inside compressor.)</li> <li>Check for defect in outdoor P.C. board (A3-IPDU).</li> <li>Check outdoor MG-CTT.</li> </ul>
H03	H03	01: Compressor 1 side 02: Compressor 2 side	IPDU	Current detection circuit error	All stop	Current flow of at least specified magnitude is detected despite inverter compressor having been shut turned off.	<ul> <li>Check current detection circuit wiring.</li> <li>Check defect in outdoor P.C. board (A3-IPDU).</li> </ul>
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.	<ul> <li>Check installation of TD1 sensor.</li> <li>Check connection of TD1 sensor connector and wiring.</li> <li>Check resistance characteristics of TD1 sensor.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>
H06	H06	_	VF	Activation of low-pressure protection	All stop	Low-pressure Ps sensor detects operating pressure lower than 0.02MPa.	<ul> <li>Check service valves to confirm full opening (both gas and liquid sides).</li> <li>Check outdoor PMVs for clogging (PMV1, 3).</li> <li>Check for defect in SV2 or SV4 circuits.</li> <li>Check for defect in low- pressure Ps sensor.</li> <li>Check indoor filter for clogging.</li> <li>Check valve opening status of indoor PMV.</li> <li>Check refrigerant piping for clogging.</li> <li>Check operation of outdoor fan (during heating).</li> <li>Check for insufficiency in refrigerant quantity.</li> </ul>

MG-CTT: Magnet contactor

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

		Check code						
Main	Out	door 7-segment display	Location of	Description	System status	Error detection	Check items (locations)	
remote controller	Check code	Sub-code	detection		condition(s)			
H07	H07	_	I/F	Low oil level protection	All stop	Operating compressor detects continuous state of low oil level for about 2 hours.	<ul> <li><all in<br="" outdoor="" units="">corresponding line to be checked&gt;</all></li> <li>Check balance pipe service valve to confirm full opening.</li> <li>Check connection and installation of TK1, TK2, TK4, and TK5 sensors.</li> <li>Check resistance characteristics of TK1, TK2, TK4, and TK5 sensors.</li> <li>Check for gas or oil leak in same line.</li> <li>Check for refrigerant problem inside compressor casing.</li> <li>Check SV3A, SV3B, SV3C, SV3D valves for defect.</li> <li>Check oil return circuit of oil separator for clogging.</li> <li>Check oil equalizing circuit for clogging.</li> </ul>	
		01: TK1 sensor error 02: TK2 sensor error 04: TK4 sensor error 05: TK5 sensor error	I/F	Error in temperature sensor for oil level detection	All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TK1 sensor connector.</li> <li>Check resistance characteristics of TK1 sensor.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>	
H08	H08				All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TK2 sensor connector.</li> <li>Check resistance characteristics of TK2 sensor.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>	
					All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TK4 sensor connector.</li> <li>Check resistance characteristics of TK4 sensor.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>	
					All stop	Sensor resistance is infinity or zero (open/short circuit).	<ul> <li>Check connection of TK5 sensor connector.</li> <li>Check resistance characteristics of TK5 sensor.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>	
H15	H15	-	I/F	TD2 sensor miswiring (incomplete insertion)	All stop	Discharge temperature of (TD2) does not increase despite compressor 2 being in operation.	<ul> <li>Check installation of TD2 sensor.</li> <li>Check connection of TD2 sensor connector and wiring.</li> <li>Check resistance characteristics of TD2 sensor.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>	

		Check code						
Main	Outo	loor 7-segment display	Location of	Description	System	Error detection	Check items (locations)	
remote controller	Check code	Sub-code	detection		status	condition(s)		
		01: TK1 oil circuit error 02: TK2 oil circuit error 04: TK4 oil circuit error 05: TK5 oil circuit error	I/F	Oil level detection circuit error	All stop	No temperature change is detected by TK1 despite compressor 1 having been started.	<ul> <li>Check for disconnection of TK1</li> <li>sensor. Check resistance characteristics of TK1 sensor.</li> <li>Check for connection error involving TK1, TK2, , TK4, and TK5 sensors</li> <li>Check for clogging in oil equalizing circuit capillary and faulty operation in check valve.</li> <li>Check for refrigerant entrapment inside compressor.</li> </ul>	
H16	H16					No temperature change is detected by TK2 despite compressor 2 having been started.	<ul> <li>Check for disconnection of TK2</li> <li>sensor. Check resistance characteristics of TK2 sensor.</li> <li>Check for connection error involving TK1, TK2, , TK4, and TK5 sensors</li> <li>Check for clogging in oil equalizing circuit capillary and faulty operation in check valve.</li> <li>Check for refrigerant entrapment inside compressor.</li> </ul>	
						No temperature change is detected by TK4 despite compressor having been started.	<ul> <li>Check for disconnection of TK4</li> <li>sensor. Check resistance characteristics of TK4 sensor.</li> <li>Check for connection error involving TK1, TK2, , TK4, and TK5 sensors</li> <li>Check for clogging in oil equalizing circuit capillary and faulty operation in check valve.</li> <li>Check for refrigerant entrapment inside compressor.</li> </ul>	
						No temperature change is detected by TK5 despite compressor having been started.	<ul> <li>Check for disconnection of TK5</li> <li>sensor. Check resistance characteristics of TK5 sensor.</li> <li>Check for connection error involving TK1, TK2, , TK4, and TK5 sensors</li> <li>Check for clogging in oil equalizing circuit capillary and faulty operation in check valve.</li> <li>Check for refrigerant entrapment inside compressor.</li> </ul>	

	Check code						
Main	Out	door 7-segment display	Location of	Description	System status	Error detection condition(s)	Check items (locations)
remote controller	Check code	Sub-code	detection		-	condition(s)	
L02	L02	-	Indoor unit	Outdoor units model disagreement error	Stop of corresponding unit	In case of different outdoor unit (Not corresponded to Air to Air Heat Exchanger type)	<ul> <li>Check outdoor unit model. (Check whether the outdoor unit corresponds to Air to Air Heat Exchanger type or not.)</li> </ul>
L03	_	_ Indoor unit Duplicated indoor header unit Stop of corresponding unit Intervention of the stop of the		There are more than one header units in group.	<ul> <li>Check indoor addresses.</li> <li>Check for any change made to remote controller connection (group/ individual) since indoor address setting.</li> </ul>		
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)	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 stand- alone indoor unit	Stop of corresponding unit	There is at least one stand- alone 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)
L10	L10	-	I/F	Outdoor capacity not set	All stop	Jumper wire provided on P.C. board for servicing I/F P.C. board has not been removed as required for given model.	Check model setting of P.C. board for servicing outdoor I/F P.C. board.
L20	_	-	Network adaptor Indoor unit	Duplicated central control address	All stop	There is duplication in central control address setting.	<ul> <li>Check central control addresses.</li> <li>Check network adaptor P.C. board .</li> </ul>
L23	_	-	I/F	SW setting mistake	All stop	Outdoor P.C. board (I/F) does not operate normally.	Check switch setting of Bit 3 and 4 of SW17 in outdoor P.C. board (I/F).
L28	B L28 –		I/F	Too many outdoor units connected	All stop	There are more than three outdoor units.	<ul> <li>Check No. of outdoor units connected (Only up to 3 units per system allowed).</li> <li>Check communication lines between outdoor units.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> </ul>

		Check code						
Main	C	Dutdoor 7-segment display	Location	Description	System status	Error detection	Check items (locations)	
remote controller	Check code	Sub-code	detection			condition(s)		
		A3-IPDU         Fan-IPDU         fan-IPDU         fan-IPDU         fan-IPDU           1         2         1         2         1         2         1         2           01         0         10         1         2         1         2           02         0         111         0         0         0         0           03         0         0         113         0         0         0         0           09         0         18         0 </td <td>VF</td> <td>Error in No. of IPDUs</td> <td>All stop</td> <td>Insufficient number of IPDUs are detected when power is turned on.</td> <td><ul> <li>Check model setting of P.C. board for servicing outdoor I/F P.C. board.</li> <li>Check connection of UART communication connector.</li> <li>Check A3-IPDU, fan IPDU, and I/F P.C. board for defect.</li> </ul></td>	VF	Error in No. of IPDUs	All stop	Insufficient number of IPDUs are detected when power is turned on.	<ul> <li>Check model setting of P.C. board for servicing outdoor I/F P.C. board.</li> <li>Check connection of UART communication connector.</li> <li>Check A3-IPDU, fan IPDU, and I/F P.C. board for defect.</li> </ul>	
L29	L29							
L30	L30	Detected indoor address	Indoor unit	External interlock of indoor unit	Stop of corresponding unit	<ul> <li>Signal is present at external error input terminal (CN80) for 1 minute.</li> </ul>	<ul> <li>When external device is connected to CN80 connector:</li> <li>1) Check for defect in external device.</li> <li>2) Check for defect in indoor P.C. board.</li> <li>When external device is not connected to CN80 connector:</li> <li>1) Check for defect in indoor P.C. board.</li> </ul>	
-	L31	-	I/F	Extended IC error	Continued operation	There is part failure in P.C. board (I/F).	Check outdoor P.C. board (I/F).	
P01	_	-	Indoor unit	Indoor fan motor error	Stop of corresponding unit		<ul><li>Check the lock of fan motor (AC fan).</li><li>Check wiring.</li></ul>	
P03	P03	_	I/F	Discharge temperature TD1 error	All stop	Discharge temperature (TD1) exceeds 115°C.	<ul> <li>Check outdoor service valves (gas side, liquid side) to confirm full opening.</li> <li>Check outdoor PMVs (PMV1, 3) for clogging.</li> <li>Check resistance characteristics of TD1 sensor.</li> <li>Check for insufficiency in refrigerant quantity.</li> <li>Check for defect in 4-way valve.</li> <li>Check for leakage of SV4 circuit.</li> <li>Check SV4 circuit (wiring or installation error in SV41 or SV42).</li> </ul>	

Check code							
Main	Ou	tdoor 7-segment display	Location of	Description	System status	Error detection condition(s)	Check items (locations)
remote controller	Check code	Sub-code	detection		510105	condition(s)	
P04	P04	01: Compressor 1 side 02: Compressor 2 side	IPDU	Activation of high- pressure SW			<ul> <li>Check connection of high-pressure SW connector.</li> <li>Check for defect in Pd pressure sensor.</li> <li>Check outdoor service valves (gas side, liquid side) to confirm full opening.</li> <li>Check for defect in outdoor fan motor.</li> <li>Check for defect in outdoor fan motor.</li> <li>Check outdoor PMVs (PMV1, 3) for clogging.</li> <li>Check indoor/outdoor heat exchangers for clogging.</li> <li>Check for short-circuiting of outdoor suction/discharge air flows.</li> <li>Check for defect in outdoor fan system (possible cause of air flow reduction).</li> <li>Check opening status of indoor PMV.</li> <li>Check indoor-outdoor fan system (possible cause of air flow reduction).</li> <li>Check for faulty operation of check valve in discharge pipe convergent section.</li> <li>Check GVS valve circuit.</li> <li>Check SVS valve circuit.</li> <li>Check SVS valve circuit.</li> </ul>
P05	P05	00: 01: Compressor 1 side 02: Compressor 2 side	I/F	Detection of open phase/phase sequence Inverter DC voltage (Vdc) error (compressor) MG-CTT error	All stop	<ul> <li>Open phase is detected when power is turned on.</li> <li>Inverter DC voltage is too high (overvoltage) or too low (undervoltage).</li> </ul>	<ul> <li>Check for defect in outdoor P.C. board (I/F).</li> <li>Check wiring of outdoor power supply.</li> </ul>
P07	P07	01: Compressor 1 side 02: Compressor 2 side	IPDU I/F	Heat sink overheating error	All stop	Temperature sensor built into IPM (TH) is overheated.	<ul> <li>Check power supply voltage.</li> <li>Check outdoor fan system error.</li> <li>Check heat sink cooling duct for clogging.</li> <li>Check IPM and heat sink for thermal performance for faulty installation. (e.g. mounting screws and thermal conductivity)</li> <li>Check for defect in A3-IPDU. (faulty IPM built-in temperature sensor (TH))</li> </ul>
P10	P10	Detected indoor address	Indoor unit	Indoor overflow error	All stop	<ul> <li>Float switch operates.</li> <li>Float switch circuit is open-circuited or disconnected at connector.</li> </ul>	<ul> <li>Check float switch connector.</li> <li>Check operation of drain pump.</li> <li>Check drain pump circuit.</li> <li>Check drain pipe for clogging.</li> <li>Check for defect in indoor P.C. board.</li> </ul>
P12	_	_	Indoor unit	Indoor fan motor error	Stop of corresponding unit	<ul> <li>Motor speed measurements continuously deviate from target value.</li> <li>Overcurrent protection is activated.</li> </ul>	<ul> <li>Check connection of fan connector and wiring.</li> <li>Check for defect in fan motor.</li> <li>Check for defect in indoor P.C. board.</li> <li>Check impact of outside air treatment (OA).</li> </ul>

MG-CTT: Magnet contactor

		Check code						
Main	Out	door 7-segment display	Location of	Description	System status	Error detection	Check items (locations)	
remote controller	Check code	Sub-code	detection			condition(s)		
P13	P13	_	I/F	Outdoor liquid backflow detection error	All stop	<during cooling="" operation=""> When system is in cooling operation, high pressure is detected in follower unit that has been turned off. <during heating="" operation=""> When system is in heating operation, outdoor PMV 1 or 3 continuously registers opening of 300p or less while under superheat control.</during></during>	<ul> <li>Check full-close operation of outdoor PMV (1, 3, 4).</li> <li>Check for defect in Pd or Ps sensor.</li> <li>Check gas balancing circuit (SV2) for clogging.</li> <li>Check balance pipe.</li> <li>Check SV3B circuit for clogging.</li> <li>Check defect in outdoor P.C. board (I/F).</li> <li>Check capillary of oil separator oil return circuit for clogging.</li> <li>Check for leakage of check valve in discharge pipe convergent section.</li> </ul>	
P15	P15	01: TS condition	VF	Gas leakdetection (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 criterion="" error="" judgment=""> In cooling operation: 60°C In heating operation: 40°C</ts>	<ul> <li>Check for insufficiency in refrigerant quantity.</li> <li>Check outdoor service valves (gas side, liquid side) to confirm full opening.</li> <li>Check PMVs (PMV1, 3) for clogging.</li> <li>Check resistance characteristics of TS1 sensor.</li> <li>Check for defect in 4-way valve.</li> <li>Check SV4 circuit for leakage</li> </ul>	
		02: TD condition	VF	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.	<ul> <li>Check for insufficiency in refrigerant quantity.</li> <li>Check PMVs (PMV 1, 3) for clogging.</li> <li>Check resistance characteristics of TD1 and TD2 sensors.</li> <li>Check indoor filter for clogging.</li> <li>Check piping for clogging.</li> <li>Check SV4 circuit (for leakage or coil installation error).</li> </ul>	
P17	P17	_	I/F	Discharge temperature TD2 error	All stop	Discharge temperature (TD2) exceeds 115°C.	<ul> <li>Check outdoor service valves (gas side, liquid side) to confirm full opening.</li> <li>Check outdoor PMVs (PMV1, 3, 4) for clogging.</li> <li>Check resistance characteristics of TD2 sensor.</li> <li>Check for defect in 4-way valve.</li> <li>Check SV4 circuit for leakage.</li> <li>Check SV4 circuit (for wiring or installation error involving SV41 and SV42).</li> </ul>	

		Check code					
Main	Out	door 7-segment display	Location of	Description	System status	Error detection condition(s)	Check items (locations)
remote controller	Check code	Sub-code	detection	•		condition(s)	
P19	P19	Detected outdoor unit No.	I/F	4-way valve reversing error	All stop	Abnormal refrigerating cycle data is collected during heating operation.	<ul> <li>Check for defect in main body of 4-way valve.</li> <li>Check for coil defect in 4- way valve and loose connection of its connector.</li> <li>Check resistance characteristics of TS1 and TE1,TE2 sensors.</li> <li>Check output voltage characteristics of Pd and Ps pressure sensors.</li> <li>Check for wiring error involving TE1 and TL1 sensors.</li> </ul>
P20	P20		VF	Activation of high-pressure protection	All stop	<during cooling="" operation=""> Pd sensor detects pressure equal to or greater than 3.85 MPa.Ouring heating operation&gt; Pd sensor detects pressure equal to or greater than 3.6 MPa.</during>	<ul> <li>Check for defect in Pd pressure sensor.</li> <li>Check service valves (gas side, liquid side) to confirm full opening.</li> <li>Check for defect in outdoor fan.</li> <li>Check for defect in outdoor fan motor.</li> <li>Check outdoor PMV (PMV1, 3, 4) for clogging.</li> <li>Check indoor/outdoor heat exchangers for clogging.</li> <li>Check for short-circuiting of outdoor suction/ discharge air flows.</li> <li>Check for defect in outdoor P.C. board (I/F).</li> <li>Check for defect in indoor fan system (possible cause of air flow reduction).</li> <li>Check opening status of indoor PMV.</li> <li>Check indoor-outdoor communication line for wiring error.</li> <li>Check gas balancing SV4 valve circuit.</li> <li>Check for refirgerant overcharging.</li> </ul>

	Check code						
Main	Ou	tdoor 7-segment display	Location	Description	System status	Error detection	Check items (locations)
remote controller	Check code	Sub-code	detection	•		condition(s)	
		#0:Element short circuit	IPDU	Outdoor fan IPDU error *Put in Fan IPDU No. in [#] mark	All stop	(Sub code: #0) Fan IPDU over current protection circuit Flow of current equal to or greater than the specified value is detected during startup of the fan.	<ul> <li>Check fan motor.</li> <li>Check for defect in fan IPDU P.C. board.</li> </ul>
		#1:Position detection circuit error	-		All stop	(Sub code: #1) Fan IPDU position detection circuit Position detection is not going on normally.	Check fan motor.     Check connection of fan motor connector.     Check for defect in fan IPDU P.C. board.
P22	P22	#3:Motor lock error			All stop	(Sub code: #3) Gusty wind, an obstruction, or another external factor Speed estimation is not going on normally.	Check fan motor.     Check for defect in fan IPDU     P.C. board.
		#4:Motor current error			All stop	(Sub code: #4) Fan IPDU over current protection circuit Flow of current equal to or greater than the specified value is detected during operation of the fan.	<ul> <li>Check fan motor.</li> <li>Check connection of fan motor connector.</li> <li>Check for defect in fan IPDU P.C. board.</li> </ul>
		#C:TH sensor temperature error			All stop	(Sub code: #C) Higher temperature than the specified value is detected during operation of the fan.	Check fan motor.     Check for defect in fan IPDU     P.C. board.
		#D:TH sensor short circuit/release error			All stop	(Sub code: #D) The resistance value of the sensor is infinite or zero (open or short circuit).	Check for defect in fan IPDU P.C. board.
		#E:Vdc voltage error			All stop	(Sub code: #E) Fan IPDU DC voltage protection circuit The DC voltage higher or lower than the specified value is detected.	<ul> <li>Check power voltage of the main power supply.</li> <li>Check for defect in fan IPDU P.C. board.</li> <li>Check connection of fan IPDU P.C. board.</li> </ul>
P26	P26	01: Compressor 1 side 02: Compressor 2 side	IPDU	IPM short- circuit protection error	All stop	Overcurrent is momentarily detected during startup of compressor.	<ul> <li>Check connector connection and wiring on A3-IPDU P.C. board.</li> <li>Check for defect in compressor (layer short- circuit).</li> <li>Check for defect in outdoor P.C. board (A3- IPDU).</li> </ul>
P29	P29	01: Compressor 1 side 02: Compressor 2 side	IPDU	Compressor position detection circuit error	All stop	Position detection is not going on normally.	<ul> <li>Check wiring and connector connection.</li> <li>Check for compressor layer short-circuit.</li> <li>Check for defect in A3- IPDU P.C. board.</li> </ul>
P31	-	-	Indoor unit	Other indoor error (group follower unit error)	Stop of corresponding unit	There is error in other indoor unit in group, resulting in detection of E07/L07/L03/ L08.	Check indoor P.C. board.

	(	Check code					
Main	Out	door 7-segment display	Location of	Description	System status	Error detection condition(s)	Check items (locations)
remote controller		Sub-code	detection			contantion(3)	
C05	_		TCC-LINK	TCC-LINK central control device transmission error	Continued operation	Central control device is unable to transmit signal.	<ul> <li>Check for defect in central control device.</li> <li>Check for defect in central control communication line.</li> <li>Check termination resistance setting.</li> </ul>
C06	_			TCC-LINK central control device reception error	Continued operation	Central control device is unable to receive signal.	<ul> <li>Check for defect in central control device.</li> <li>Check for defect in central control communication line.</li> <li>Check terminator resistor setting.</li> <li>Check power supply for devices at other end of central control communication line.</li> <li>Check defect in P.C. boards of devices at other end of central control communication line.</li> </ul>
C12	_		General- purpose device I/F	Batch alarm for general- purpose device control interface	Continued operation	Error signal is input to control interface for general-purpose devices.	Check error input.
P30	Differs according to nature of alarm-causing error		TCC-LINK	Group control follower unit error	Continued operation	Error 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 disp	played.)		Duplicated central control address	Continued operation	There is duplication in central control addresses.	Check address settings.

# Check codes Detected by TCC-LINK Central Control Device

# ▼ 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 IPDU P.C. board (A3-IPDU). (Be sure to remove all the leads.)
- (3) Turn on the power supply and start cooling or heating operation.

Be careful not to make simultaneous contact with two or more faston connectors for compressor leads or a faston connector and some other object (e.g. the unit cabinet).

(4) Check the output voltage across each pair of inverter-side (CN201, 202, 203).

If the result is unsatisfactory according to the judgment criteria given in the table below, replace the IPDU P.C. board.

No.	Measured leads	Criterion			
1	Red-White	380~580V			
2	White-Black	380~580V			
3	Black-Red	380~580V			

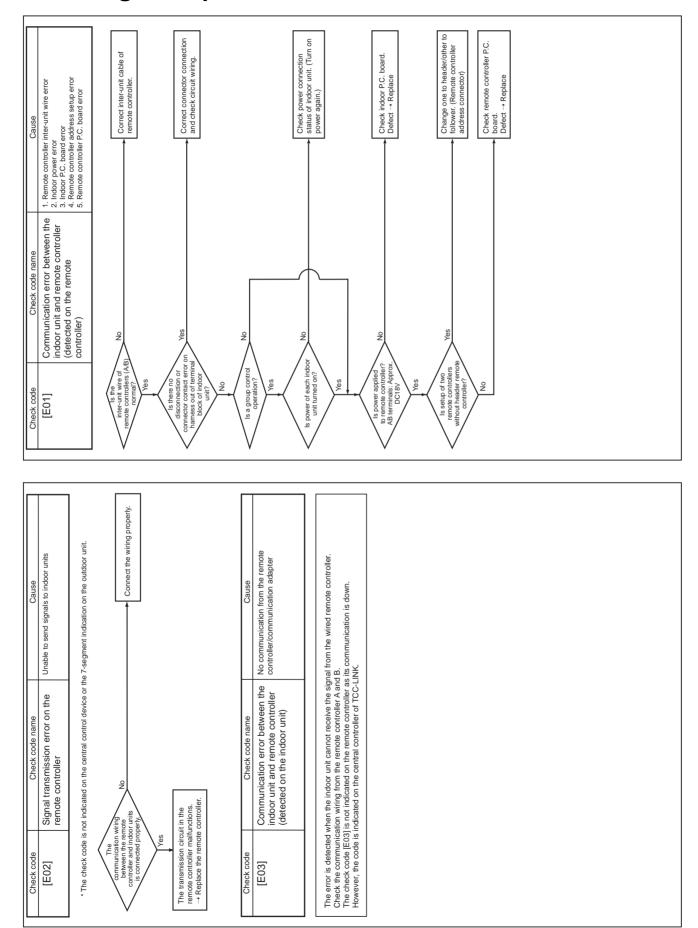
\* When connecting the compressor leads back to the compressor terminals after checking the output, check the faston connectors thoroughly to ensure that they are not crooked. If there is any loose connector, tighten it with a pair of pliers, etc. before connecting the lead.

#### ▼ How to Check Resistance of Compressor Winding

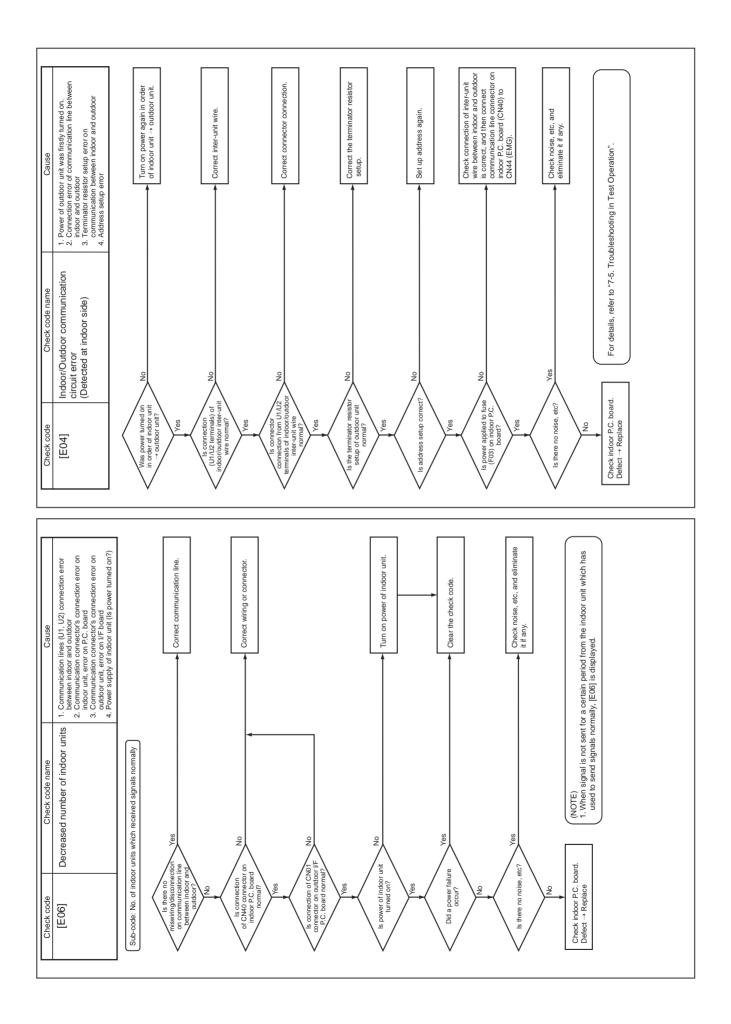
- (1) Turn off the power supply.
- (2) Remove compressor leads from the compressors.
- (3) With each compressor, check the phase-to-phase winding resistances and winding-to-outdoor cabinet resistance using a multimeter.
  - Earth fault?
    - $\rightarrow$  It is normal if the winding-to-outdoor cabinet resistance is 10M $\Omega$  or more.
  - Inter-winding short circuit?
    - $\rightarrow$ It is normal if the phase-to-phase resistances are in the 0.1-1.0 $\Omega$  range. (Use a digital multimeter.)

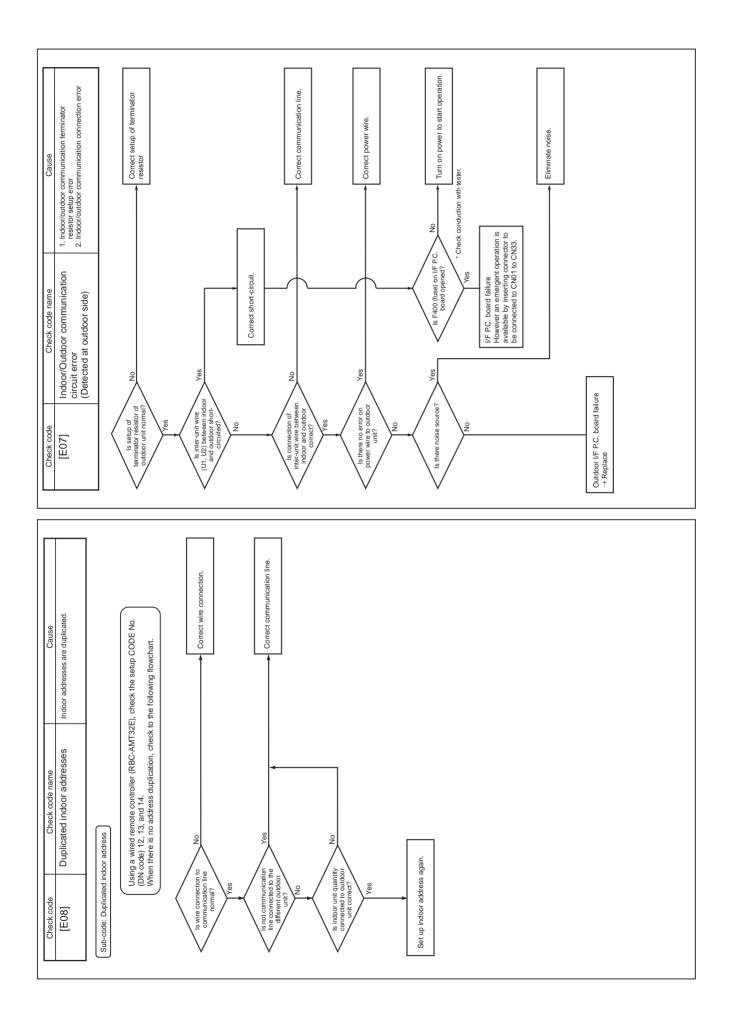
## ▼ How to Check Outdoor Fan Motor

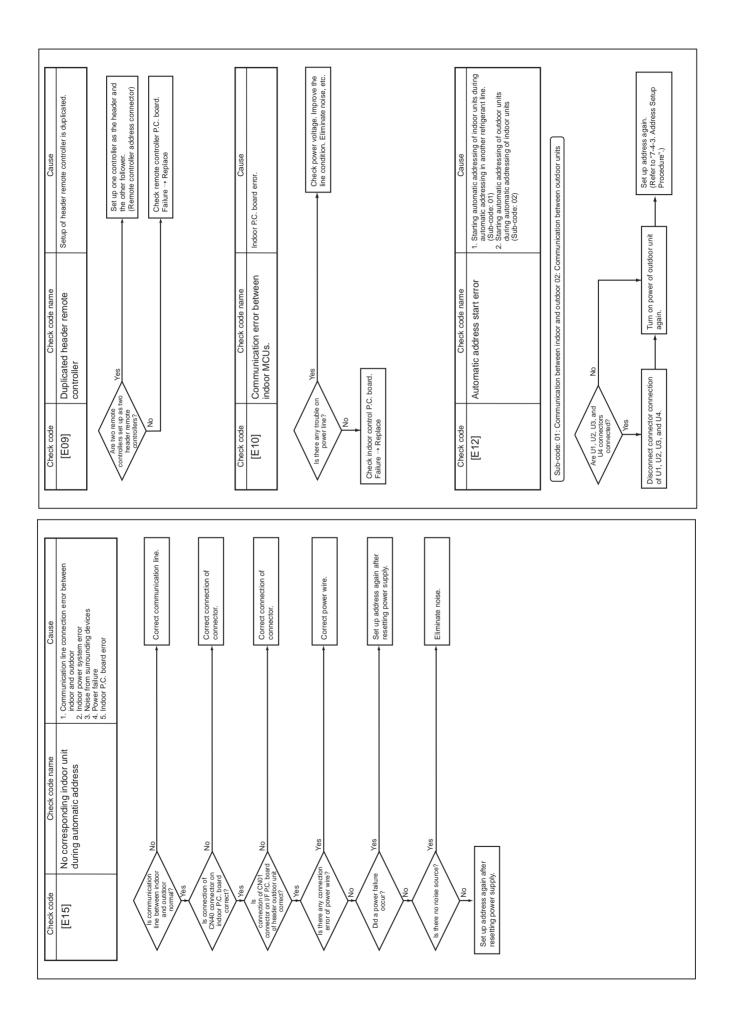
- (1) Turn off the power supply.
- (2) Remove fan motor leads from the IPDU P.C. board for the outdoor fan (CN301-CN303).
- (3) Rotate the fan by hand. If the fan does not turn, the fan motor is faulty (locked up). Replace the fan motor. If the fan turns, measure the phase-to-phase winding resistances using a multimeter. It is normal if the measurements are in the  $8.1-9.9\Omega$  range. (Use a digital multimeter.)

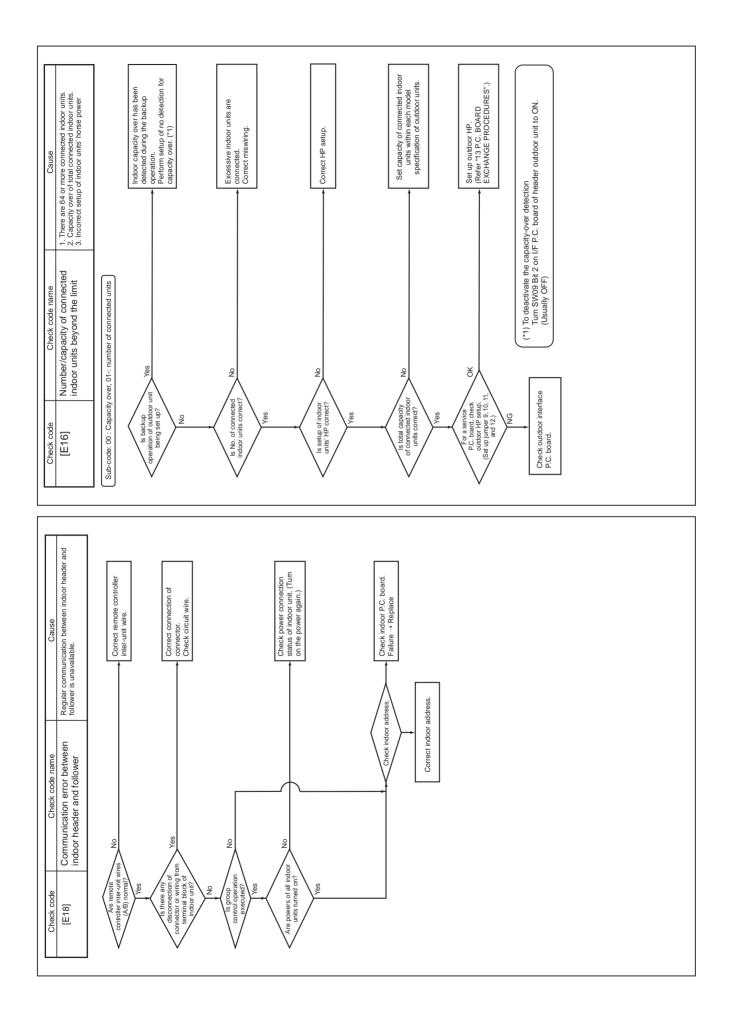


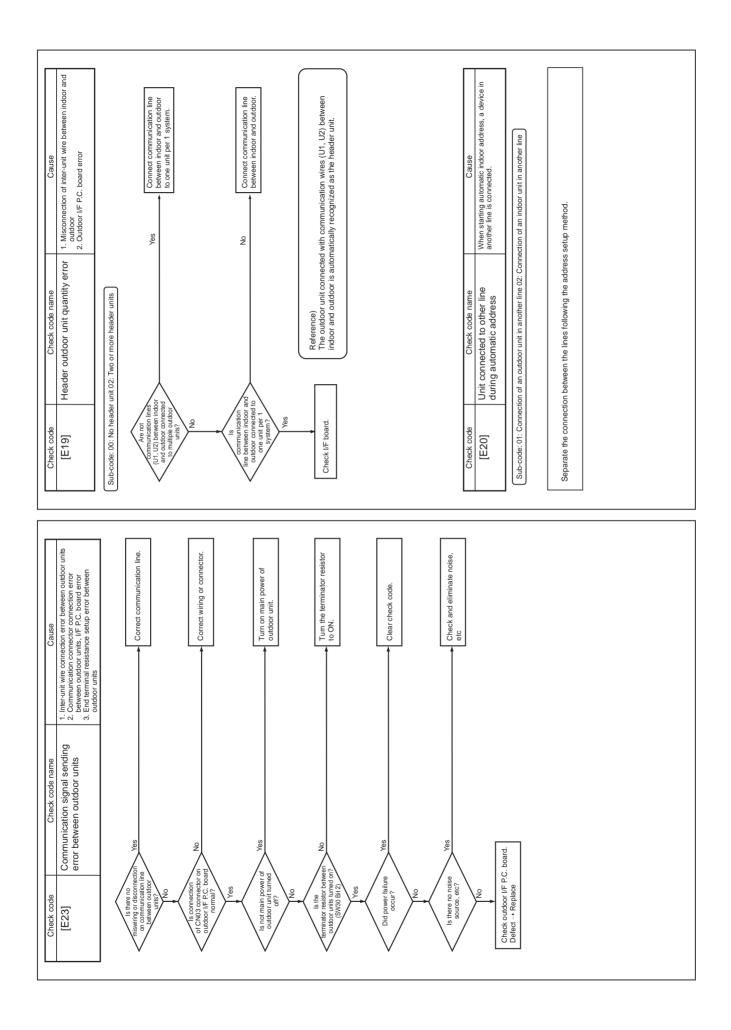
# 8-5. Diagnosis procedure for each check code

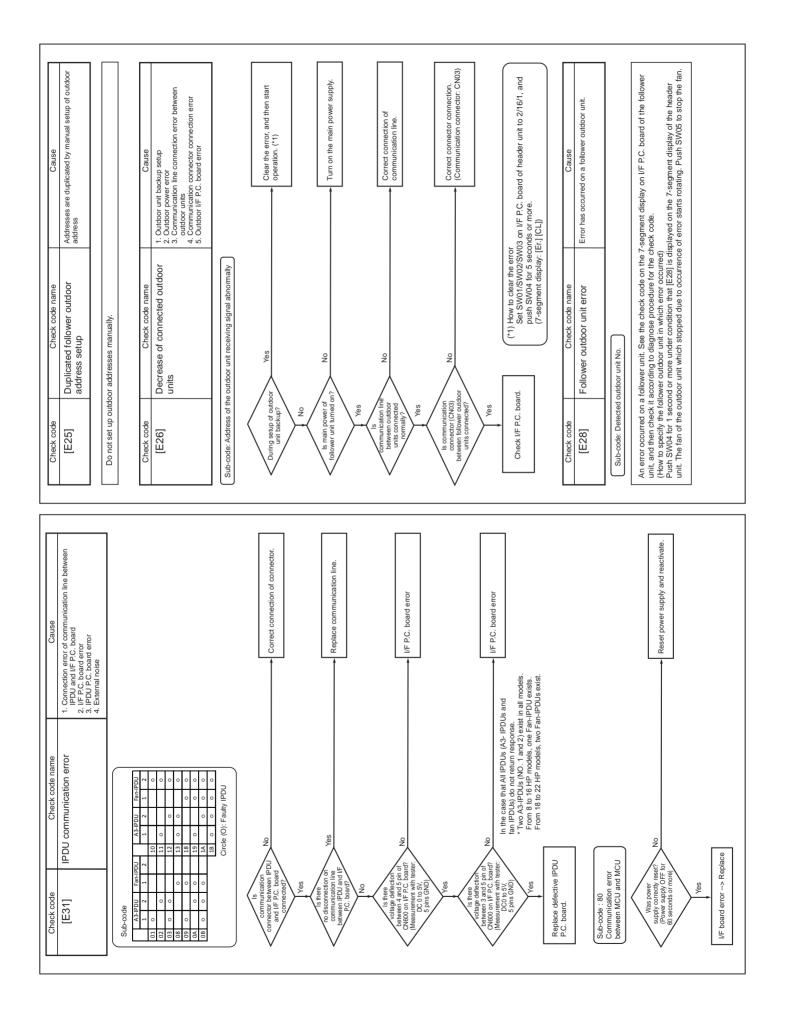






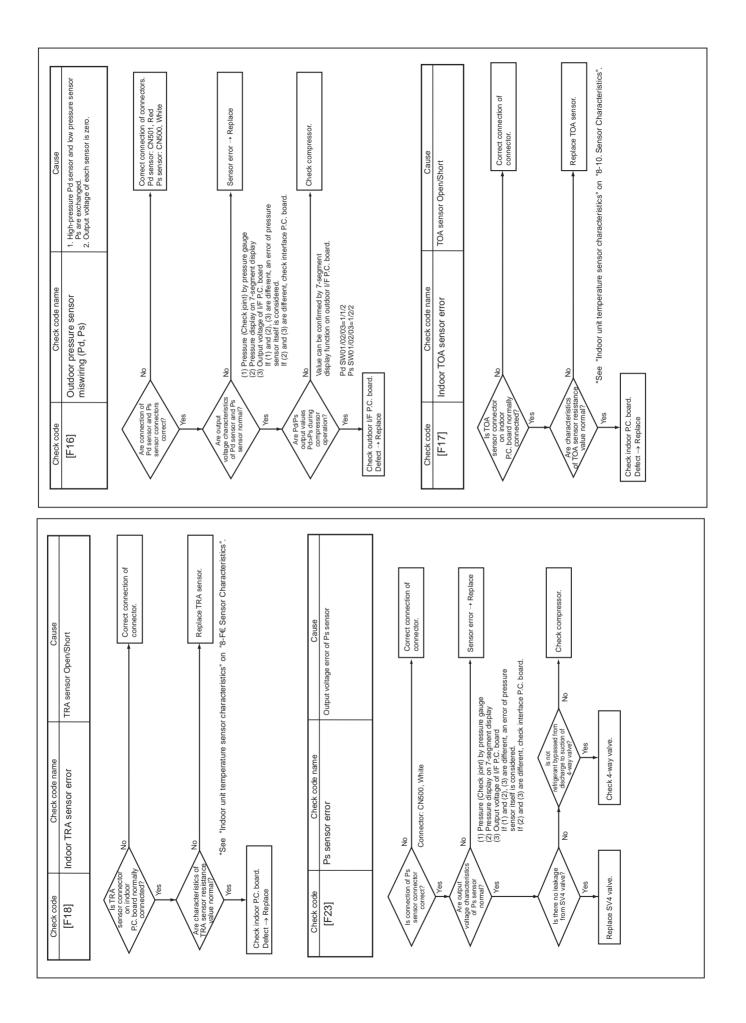




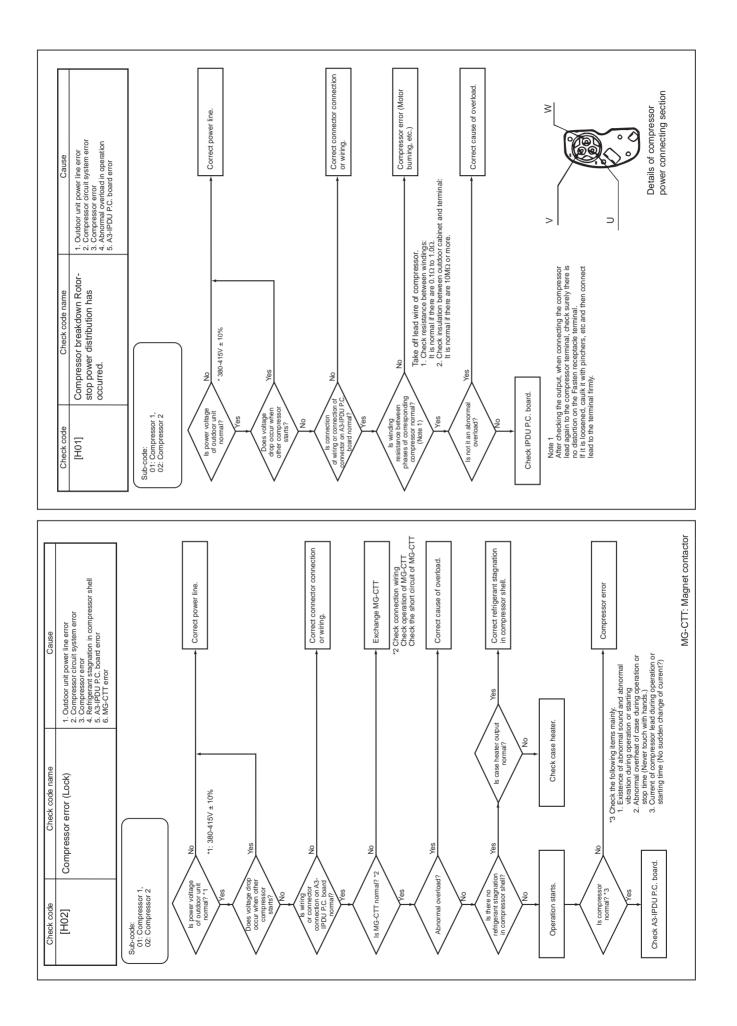


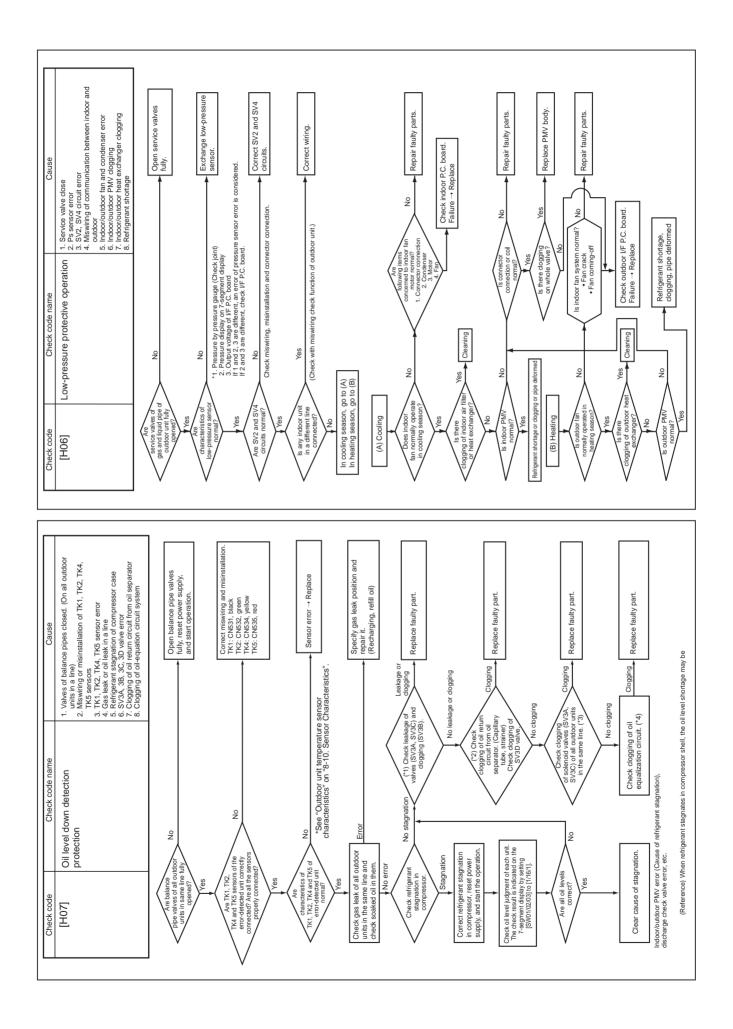
Check code         Check code name         Cause           [F01]         Indoor TCJ sensor error         TCJ sensor Open/Short	Is TCJ Renact connection of P.C. based nomicor P.C. based nomic	↓ Check indoor P.C. board. Defect → Replace	Check code       Check code name       Cause         [F02]       Indoor TC2 sensor error       TC2 sensor Open/Short         Sarest connection Mode and PC. bear connection Mode and the connection of PC. bear connection of the characteristics of Not the characteristics of	
Check code         Check code name         Cause           [F03]         Indoor TC1 sensor error         TC1 sensor Open/Short	(CN101: Bis TC1 Reserved normally P.C. baard normally Connection P.C. baard normally Connection Are characteristics No Are characteristics No Volta enormal? *See "Indoor unit temperature sensor characteristics" on "8-10. Sensor Characteristics".	Check indoor main P.C. board. Defect → Replace	Check code         Check code         Cause         Cause           [F04]         TD1 sensor error         TD1 sensor error         TD1 sensor code means detection of Open/Short of TD1 sensor. Check disconnection of circuit for connection of termperature sensor characteristics." on "9-10. Sensor resistance value. (See "Outdoor unit termperature sensor characteristics" on "9-10. Sensor resistance value. (See "Outdoor unit termperature sensor characteristics" on "9-10. Sensor resistance value. (See "Outdoor unit termperature sensor resistance outdoor I/F P.C. board. <ul> <li>Check code</li> <li>Check code</li> <li>Check code</li> <li>TD2 sensor Characteristics")</li> </ul> <ul> <li>Check code</li> <li>TD2 sensor for TD2 sensor characteristics of sensor resistance value. (See "Outdoor unit termperature sensor characteristics")</li> </ul> TD2 sensor I/F P.C. board.         TD2 sensor for and the code name terror code means detection of Open/Short of TD2 sensor. Check disconnection of circuit for connection of iccuit iccu	Check code         Check code name         Cause           [F06]         TE1, TE2 sensor error         TE1, TE2 sensor Open/Short           This error code means detection of Open/Short of TE1 sensor. Check disconnection of circuit for connection of connector (TE1 sensor. CN520, Green, TE2 sensor. CN520, Green, TE2 sensor. CN520, Green, TE2 sensor. CN521, Red) and characteristics of sensor resistance value. (See "Outdoor unit temperature sensor characteristics", on "8-10. Sensor Characteristics", if sensor is normal, replace outdoor UF P.C. board.

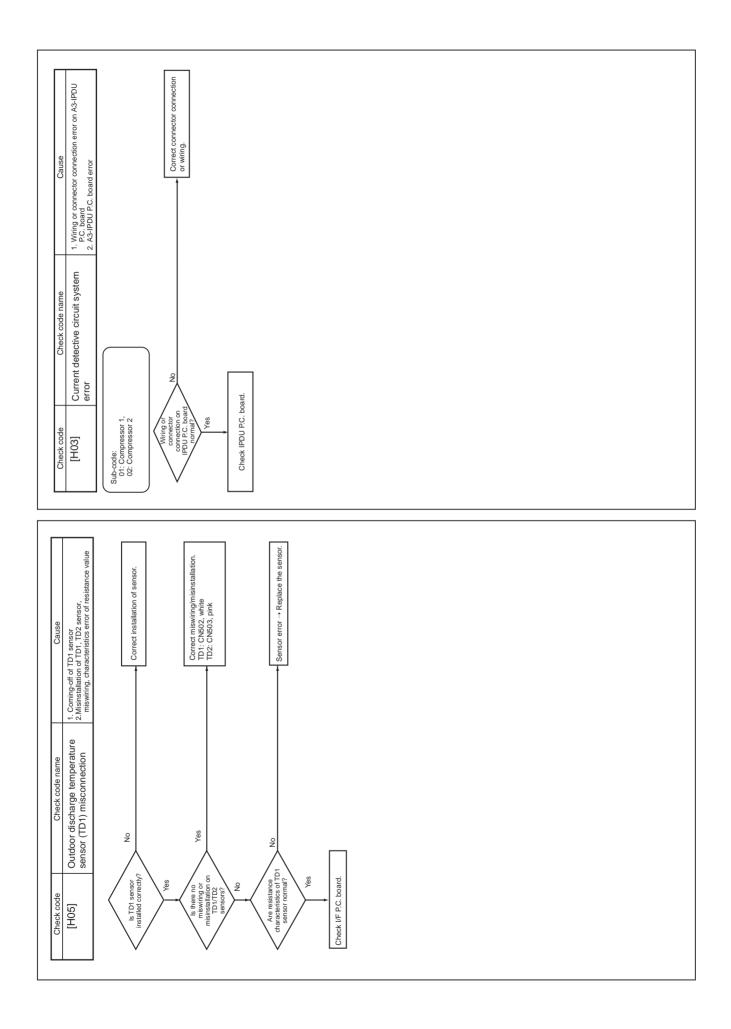
Cause TL1.TL2.TL3 sensor Oben/Short		This error code means detection of Open/Short of TL1, TL2, TL3 sensor. Check disconnection of circuit for connection of connector (TL1 sensor: CN523WHI, TL2 sensor: CN524 GRY, TL3 sensor: CN902 PNK) and tratacteristics of sensor resistance value. (See "Outdoor unit temperature sensor characteristics" on "8-10. Sensor Characteristics")		TO sensor Open/Short	This error code means detection of Open/Short of TO sensor. Check disconnection of circuit for connection of connector (TO sensor: CN507, Yellow) and characteristics of sensor resistance value. (See "Outdoor unit temperature sensor characteristics" on "8-10. Sensor Characteristics".) If sensor is normal, replace outdoor <i>I/F</i> P.C. board.	Cause	TG1, TG2 sensor Open/Short		nsor. Check disconnection of circuit for : CN528 WHJ and characteristics of r characteristics" on "8-10. Sensor	Cause	TA sensor Open/Short	This error code means detection of Open/Short 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 temperature sensor characteristics" on "8-10. Sensor Characteristics".) If sensor is normal, replace indoor P.C. board.	Cause	TS1,TS3 sensor Open/Short		This error code means detection of Open/Short of TS1, TS3 sensor. Check disconnection of circuit for connection of connector (TS1 sensor: CN805 WH, TS3 sensor: CN805 JUR) and characteristics of sensor resistance value. (See "Outdoor unit temperature sensor characteristics" on "8-10. Sensor Characteristics",) f sensor is normal, replace outdoor <i>I/F</i> P.C. board.
Check code name T1 1 1 2 TI 3 censor error		is detection of Open/Short of TL1, TL2, TL2, 200 (TL1 sensor: Stor (TL1 sensor: CN523WHI, TL2 sensor: sor resistance value. (See "Outdoor unit tess".)	sensor is normal, repláce outdoor I/F P.C. board.	Check code name TO sensor error	s detection of Open/Short of TO sensor. C : CN507, Yellow) and characteristics of ser haracteristics" on "9-10. Sensor Characteri place outdoor I/F P.C. board.	Check code name	TG1, TG2 sensor error	G2	This error code means detection of Open/Short of TG1, TG2 sensor. Check disconnection of circuit for connection of connector (TG1 sensor: CN825 BLU, TG2 sensor: CN526 WH) and characteristics of sensor resistance value. (See "Outdoor unit temperature sensor characteristics" on "8-10. Sensor Characteristics".) If sensor is normal, replace outdoor I/F F.C. board.	Check code name	Indoor TA/TSA sensor error	s detection of Open/Short of TA sensor. C rensor: CN104, Yellow) and characteristics haracteristics" on "8-10, Sensor Character place indoor P.C. board.	Check code name	TS1,TS3 sensor error	S3	s detection of Open/Short of TS1,TS3 sen rsor: CN505 WH, TS3 sensor: CN903 PUF merature sensor characteristics" on "s-10 pplace outdoor //F P.C. board.
Check code	Sub-code: 01:TL1, 02;TL2, 03;TL3	This error code mean connection of connec characteristics of sen Sensor Characteristic	If sensor is normal, re	Check code [F08]	This error code means connector (TO sensor temperature sensor ch If sensor is normal, rej	Check code	[F09]	Sub-code: 01: TG1, 02: TG2	This error code means connection of connect sensor resistance valu Characteristics", ) If sensor is normal, ret	Check code	[F10]	This error code mean connector (TA /TSA s temperature sensor cl If sensor is normal, re	Check code	[F12]	Sub-code: 01:TS1, 03:TS3	This error code mean of connector (TS1 ser (See "Outdoor unit ten If sensor is normal, re
Cause IPM built-in sensor error in A3-IPDU			Cause	<ol> <li>Misinstallation and misconnection of TE1 sensor and TL1 sensor</li> <li>Resistance characteristics error of TE1 sensor and TL1 sensor</li> <li>Outdoor PC, board (UF) error</li> </ol>	Correct installed positions of TE1 sensor and TL1 sensor.			Correct connection of connectors.		Correct connection of	See "Outdoor unit temperature sensor characteristics" on "8-10. Sensor Characteristics".					
Check code name TH sensor error	ITT SETISOL ELLOL 301 1, 02: Compressor 2	This error code means IPM built-in temperature sensor error. If sensor is normal, replace IPDU P.C. board.	Check code name	Outdoor temp sensor miswiring (TE1, TL1)	S S S S S S S S S S S S S S S S S S S	Outdoor I/F P.C. board TF1 sensor - CN520, Green	TL1 sensor : CN523, White	stor No ctor	Υ.	I No	*See "Outdoor unit temperature sensor c	↓ teck outdoor \/F P.C. board. sfect → Replace TE1 sensor: Outdoor heat exchanger temp sensor TL1 sensor: Temp sensor between liquid tank of outdoor PMV				
Check code	Compress	This error code means   If sensor is normal, rep	Check code	[F15]	Are installed positions of TE1 sensor and TL1 sensor contect?	Kes	-<	Are connection of TE1 sensor connector and TL1 sensor connector	Ves	Are resistance characteristics of TL1 sensor and TF1 sensor	normal? Yes	Check outdoor I/F P.C. board. Defect - Asplace TE1 sensor: Outdoor heat 6 TL1 sensor: Temp sensor b				



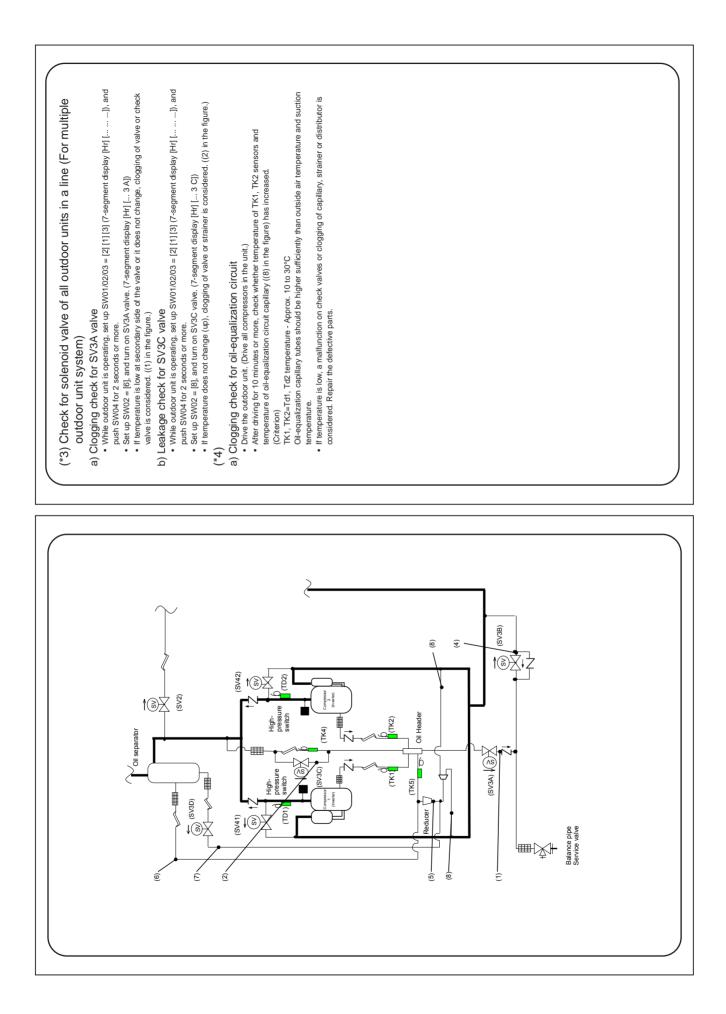
United	Output voltage error of Pd sensor	connection of connector (Pd sensor: CN501, red)	
Charle Anda Charle Anda nama	Pd sensor	It is output voltage error of Pd sensor. Check disconnection of connection of connector (Pd sensor: CN501, red) circuit and output voltage of sensor. If the sensor is normal, replace outdoor UF P.C. board.	
		(ese)	ise, etc.) e and line.
Cause	Indoor P.C. board error	IC10 non-volatile memory (EEPROM) on or it is absolutely impossible to read/write LED (D02) 1Hz — Reboot (Reset) flaster for approx. 10 seconds on indoor unit P.C. board.	Cause 1. Outdoor I/F P.C. board error 2. Outdoor I/F P.C. board error Check power voltage and line. Check external noise, etc.
Check code name	Indoor other error	This error 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. (Approx.3 minutes) (Approx.1 minute) (Approx.3 minutes) (Approx.1 minute) (Power ON) (Bashelo for approx.1 minute) (Power ON) (Bashelo for approx.1 minute) (Repetition) (Repetition) (Repetition)	Check code name Outdoor EEPROM error
Check code	[F29]	This error is detected di indoor unit P.C.board. R * If EEPROM was not ir EEPROM data, the aut (Approx. 3 minutes) (Power ON)	Check code [F31] C a toutdoor unit power supply Check I/F P.C. board.

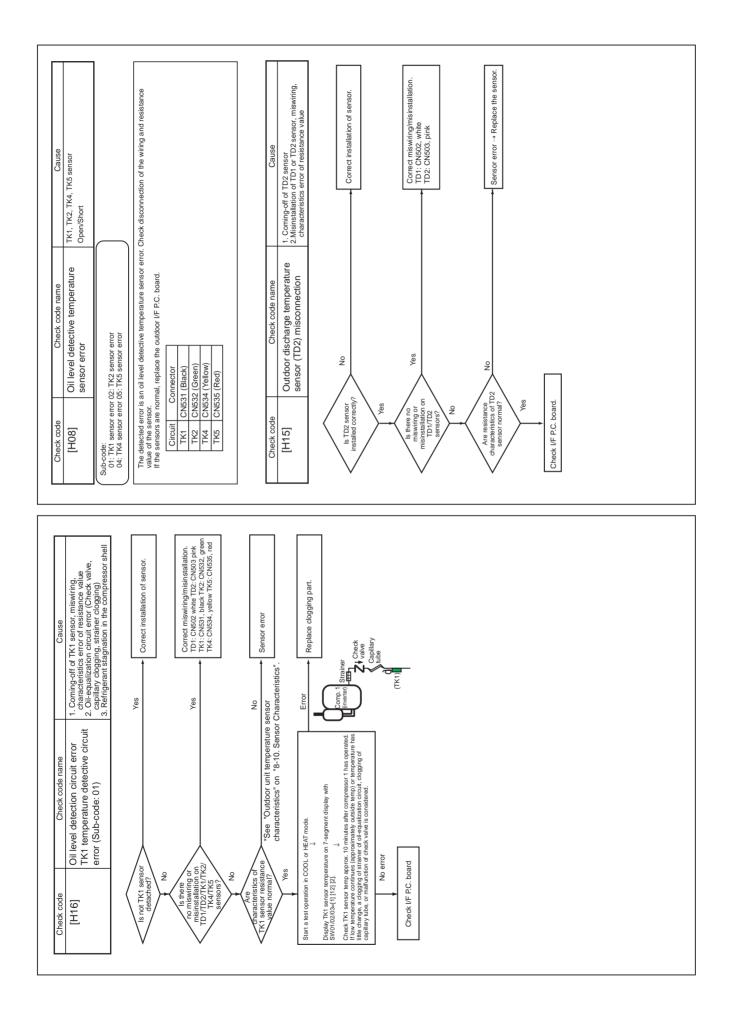


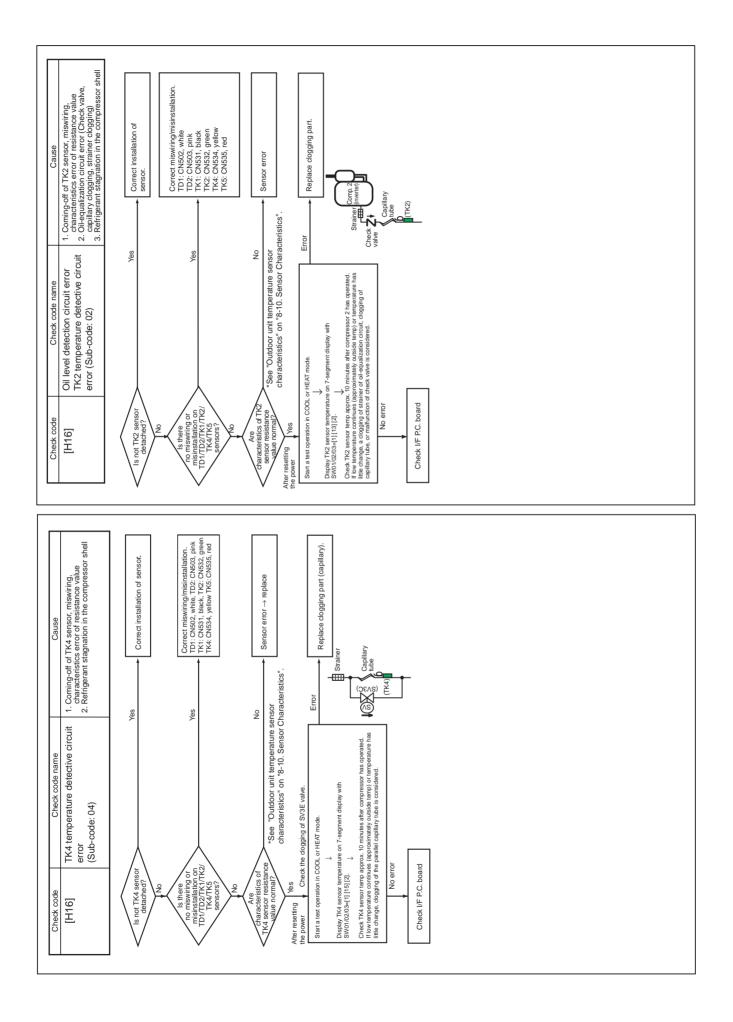


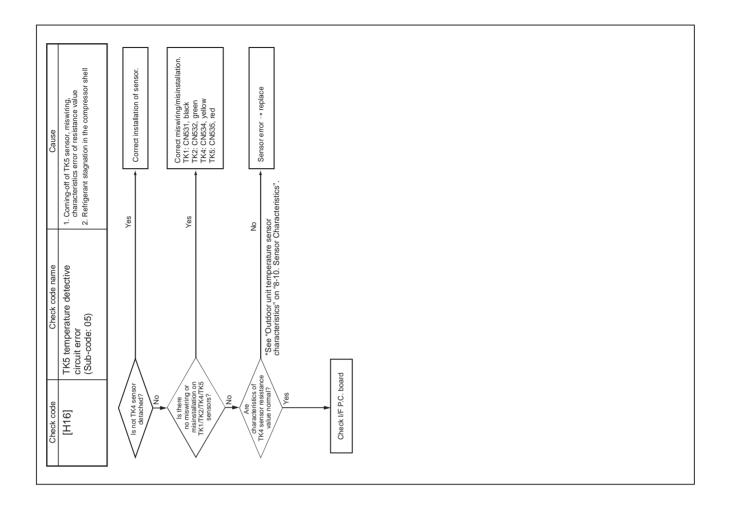


In some cases, it may be difficult to check the leakage of clogging in the following condition of refrigerant stagnation in low ambient temperature condition. In this cases, take a longer operating time prior to check. (Criterion: Discharge temperature of TD1 and TD2 are 60°C or higher) (forterion: Discharge temperature of TD1 and TD2 are 60°C or higher) (*1) Checking leakage and clogging on solenoid valves a) Leakage check for SV3A valve (For multiple outdoor unit system) • Turn off the power supply, take off connector of SV3A valve, and then start a test operation after power-ON. • Themperature is alsead, leakage occurs in the SV3A valve. Replace SV3A valve. • If themperature is raised, leakage occurs in the SV3A valve, and then start a test operation after • Turn off the power supply, take off connector of SV3A valve, and then start a test operation after • Turn off the power supply, take off connector of SV3A valve, and then start a test operation after • Turn off the power supply, take off connector of SV3C valve, and then start a test operation after • Turn off the power supply, take off connector of SV3C valve, and then start a test operation after	<ul> <li>power-UN.</li> <li>After operation for several minutes, check temperature at secondary side of SV3C valve. ((2) in the figure.)</li> <li>If temperature is high (equivalent to discharge temperature TD), leakage occurs in the SV3C valve. Replace SV3C valve.</li> <li>If temperature is high (equivalent to discharge temperature of SV3C valve at secondary side figure.)</li> <li>If temperature is high (equivalent to solver, temperature of SV3C valve at secondary side resplace SV3C valve.</li> <li>Replace SV3C valve.</li> <li>(Even if leakage does not occur in the SV3C valve, temperature of SV3C valve at secondary side rises during operation. But the temperature is lower than TD when there is no leakage.)</li> <li>C) Clogging check for SV3B valve (For multiple outdoor unit system)</li> <li>While outdoor unit is operated, set up SW01/02/03 = [2] [1] [3] (7-segment display [Hr] []), and push SW04 for 2 seconds or more.</li> <li>Set up SW02 = [10], and turn on SV3A, SV3B, SV3C valves. (7-segment display [Hr] []), and push SW04 for 2 seconds or more.</li> <li>While outdoor units are operating, check temperature change at secondary side of SV3B valve. ((4) in the figure.)</li> <li>If temperature does not rise (equivalent to suction temperature), it is a clogging of SV3B valve. Replace SV3B valve.</li> </ul>	
<ul> <li>(*2) Checking the oil return circuit from oil separator and clogging in SV3D valve</li> <li>a) Oil return circuit</li> <li>a) Oil return circuit</li> <li>a) Oil return circuit</li> <li>b) Oil return circuit</li> <li>considered. Replace the clogged part.</li> <li>b) Clogging check for SV3D valve</li> <li>b) Clogging check for SV3D valve</li> <li>considered. Replace the clogged part.</li> <li>b) Clogging check for SV3D valve</li> <li>considered. Replace the clogged part.</li> <li>construction is low at scondary side of the valve of the close not change, clogging of valve, capillary.</li> </ul>		

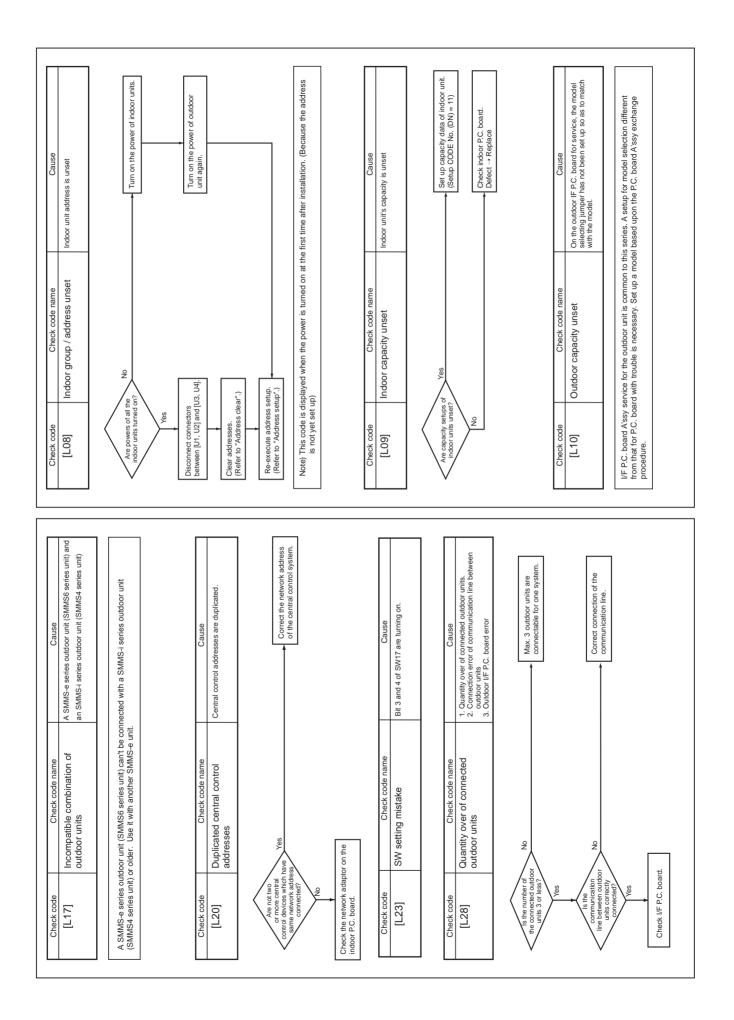


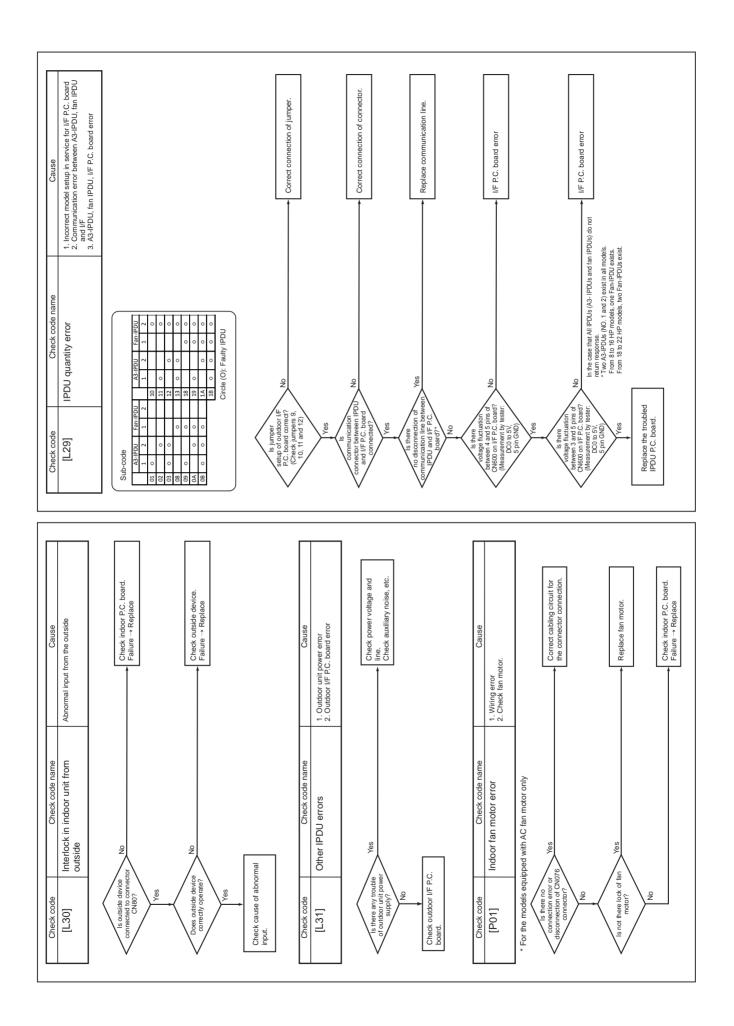


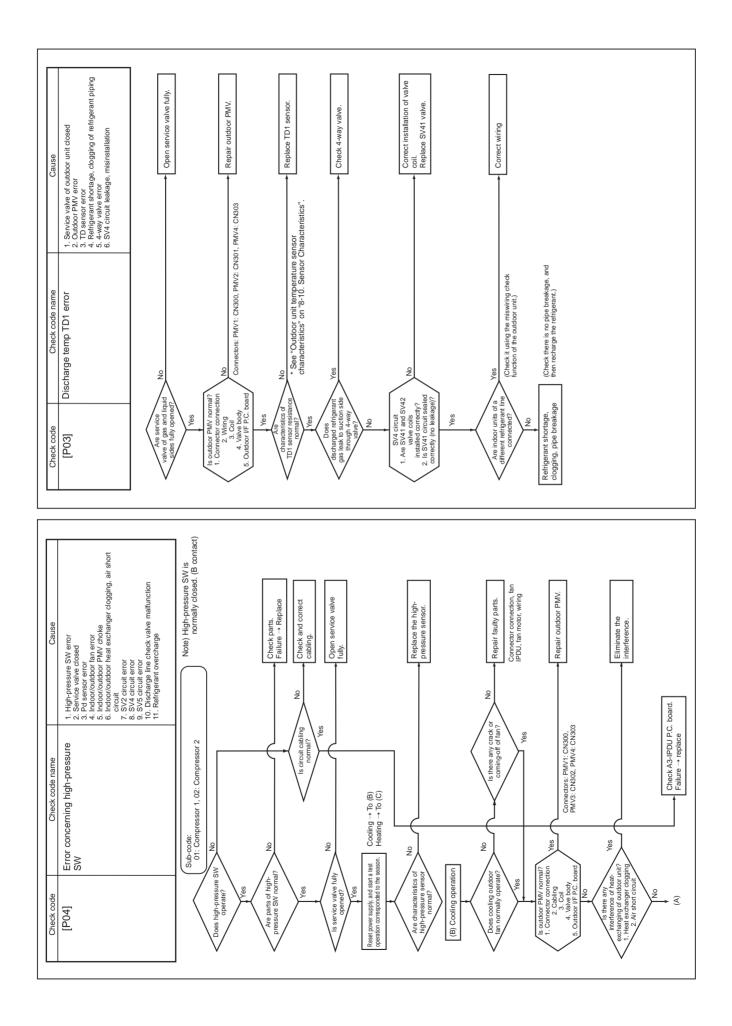


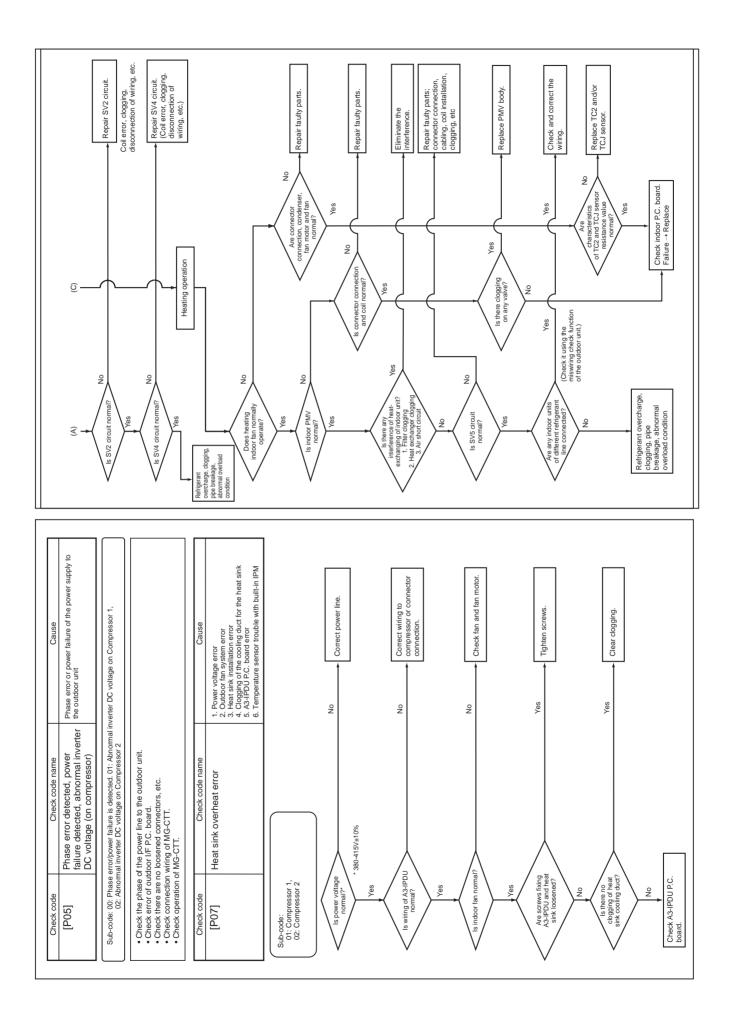


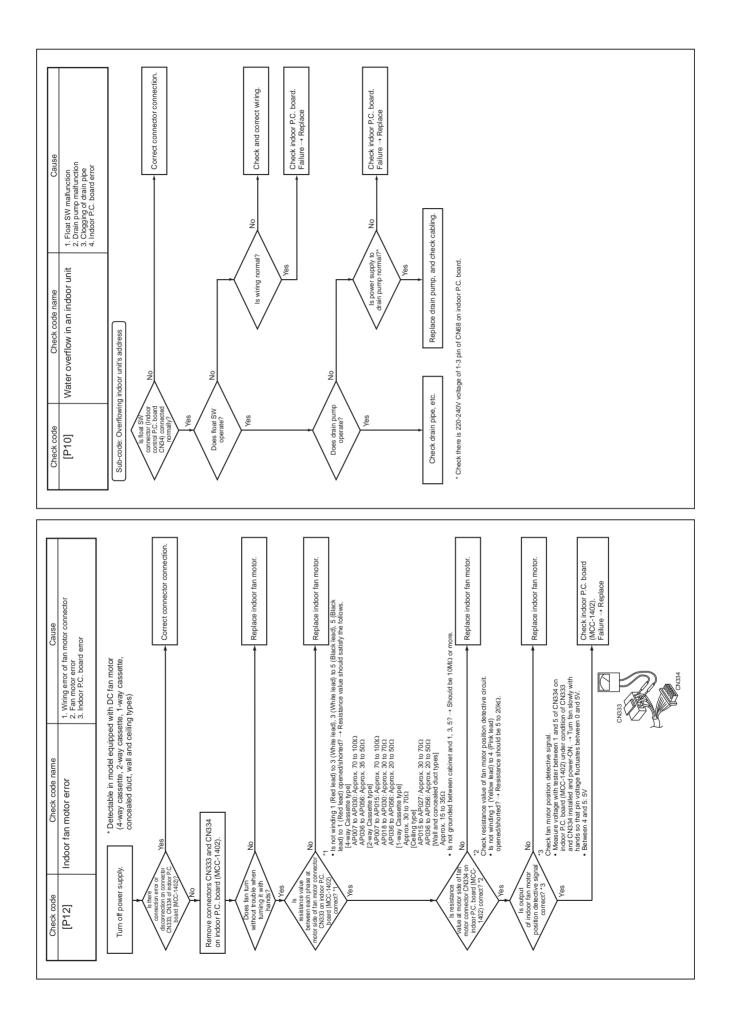
Check code	Check code name	Cause	Check code	Check code name	Cause
[F05]	Duplicated indoor units with priority	Two or more prior indoor units exist.	[L02]	Outdoor units model disagreed error	When the indoor unit that does not correspond is connected with the outdoor unit
	(Displayed on indoor unit with priority)				
This check code is di	lisolaved on the indoor unit set as a prior on	whan two or more nrior indoor units are detected	Check code	Check code name	Cause
Priority setup with the setup.	Priority setup with two or more units is not available. As only one indoor unit with prior setup.     Setup.	e indoor unit with priority is valid, change the	[L03]	Duplicated indoor header units	There are two or more indoor header units in a group during group control.
			1) Check whether the	e connection on remote controllers (group	and/or individual) has been changed since the
Check code [L06]	Check code name Duplicated indor units with priority (Displayed on the indoor units other than ones with priority and on the outdoor unit)	Cause Two or more indoor units with priority are duplicated.	2) If the group configuration shifts to address s	in and address are writed in the remove con- uration and address are normal when pow etup mode. For setting up addresses again	bit the group comparison and address creating on the remove controllers missives. 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".
Sub-code: amount of indoor units with priority	door units with priority				
When priority is give set as prior ones and As only one indoor	n to two or more indoor units, this check coc d the outdoor unit. unit with priority is valid, change the setup.	When priority is given to two or more indoor units, this check code is displayed on indoor units other than the units set as prior ones and the outdoor unit. • As only one indoor unit with priority is valid, change the setup.	Check code	Check code name	Cause
			[LU4]	Duplicated setup of outdoor line address	Outdoor line addresses are duplicated.
Check code [L07]	Check code name A group line exists in an individual indoor unit	Cause A group line is connected to an individual indoor unit.	Is there duplicated line address setup?		Correct the line address setup.
			communication wire connections o	ž	
Is there group cabling?	Ing? Test the addresses of setup item code DN 12, 13, and 14.	14.	[U1.U2], [U3.U4], and [U5, U6] normal? Yes	< _	Correct the wire connection.
ž	There is individual indoor unit.	Yes Correct indoor group address.	Check outdoor <i>I/</i> F P.C. board. Fallure → Replace	board.	Re-set up the address. (Refer to "Address setup".)
+ Check indoor P.C. board. Failure → Replace					

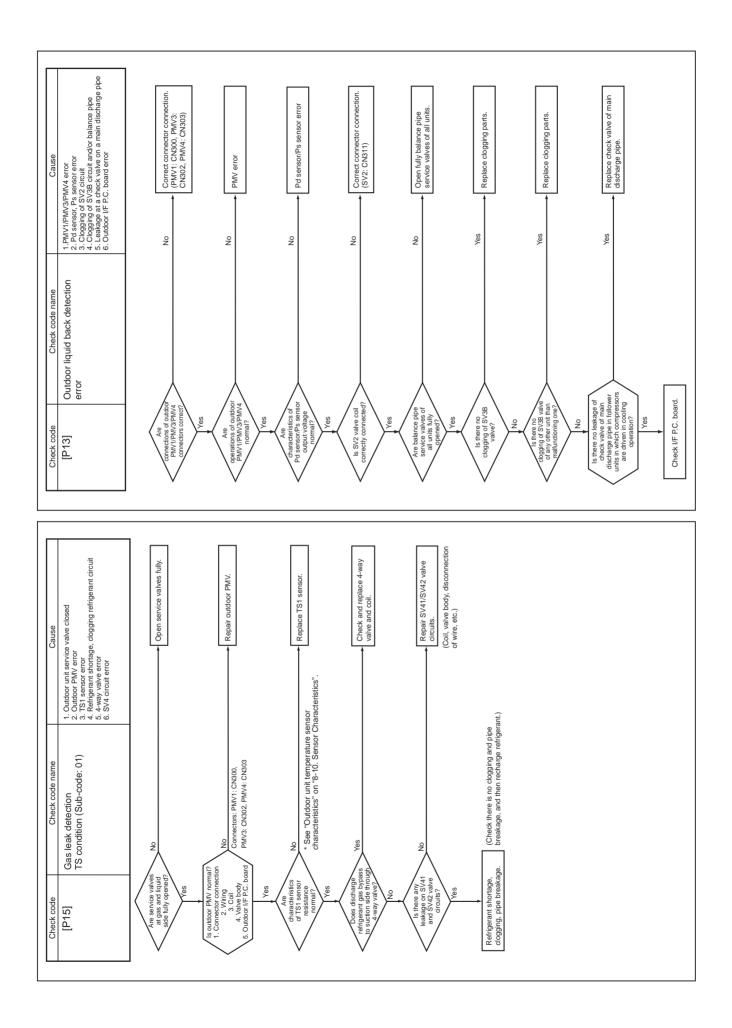


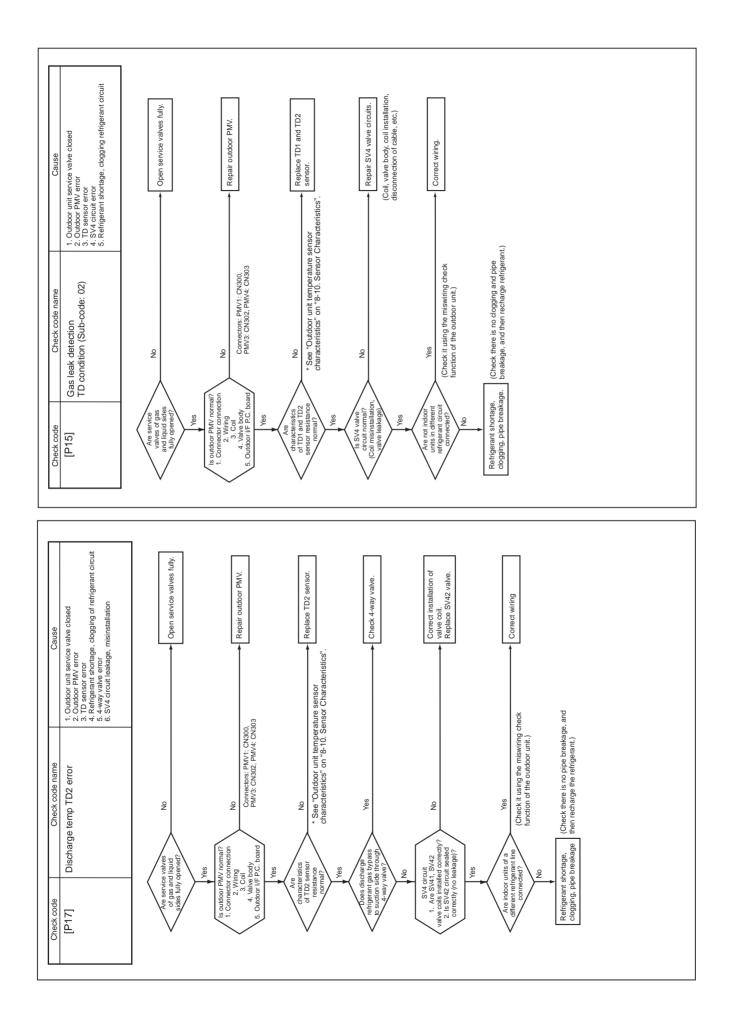


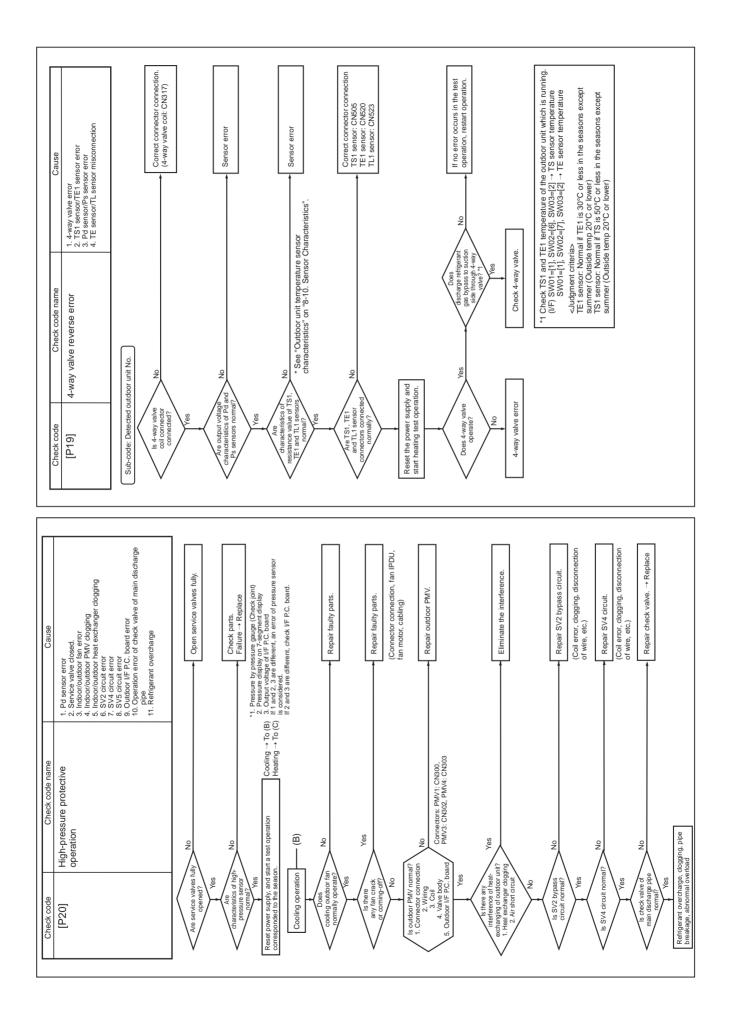


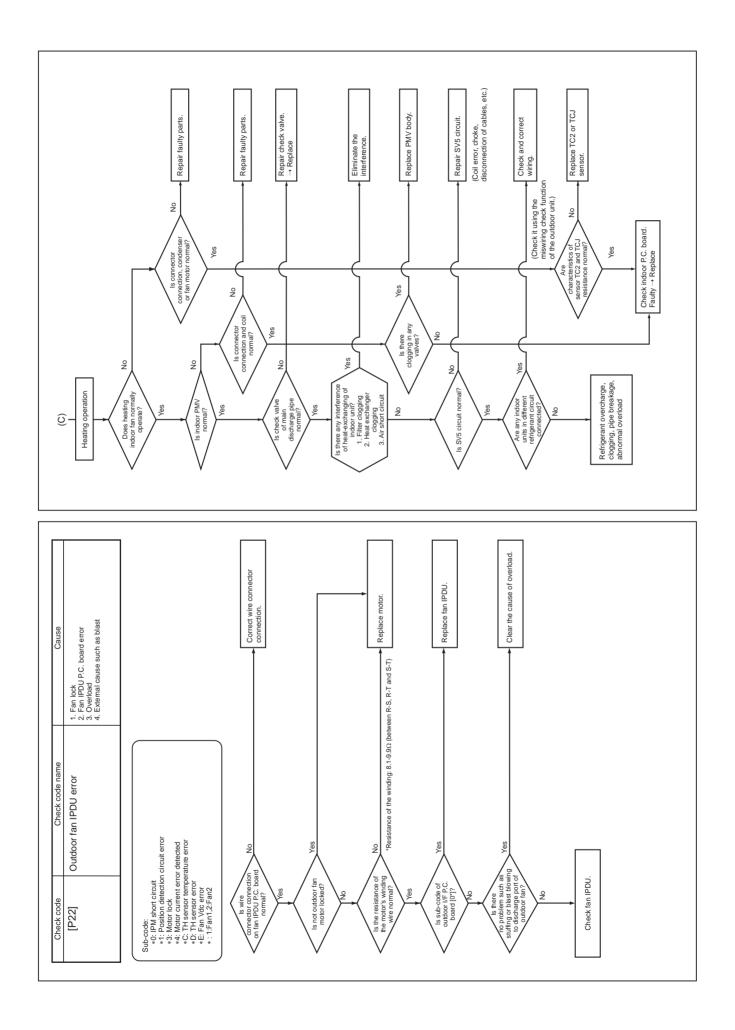


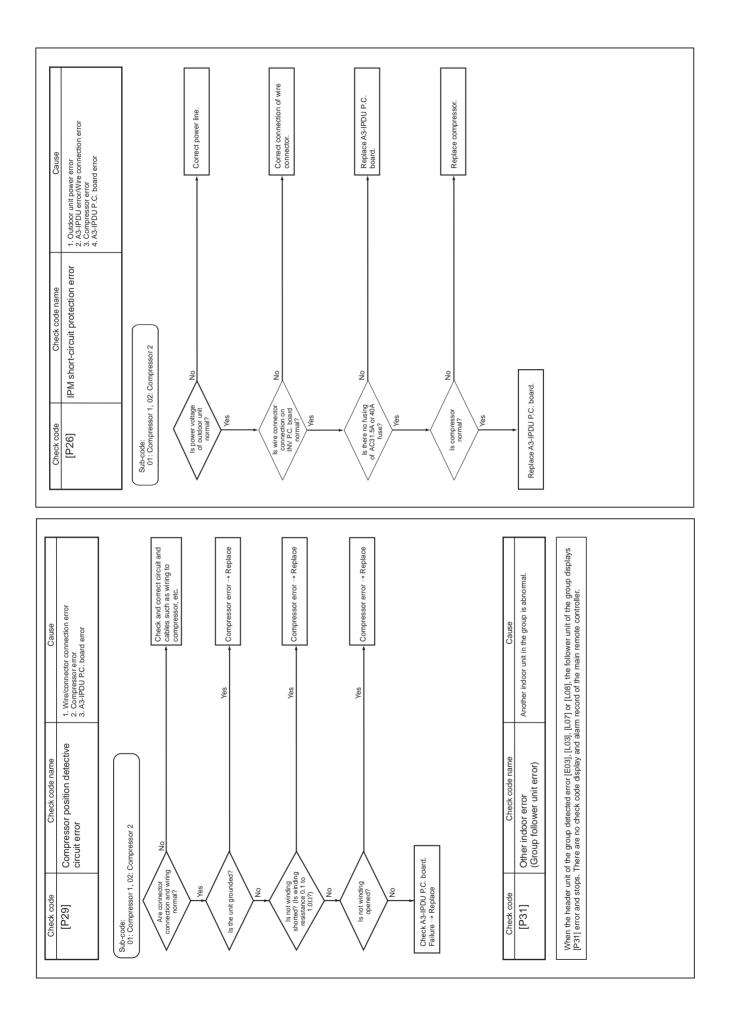








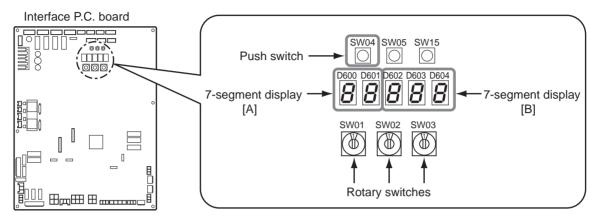




## 8-6. 7-Segment Display Function

### 7-segment display on outdoor unit (interface P.C. board)

The interface control P.C. board features a 7-segment LED display designed to check operational status. Display items can be changed by changing the combination of the number settings of rotary switches provided on the P.C. board (SW01, SW02 and SW03).



### Checking Procedure to Be Followed in Event of Abnormal Shutdown

If the system is shut down due to an error in the outdoor unit, perform checks in the following steps:

**1** Open the panel of the outdoor unit and inspection window of the electric parts box, and check the 7-segment display.

The check code is displayed in the right-hand section of the 7-segment display [B]. [U1] [OOO] ([OOO]: Check code)

To check the check code, set the rotary switches SW01/SW02/SW03 to [1/1/1]. If there is a sub-code, the display alternates between the check code [OOO] (3 seconds) and the sub-code [OOO] (1 second).

- **2** Check the check code and follow the applicable diagnostic procedure.
- 3 If the 7-segment display shows [U1] [E28], there is an error in a follower unit. Press the push-switch SW04 on the header unit and hold for several seconds. As the fan of the outdoor unit in which the error has occurred comes on, open the panel of the unit, and check the check code shown on the 7-segment display.
- **4** Perform checks in accordance with the diagnostic procedure applicable to the check code.

SW01	SW02	SW03	Display detail								
	1		-	-	-						
			System capacity	A	[8]~[64]:8 to 64 HP						
	2			<u> </u>	B [HP]						
			No. of outdoor units	-							
	3			<u> </u>	[P]						
					[0.]~[64.]:0 to 64 (No. of units connected)						
	4		of units with cooling thermostat ON	в	[C0]~[C64]:0 to 64 (No. of units with cooling thermostat	ON)					
	_		No. of indoor units connected / No.	A	[0.]~[64.]:0 to 64 (No. of units connected)						
	5	_	of units with heating thermostat ON	в	[H0]~[H64]:0 to 64 (No. of units with heating thermostat	ON)					
	6		Amount of compressor command correction	A B	Value displayed in hexadecimal format						
			Release control	A	Normal: [r], During release control: [r.1]						
	7				-						
			Oil equalization control	B     -       tion control     Normal: [oiL-0]							
	8				uring oil equalization control: [oiL-1]						
			Oil equalization request	Α	Displayed through LED segment lighting pattern						
				в	Display section A Display section B If element F shown on sketch a	t left turne	ad on:				
	9				A       Image: Constraint of the constraint	uest at left turne					
			Refrigerant/oil recovery operation	A	Oil recovery in cooling: [C1], Normal: [C]						
1	10	3			B Refrigerant recovery in heating: [H1], Normal: [H]						
			Automatic addressing	A	[Ad]						
	11				B During automatic addressing: [ FF], Normal: []						
			Power peak-cut	A	[dU]						
	12			В		6090]					
			Optional control (P.C. board input)	Di	splays optional control status	A	В				
				0	peration mode selection: During priority heating (normal)	h.*.	*.*.*.				
					Priority cooling	C.*.	*.*.*.				
					Heating only	H.*.	*.*.*.				
					Cooling only	C.*.	*.*.*.				
					Priority given to No. of indoor units in operation	n.*.	*.*.*.				
	13				Priority given to specific indoor unit	U.*.	*.*.*.				
	15			E	ternal master ON/OFF: Normal	*	*.*.*.				
					Start input	*.1.	*.*.*.				
					Stop input	*.0.	*.*.*.				
				Ni	ght operation: Normal	*.*.	*.*				
					Start input	*.*.	1.*.*.				
				Sr	nowfall operation: Normal	*.*.	**.				
					Start input	*.*.	*.1.*.				
	14		Optional control (BUS line input)	Sa	ame as above						
	15				_						
	16		-		_						

### (1) Display of System Information (Displayed on Header Outdoor Unit Only)

SW01	SW02	SW03	Display detail										
			Error data	A	Outdoor unit No.: [U1] to [U3]								
	1			В	<ul> <li>B Check code (only latest one displayed)</li> <li>If there is no check code, [] is displayed.</li> <li>If there is sub-code, check code [* * *] and sub-code [- * *] are disp alternately, for 3 seconds and 1 second, respectively.</li> </ul>								
			SW04 + SW05> push SW fu	inction	eration at outdoor unit with error. 7-segment display section Fan operation at outdoor unit without error. 7-segment displ eration function check mode is cancelled.								
	2		_		A – B –								
			Operation mode										
	3		Operation mode	A	Stop [] Normal cooling: [ C], Normal heating: [ H], Normal de	frosting:	[ J]						
			Outdoor unit HP capacity	A		1							
	4			В	[HP]	1							
			Compressor operation comman		Operation data of each compressor is displayed in turn in 2	second i	ntervals						
	5		Normal: Compressor speed ( 7-segment display (A/B): [C1	(rps) is	displayed in decimal format. ] $\Rightarrow$ [ * * *, * ] $\Rightarrow$ [C2 ] $\Rightarrow$ [ * * *, * ]								
				Switch * * *] :	es to display of operating current (decimal value). ⇒ [i2.* * *]								
			Outdoor fan mode	A	[FP]								
	6				B Mode 0 to 63: [ 0] to [63]								
			Compressor backup		A [C.b.]								
	7			В	Displays compressor backup setting status Normal: [] Compressor No. 1 backup: [1] Compressor No. 2 backup: [ 1]								
1	8	1	_	A	-								
			Control valve output data		Displays control output status of solenoid valve A B								
	9				way valve: ON	H. 1							
					way valve: OFF	H. 0							
					/2: ON / SV51: OFF / SV52: OFF	2	100						
	10				/2: OFF / SV51: ON / SV52: ON	2	010						
					/2: OFF / SV51: OFF / SV52: ON	2	001						
				s	/3A: ON / SV3B: OFF / SV3C: OFF / SV3D: OFF	3.1	000						
				s	/3A: OFF / SV3B: ON / SV3C: OFF / SV3D: OFF	3.0	100						
	11			s	SV3A: OFF / SV3B: OFF / SV3C: ON / SV3D: OFF								
				s	/3A: OFF / SV3B: OFF / SV3C: OFF / SV3D: ON	3.0	001						
				s	/41: ON / SV42: OFF	4	100						
	12			s	/41: OFF / SV42: ON	4	010						
	14				splays opening data in decimal format. ress <sw04>, then PMV1 display switches to</sw04>	* *	* *. F						
			PMV1/PMV3 opening		VV3 display."	*	* *. F						
	15		PMV4 opening	D	splays opening data in decimal format. PMV4	*	* *. F						
			Oil level judgment status										
									Normal	A B	[o L.] Initial display: [], Oil level judgment result: [#.*.\$] Displayed letters #, * and \$ represent judgment results for	compres	sor Nos
	16		CIMOA puch CIM functions	Dionle	1 and 2, respectively ("0" for normal and "1" or "2" for low	,							
					rs low level confirmed judgment result of each compressor.								
			<ul> <li>Pressing of <sw05> restore normal display.</sw05></li> </ul>	es A B	[L d.] Compressor No. 1 low level being confirmed: [L]								

SW01	SW02	SW03		Display detail					
	1		Pd pressure data	Pd pressure (MPaG) is displayed in decimal form	nat.	А	В		
	1			(MPaG: Approx. 10 times magnitude of kg/cm2G	i)	Ρd.	*. * *		
	2		Ps pressure data	pressure data Ps pressure (MPaG) is displayed in decimal format					
	3		PL pressure conversion data	Converted PL pressure (MPaG) is displayed in d	ecimal format.	PL.	*. * *		
	4		TD1 sensor data	Temperature sensor reading (°C) is displayed	Letter symbol	t d	1		
	4			in decimal format.	Data	*	*.**		
	5		TD2 sensor data	<ul> <li>Letter symbol and data are displayed</li> </ul>	Letter symbol	t d	2		
	5			alternately, for 1 second and display for 3	Data	*	*. * *		
	7		TS1 sensor data	seconds, respectively.	Letter symbol	t S	1		
				<ul> <li>Data is displayed in [ * ].</li> </ul>	Data	*	* * *		
	9		TS3 sensor data	<ul> <li>Data with negative value is displayed as [- *].</li> </ul>	Letter symbol	t S	3		
1	9	2			Data	*	*. * *		
1	10	2	TE1 sensor data		Letter symbol	tΕ	1		
	10				Data	*	*. * *		
	11		TE2 sensor data		Letter symbol	tΕ	2		
					Data	*	*. * *		
	13		TL1 sensor data		Letter symbol	t L	1		
	15				Data	*	*. * *		
	14		TL2 sensor data		Letter symbol	t L	2		
	14				Data	*	* * *		
	15		TL3 sensor data		Letter symbol	t L	3		
	10				Data	*	*.**		
	16		TO sensor data		Letter symbol	to			
	10				Data	*	*.**		

### (3) Display of Outdoor Cycle Data (Displayed at Each Outdoor Unit)

SW01	SW02	SW03		Display detail			
	1		TK1 sensor data	Temperature sensor reading (°C) is displayed	Letter symbol	F 1	
	1			in decimal format.	Data	*	*. * *
	2		TK2 sensor data		Letter symbol	F 2	
	2				Data	*	*. * *
	4		TK4 sensor data		Letter symbol	F 4	
1	4	5			Data	*	*. * *
I	5	5	TK5 sensor data		Letter symbol	F 5	
	5				Data	*	*. * *
	6	8	TG1 sensor data		Letter symbol	t G	1
	0				Data	*	*. * *
	7		TG2 sensor data		Letter symbol	t G	2
	'				Data	*	* * *

SW01	SW02	SW03		Display detail					
			Error data	A	[U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3)				
	1			В	Check code is displayed (latest one only). If there is no check code: $[]$ .				
	2		Type of compressor installed	А	[U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3)				
				В					
			Outdoor unit HP capacity	А	[U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3)				
	3			В	8HP: [ 8], 10HP: [ 10], 12HP: [ 12], 14HP: [14], 16HP: [16], 18HP: [18], 20HP: [20], 22HP: [22]				
			Compressor operation command	A	[U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3)				
				В	Indicates which compressor is ON.				
	4				* Any unconnected compressors is represented by "-".	В			
	4	1~3			When compressor No. 1 is ON	10			
					When compressor No. 2 is ON	01			
3	5		Fan operation mode	A	[U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3)				
	5				3 At rest: [F 0], In mode 63: [F 6 3]				
	6		Release signal	A	[U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3)				
	0			В	Normal: [r], Upon receiving release signal: [r 1]				
	7		Oil level judgment	А	[U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3)				
				В	Normal: [], Low level: [ L]				
	8		Compressor 1 operating current	A	[U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3)				
				В	[**.*], **.* is value of operating current in decimal format.				
	9		Compressor 2 operating current		[U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3)				
				В	[**.*], **.* is value of operating current in decimal format.				

(4) Display of Outdoor Cycle Data (Displayed at Header Unit)
 \* This method is used when displaying follower unit information on the 7-segment display of the header unit.

**Note:** Follower unit is selected by setting SW03.

SW03	7-segment display section A
1	U2
2	U3

### (5) Display of Indoor Unit Information (Displayed on Header Unit Only)

SW01	SW02	SW03			Display detail
4			Indoor BUS communication signal receiving status	В	Upon receiving signal: [ 1], Other times: []
5		1~4	Indoor check code	В	No check code: []
6			Indoor HP capacity	В	0. 2, 0. 5, 0. 8, 1, 1. 2, 1. 7, 2, 2. 5, 3, 3. 2,4,5,6,8, 1 0, 1 6, 2 0
7	1~16		1~4	Indoor request command (S code, operation mode)	В
8	1~10		Indoor PMV opening data	В	Displayed in decimal format
9			Indoor TA / TRA opening data	В	Displayed in decimal format
		11~14	Indoor TSA opening data	В	Displayed in decimal format
10		1~4	Indoor TF / TFA opening data	В	Displayed in decimal format
		11~14	Indoor TOA opening data	В	Displayed in decimal format
11			Indoor TCJ opening data	В	Displayed in decimal format
12		1~4	Indoor TC1 opening data	В	Displayed in decimal format
13			Indoor TC2 opening data	в	Displayed in decimal format

Note: Indoor address No. is selected by setting SW02 and SW03 and displayed on 7-segment display, section A.

SW02	SW03	Indoor address	7-segment display section A
	1	SW02 setting number	[01]~[16]
	11		
1~16	2	SW02 setting number +16	[17]~[32]
1~10	12		
	3	SW02 setting number +32	[33]~[48]
	13		
	4	SW02 setting number +48	[49]~[64]
	14		

### (6) Display of Outdoor EEPROM Writing Error Code (Displayed on Header Unit Only)

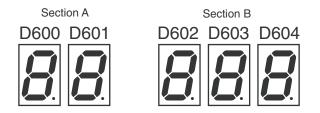
\* The latest error code written in the EEPROM of each outdoor unit is displayed.

(This function is used to check the error code after the resetting of the power supply.)

To display the error code, push SW04 and hold for at least 5 seconds after setting SW01 to 03 as shown in the table below.

SW01	SW02	SW03	Indoor address 7-segment display			
	1		Latest error code of header unit (U1)		***	
1	2	16	Latest error code of follower unit No. 1 (U2)	E. 2.	***	
	3		Latest error code of follower unit No. 2 (U3)	E. 3.	***	

#### • 7-Segment Display



Set SW01/SW02/SW03 to [1/1/16] and push SW04 and hold for at least 5 seconds. The latest error code of the header unit (U1) will be displayed.

If the setting of SW02 is changed, the latest error code of a follow unit (U2-U3) will be displayed.

## 8-7. Oil Level Judgment Display

The current compressor oil level judgment results can be accessed by setting the switches provided on the interface P.C. board of an outdoor unit.

Perform the checks in accordance with the procedure described below.

### **1** Operation Procedure

(1) Start the operation.

(2) Set the switches provided on the interface P.C. board of the outdoor unit for which oil level judgment results are required as follows:

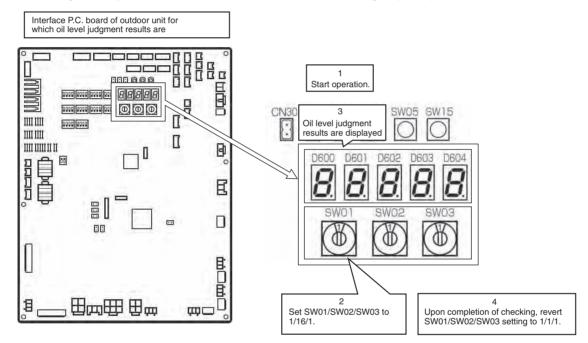
SW01/SW02/SW03 = 1/16/1

(3) The oil level judgment result will be displayed on the 7-segment display.

7-segment display: [oL] [#. \*.\$]

The letters #, \* and \$ are digits that represent judgment results for compressor Nos. 1 and 2, respectively. (See the table below for the interpretation of the judgment results.)

(4) When checking is completed, revert the SW01/SW02/SW03 setting to [1/1/1].



### 2 Oil Level Judgment Results

Displayed digit	Judgment result	Description
0	Normal	The amount of oil in the compressor is sufficient.
1 2	Low level	The amount of oil in the compressor is insufficient. (Both "1" and "2" stand for insufficiency.) If this result persists, the system will turn itself off in a protective shutdown.

### **Display example**

7-segment display [oL] [00] Oil level is normal for compressors 1 and 2. [oL] [22] Oil level is low for compressors 1 and 2. [oL] [02] Oil level is low for compressor 2 and normal for compressors 1. Judgment result for compressor 2 Judgment result for compressor 1

### 8-8. SMMS-e Outdoor Interface P.C. Board Function Setting Exchange Table

### 1. Switch/Function Setting Exchange

	Part type			E	xchai	nge contents	Initial setting at shipment
		bit 1	Compressor 1 backup			OFF: Normal, ON: Backup when compressor 1 was in trouble	OFF
SW06	DIP SW 4 bit	bit 2	Compressor 2 backup			OFF: Normal, ON: Backup when compressor 2 was in trouble	OFF
		All b	it1 and 2 are ON: Setup of out	door	unit ba	ackup	OFF
SW07	DIP SW 4 bit	bit 1	Demand control 1 (Standard specifications) Exchange of upper limit regu	lation		OFF: 0 to 100% ON : Middle to 100%	OFF
	DIF SW 4 bit	bit 2	Demand control 2 (Expansion Exchange of 2 steps to 4 step upper limit		tion)	OFF: 2 steps (Standard) ON : 4 steps	OFF
		In ca	se of center outdoor unit				1
		bit 2	Indoor connection capacity o Judgment of error	ver		OFF: Error judgment ON : None (when backup setting for outdoor unit)	OFF
SW09	DIP SW 4 bit	bit 4	Judgment of error for No. of a indoor units	conne	cted	OFF: No error judgment ON : Error judgment	OFF
			se of terminal outdoor unit				
			Exchange of Outdoor unit No order No.		art	OFF: Outdoor unit No. [U. #] (#: 1 to 3) ON : Outdoor start order No. [y. #] (#: 1 to 3)	OFF
			Outdoor fan high static press operation	ure		OFF: Normal ON : High static pressure operation	OFF
SW10	DIP SW 4 bit		For low noise operation			OFF: Normal ON : INV frequency upper limit restriction	OFF
		bit 4		OFF: Normal ON : Fan rpm upper limit restriction	OFF		
SW11	DIP SW 4 bit	bit 4	Operation switching when ind overflow error detected	door v	vater	OFF: Entire system stops ON : System operation continues (Room which trouble occurred only stops.)	OFF
		bit 1	Selection of PMV open/close	or		(According to the following setting contents)	OFF
SW12	DIP SW 4 bit	bit 2	manual operation				OFF
				bit 1	bit 2		
				OFF	OFF	PMV1 opens/closes by operation of CN30/CN31 (*1)	
				ON	OFF	1 31	_
			1	OFF	ON	PMV4 opens/closes by operation of CN30/CN31 (*1)	
SW13	DIP SW 4 bit	bit 4	Line address setup			(Used by combining with SW14)	OFF
		bit 1	Line address setup				OFF
SW14	DIP SW 4 bit	bit 2					OFF
		bit 3					OFF
		bit 4					OFF
		bit 1	Option function Output exchange of external	outpu	ıt	(According to the following setting contents)	OFF
SW16	DIP SW 4 bit	bit 2	P.C. boa	· .			OFF
30010	DIF 3W 4 DIL			bit 1 OFF	bit 2 OFF	Compressor operation output	-
				<u> </u>		Compressor operation output Display of system operation ratio	_
		bit 1	Communication termination r	ON OFF		OFF: No termination resistance ON : With termination resistance	ON
SW30	DIP SW 2 bit	bit 2			ance	OFF: No termination resistance ON : With termination resistance	ON
CN30	Check connector		ual full opening operation for F			When released: Normal, When short-circuited: Open fully (2 minutes)	Released
CN31	Check connector	Man	ual full closing operation for Pl	MV		When released: Normal, When short-circuited: Closed fully (2 minutes)	Released

\*1 PMV full open/full close operation by short-circuited CN30/CN31 is for PMV which was selected by setting of SW12.

### 2. Switching of Jumper Wire/Function

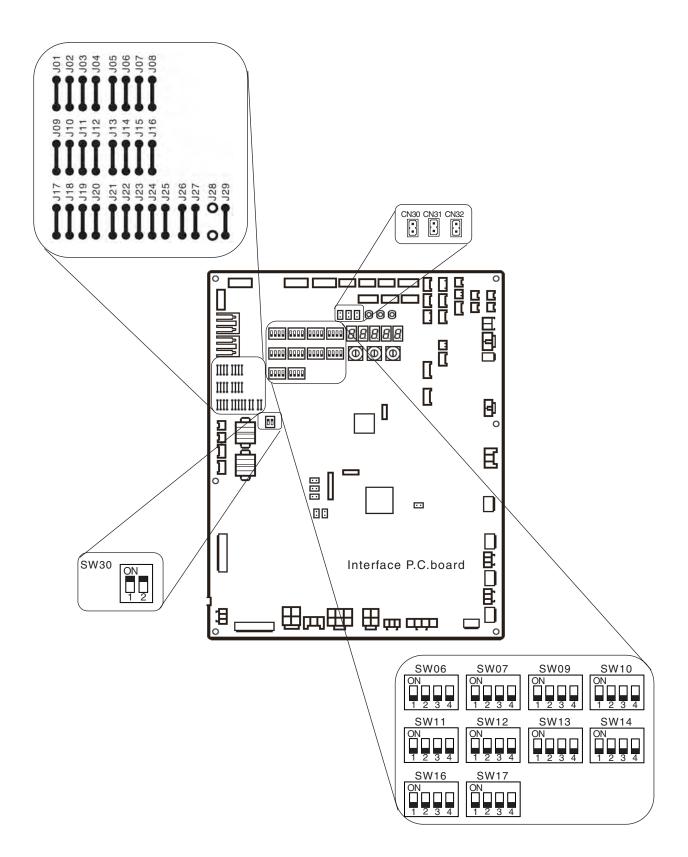
#### Setup Function switching setup

O: With jumper, X: Without jumper (Cut)

jumper	Part type		Exchange contents			
	Optional function Operation mode selection	0	Indoor unit at not selected side is kept with waiting status.			
J01	operation switching	×	The mode is changed a mode which selected the operation mode of the indoor unit at not selected side.	0		
J04	Upper limit setup of demand capacity command in		Approx. 75% (Normal)	- 0		
004	corresponding indoor during saving operation in indoor	×	Approx. 60%			
J16	Demand control 1 (Standard specification) Corresponds to 2-core wire	0 ×	Normal (3-core wire <successive make="" signal=""> or 4-core wire <successive make="" or="" pulse="" signal="">) 2-core wire <successive make="" signal=""></successive></successive></successive>	0		

\*4 When you replace the board with a service board, be sure to cut the jumper wire matching with the outdoor unit model to be installed. (The jumper wires J09 to J12 which were mounted at shipment from the factory are provided to all the boards regardless of model type.)

Interface Board Switches and jumper wire positions to be used in the Function setup switching table



### 8-9. Leakage/Clogging of Refrigerating Cycle Circuit

### List of Check Codes Generated upon Occurrence of Leakage/Clogging in Outdoor Cycle or Oil Circuit Part (MMY-MAP0806\*, 1006\*, 1206\*, 14B6\*)

### Clogging

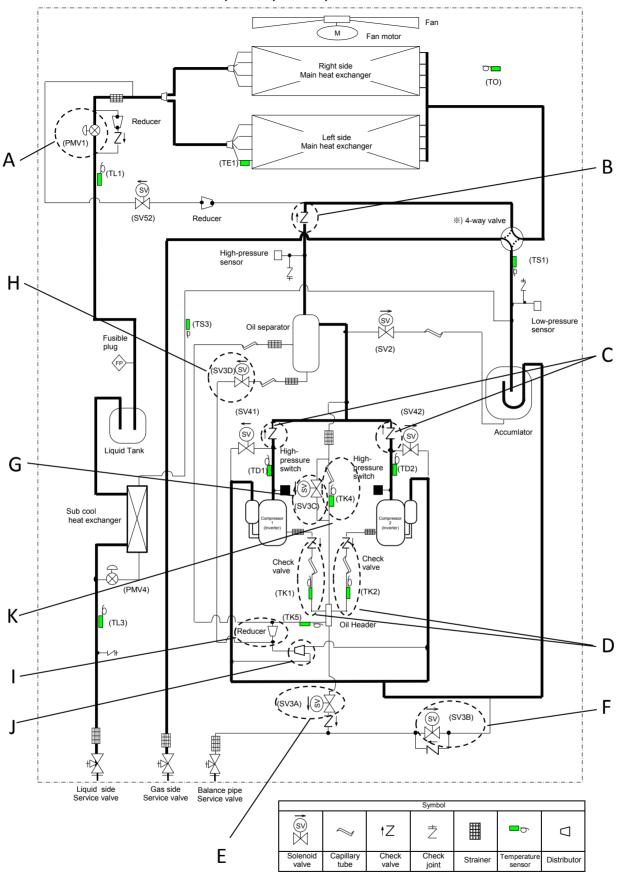
Part	Location of problem (see next page)	Unit generating check code	Detected fault and check co	Symptom		
Outdoor PMV1	A	Corresponding unit	Activation of high-pressure protection Activation of low-pressure protection Discharge temp. error (TD1) Discharge temp. error (TD2)	P20 H06 P03 P17	Rise of pressure Fall of pressure Rise of discharge temp. (compressor 1) Rise of discharge temp. (compressor 2)	
Check valve in discharge pipe convergent section	В	Corresponding unit	High-pressure protection error High-pressure SW system error	P20 P04-XX	Abnormal rise of pressure	
Check valve in discharge pipe	Check valve in discharge pipe C		Corresponding unit High-pressure SW system error		Abnormal rise of pressure	
Check valve in oil-equalization circuit Capillary Strainer	D	Corresponding unit	Oil level detection circuit error Oil level low detection and protection	H16-XX H07	Oil circuit error or oil level low	
SV3A valve	E	Other connected unit	Oil level low detection and protection	H07	Oil level low	
SV3B valve	F	Corresponding unit	Oil level low detection and protection	H07	Oil level low	
SV3C valve	G	Other connected unit	Oil level low detection and protection	H07	Oil level low	
SV3D valve SV3D valve circuit capillary Strainer	Н	Corresponding unit	Oil level low detection and protection	H07	Oil level low	
Reducer I		Corresponding unit	Oil level detection circuit error Oil level low detection and protection	H16-05 H07	Oil circuit error Oil level low Oil level low	
Oil return distributor	J	Corresponding unit	Oil level low detection and protection	H07	Oil level low	
SV3C bypass capillary K		Corresponding unit	Oil level detection circuit error	H16-04	Oil circuit error	

#### Leakage

Part	Location of problem (see next page)	Unit generating check code	Detected fault and check co	Symptom	
Outdoor PMV1		Corresponding unit	Outdoor liquid backflow error Oil level low detection and protection	P13 H07	Refrigerant entrapment
	A	Other connected unit	Discharge temp. error (TD1) Discharge temp. error (TD2)	P03 P17	Rise of discharge temp. (compressor 1) Rise of discharge temp. (compressor 2)
Check valve in discharge pipe convergent section	В	Corresponding unit	Oil level low detection and protection Compressor breakdown Compressor error (lockup)	H07 H01-XX H02-XX	Refrigerant entrapment
Check valve in discharge pipe C		Corresponding unit	Oil level low detection and protection Compressor breakdown Compressor error (lockup)	H07 H01-XX H02-XX	Refrigerant entrapment
Check valve in oil-equalization circuit	D	Corresponding unit	Oil level low detection and protection	H07	Excessive amount of oil (Leaking side) Insufficient amount of oil (Normal side)
SV3A valve	E	Corresponding unit	Oil level low detection and protection	H07	Oil level low
SV3C valve	G	Corresponding unit	Oil level low detection and protection	H07	Oil level low

Note: "XX" represents sub-code

### Outdoor unit (8, 10, 12, 14HP) Model : MMY-MAP0806\* ,1006\*, 1206\*, 14B6\*



※) C/O models don't have 4-way valve and coil. However, MMY-MAP\*\*06T8(J)P-E models don't have only 4-way coil.

### List of Check Codes Generated upon Occurrence of Leakage/Clogging in Outdoor Cycle or Oil Circuit Part (MMY-MAP10A6\*, 12A6\*, 1406\*, 1606\*, 18B6\*)

### Clogging

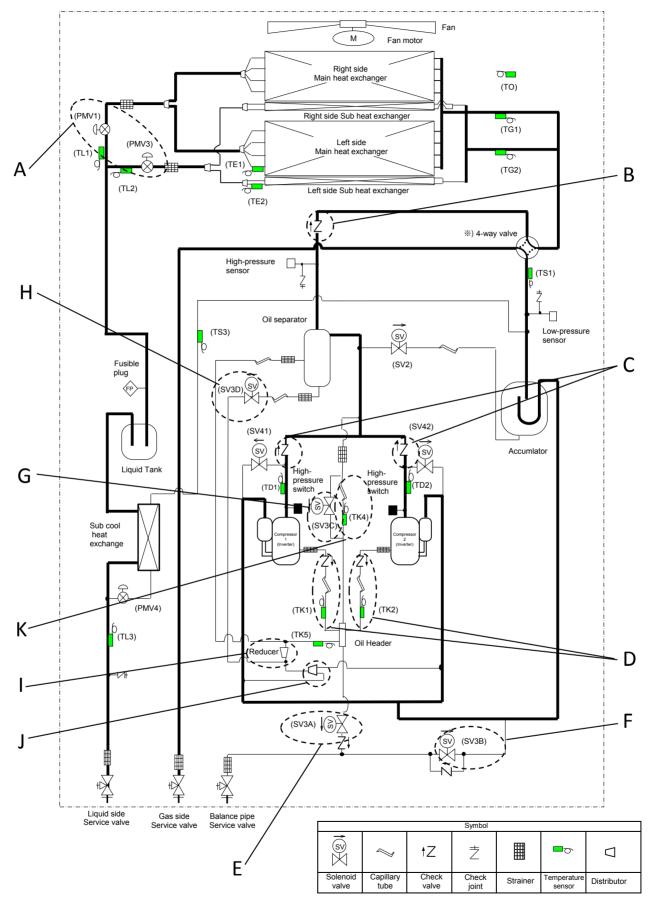
Part	Location of problem (see next page)	Unit generating check code	Detected fault and check co	de	Symptom
Outdoor PMV1, 3	A	Corresponding unit	Activation of high-pressure protection Activation of low-pressure protection Discharge temp. error (TD1) Discharge temp. error (TD2)	P20 H06 P03 P17	Rise of pressure Fall of pressure Rise of discharge temp. (compressor 1) Rise of discharge temp. (compressor 2)
Check valve in discharge pipe convergent section	В	Corresponding unit	High-pressure protection error High-pressure SW system error	P20 P04-XX	Abnormal rise of pressure
Check valve in discharge pipe	С	Corresponding unit	High-pressure SW system error	P04-XX	Abnormal rise of pressure
Check valve in oil-equalization circuit Capillary Strainer	D	Corresponding unit	Oil level detection circuit error Oil level low detection and protection	H16-XX H07	Oil circuit error or oil level low
SV3A valve	E	Other connected unit	Oil level low detection and protection	H07	Oil level low
SV3B valve	F	Corresponding unit	Oil level low detection and protection	H07	Oil level low
SV3C valve	G	Other connected unit	Oil level low detection and protection	H07	Oil level low
SV3D valve SV3D valve circuit capillary Strainer	V3D valve circuit capillary H		Oil level low detection and protection	H07	Oil level low
Reducer	I	Corresponding unit	Oil level detection circuit error Oil level low detection and protection		
Oil return distributor	К	Corresponding unit	Oil level low detection and protection	H07	Oil level low
SV3C bypass capillary	L	Corresponding unit	Oil level detection circuit error	H16-04	Oil circuit error

#### Leakage

Part	Location of problem (see next page)	Unit generating check code	Detected fault and check co	Symptom Refrigerant entrapment		
Outdoor PMV1		Corresponding unit	Outdoor liquid backflow error Oil level low detection and protection			
	A	Other connected unit	Discharge temp. error (TD1) Discharge temp. error (TD2)	P03 P17	Rise of discharge temp. (compressor 1) Rise of discharge temp. (compressor 2)	
Check valve in discharge pipe convergent section B		Corresponding unit	Oil level low detection and protection Compressor breakdown Compressor error (lockup)		Refrigerant entrapment	
Check valve in discharge pipe C		Corresponding unit	Oil level low detection and protection Compressor breakdown Compressor error (lockup)	H07 H01-XX H02-XX	Refrigerant entrapment	
Check valve in oil-equalization circuit	D	Corresponding unit	Oil level low detection and protection	H07	Excessive amount of oil (Leaking side) Insufficient amount of oil (Normal side)	
SV3A valve	E	Corresponding unit	Oil level low detection and protection	H07	Oil level low	
SV3C valve	G	Corresponding unit	Oil level low detection and protection	H07	Oil level low	

Note: "XX" represents sub-code

Outdoor Unit (10, 12, 14, 16, 18HP) Model: MMY-MAP10A6\*, 12A6\*, 1406\*, 1606\*, 18B6\*



\*) C/O models don't have 4-way valve and coil.

However, MMY-MAP\*\*06T8(J)P-E models don't have only 4-way coil.

### List of Check Codes Generated upon Occurrence of Leakage/Clogging in Outdoor Cycle or Oil Circuit Part (MMY-MAP14A6\*, 16A6\*, 1806\*, 2006\* , 2206\*)

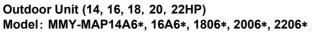
### Clogging

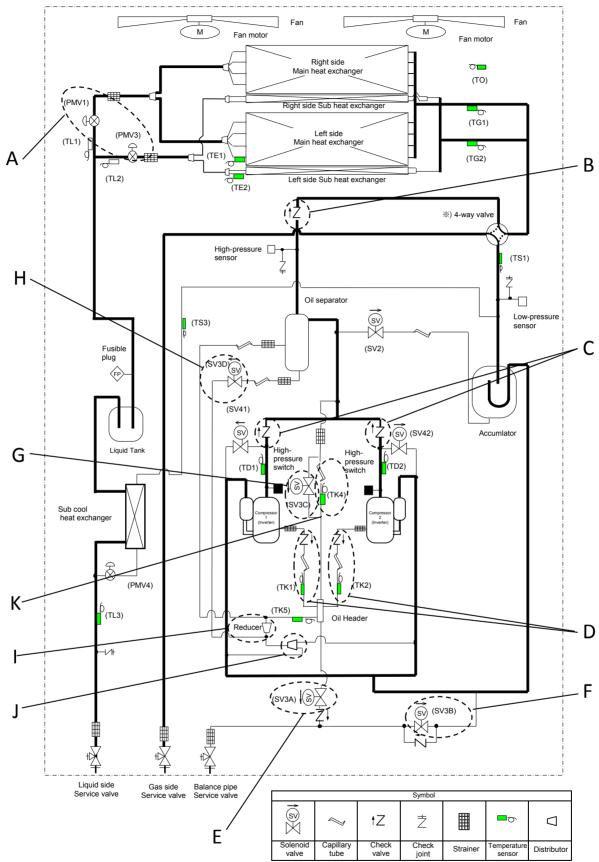
Part	Location of problem (see next page)	Unit generating check code	Detected fault and check co	de	Symptom
Outdoor PMV1, 3	A	Corresponding unit	Activation of high-pressure protection Activation of low-pressure protection Discharge temp. error (TD1) Discharge temp. error (TD2)	P20 H06 P03 P17	Rise of pressure Fall of pressure Rise of discharge temp. (compressor 1) Rise of discharge temp. (compressor 2)
Check valve in discharge pipe convergent section	B Construction of the second s		P20 P04-XX	Abnormal rise of pressure	
Check valve in discharge pipe	С	Corresponding unit	High-pressure SW system error	P04-XX	Abnormal rise of pressure
Check valve in oil-equalization circuit Capillary Strainer	D	Corresponding unit Oil level detection circuit error Oil level low detection and prote		H16-XX H07	Oil circuit error or oil level low
SV3A valve	E	Other connected unit	Oil level low detection and protection	H07	Oil level low
SV3B valve	F	Corresponding unit	Oil level low detection and protection	H07	Oil level low
SV3C valve	G	Other connected unit	Oil level low detection and protection	H07	Oil level low
SV3D valve SV3D valve circuit capillary Strainer	/3D valve circuit capillary H		Oil level low detection and protection	H07	Oil level low
Reducer	I	Corresponding unit	ding unit Oil level detection circuit error H16-0. Oil level low detection and protection H07		Oil circuit error Oil level low Oil level low
Oil return distributor	к	Corresponding unit	Oil level low detection and protection	H07	Oil level low
SV3C bypass capillary	L	Corresponding unit	Oil level detection circuit error	H16-04	Oil circuit error

### Leakage

Part	Location of problem (see next page)	Unit generating check code	Detected fault and check co	Symptom	
Outdoor PMV1		Corresponding unit	Outdoor liquid backflow error Oil level low detection and protection	P13 H07	Refrigerant entrapment
	A	Other connected unit	Discharge temp. error (TD1) Discharge temp. error (TD2)	P03 P17	Rise of discharge temp. (compressor 1) Rise of discharge temp. (compressor 2)
Check valve in discharge pipe convergent section B		Corresponding unit	it Oil level low detection and protection Compressor breakdown Compressor error (lockup)		Refrigerant entrapment
Check valve in discharge pipe C		Corresponding unit	Oil level low detection and protection Compressor breakdown Compressor error (lockup)	H07 H01-XX H02-XX	Refrigerant entrapment
Check valve in oil-equalization circuit	D	Corresponding unit	Oil level low detection and protection	H07	Excessive amount of oil (Leaking side) Insufficient amount of oil (Normal side)
SV3A valve	E	Corresponding unit	Oil level low detection and protection	H07	Oil level low
SV3C valve	G	Corresponding unit	Oil level low detection and protection	H07	Oil level low

Note: "XX" represents sub-code



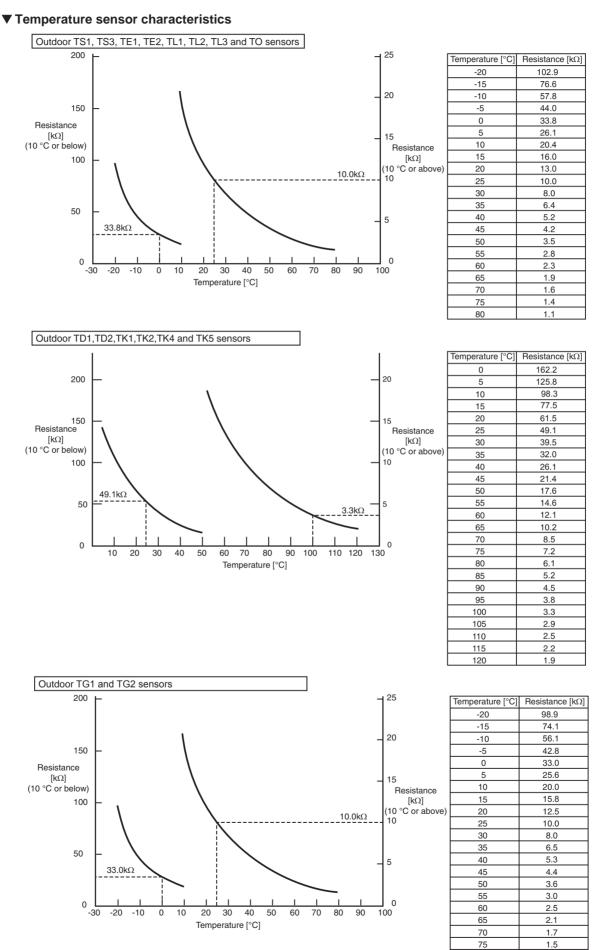


※) C/O models don't have 4-way valve and coil.

However, MMY-MAP\*\*06T8(J)P-E models don't have only 4-way coil.

### 8-10. Sensor Characteristics

### **Outdoor Unit**



80

1.3

### **Outdoor Unit**

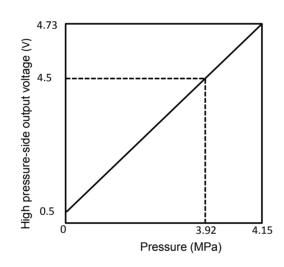
### ▼ Pressure sensor characteristics

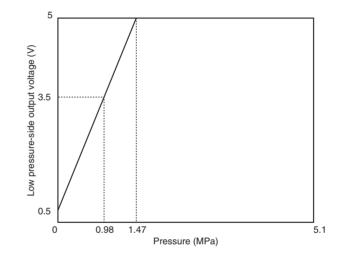
• Input/output wiring summary

Pin No.	High pressu	re side (Pd)	Low pressure side (Ps)			
FIII NO.	Input/output name	Lead wire color	Input/output name	Lead wire color		
1	OUTPUT	White	—	_		
2	—	—	OUTPUT	White		
3	GND	Black	GND	Black		
4	+5V	Red	+5V	Red		

### • Output voltage vs. pressure

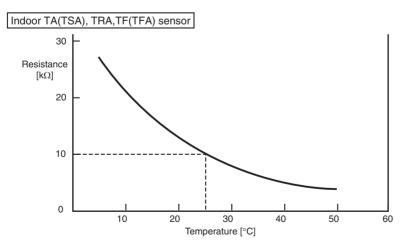
High pressure side (Pd)	Low pressure side (Ps)
0.5~4.5V	0.5~3.5V
0~3.92MPa	0~0.98MPa



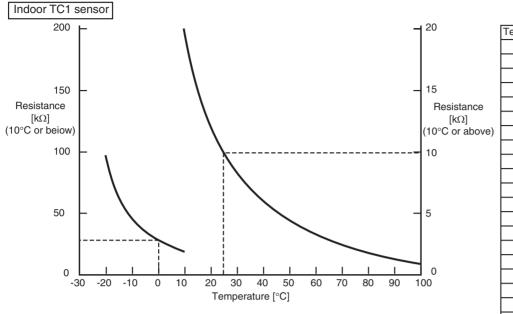


### Indoor Unit

### ▼ Temperature sensor characteristics



Temperature [°C]	Resistance [kΩ]
0	33.8
5	26.1
10	20.4
15	16.0
20	12.6
25	10.0
30	8.0
35	6.4
40	5.2
45	4.2
50	3.5
55	2.8
60	2.3



	Temperature [°C]	Resistance [kΩ]
	-20	98.3
	-15	73.7
	-10	55.8
	-5	42.6
	0	32.8
	5	25.5
)	10	20.0
	15	15.7
	20	12.5
	25	10.0
	30	8.1
	35	6.5
	40	5.3
	45	4.4
	50	3.6
	55	3.0
	60	2.5
	65	2.1
	70	1.7
	75	1.5
	80	1.2
	85	1.1
	90	0.9
	95	0.8
	100	0.7

102.9

76.6 57.7

44.0

38.8

26.1

20.4

16.0

12.6

10.0

8.0

6.4

5.2

4.2

3.5

2.8

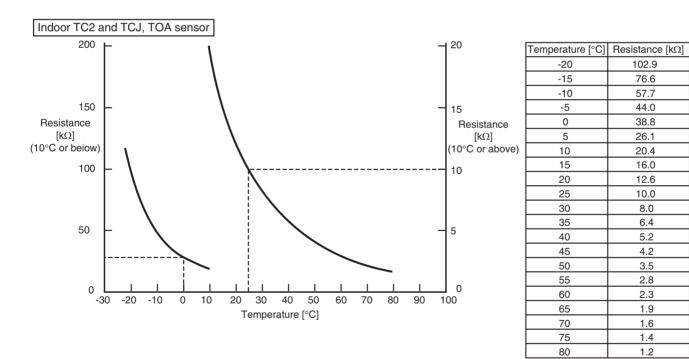
2.3

1.9

1.6

1.4

1.2



### 8-11. Pressure Sensor Output Check

### **Outdoor Unit**

### ▼ Pd sensor characteristics

0 to 4.41 MPa (0.5 to 4.73V output for 0 to 4.15 MPa)

Voltage readings across pins 2 and 3 of CN501 on indoor unit main P.C. board (with negative-side probe of multimeter placed on pin 3)

VOLT	Pd	Pd												
	(MPa)	(kg/cm <sup>2</sup> )												
0.00	0.00	0.0	1.00	0.49	5.0	1.99	1.46	14.9	2.99	2.44	24.9	3.98	3.42	34.8
0.02	0.00	0.0	1.02	0.51	5.2	2.01	1.48	15.1	3.01	2.46	25.1	4.00	3.44	35.0
0.04	0.00	0.0	1.04	0.53	5.4	2.03	1.50	15.3	3.03	2.48	25.3	4.02	3.45	35.2
0.06	0.00	0.0	1.06	0.54	5.5	2.05	1.52	15.5	3.05	2.50	25.5	4.04	3.48	35.4
0.08	0.00	0.0	1.07	0.56	5.7	2.07	1.54	15.7	3.07	2.52	25.7	4.06	3.49	35.6
0.10	0.00	0.0	1.09	0.58	5.9	2.09	1.56	15.9	3.09	2.54	25.9	4.08	3.51	35.8
0.12	0.00	0.0	1.11	0.60	6.1	2.11	1.58	16.1	3.11	2.56	26.1	4.10	3.53	36.0
0.14	0.00	0.0	1.13	0.62	6.3	2.13	1.60	16.3	3.13	2.57	26.3	4.12	3.55	36.2
0.16	0.00	0.0	1.15	0.64	6.5	2.15	1.62	16.5	3.15	2.59	26.4	4.14	3.57	36.4
0.18	0.00	0.0	1.17	0.66	6.7	2.17	1.64	16.7	3.16	2.61	26.6	4.16	3.59	36.6
0.20	0.00	0.0	1.19	0.68	6.9	2.19	1.66	16.9	3.18	2.63	26.8	4.18	3.61	36.8
0.22	0.00	0.0	1.21	0.70	7.1	2.21	1.67	17.1	3.20	2.65	27.0	4.20	3.63	37.0
0.23	0.00	0.0	1.23	0.72	7.3	2.23	1.69	17.3	3.22	2.67	27.2	4.22	3.65	37.2
0.25	0.00	0.0	1.25	0.74	7.5	2.25	1.71	17.5	3.24	2.69	27.4	4.24	3.67	37.4
0.27	0.00	0.0	1.27	0.76	7.7	2.27	1.73	17.7	3.26	2.71	27.6	4.26	3.69	37.6
0.29	0.00	0.0	1.29	0.77	7.9	2.29	1.75	17.9	3.28	2.73	27.8	4.28	3.70	37.8
0.31	0.00	0.0	1.31	0.79	8.1	2.31	1.77	18.0	3.30	2.75	28.0	4.30	3.72	38.0
0.33	0.00	0.0	1.33	0.81	8.3	2.32	1.79	18.2	3.32	2.77	28.2	4.32	3.74	38.2
0.35	0.00	0.0	1.35	0.83	8.5	2.34	1.81	18.4	3.34	2.79	28.4	4.34	3.76	38.4
0.37	0.00	0.0	1.37	0.85	8.7	2.36	1.83	18.6	3.36	2.80	28.6	4.36	3.78	38.6
0.39	0.00	0.0	1.39	0.87	8.9	2.38	1.85	18.8	3.38	2.82	28.8	4.38	3.80	38.8
0.41	0.00	0.0	1.41	0.89	9.1	2.40	1.87	19.0	3.40	2.84	29.0	4.40	3.82	38.9
0.43	0.00	0.0	1.43	0.91	9.3	2.42	1.89	19.2	3.42	2.86	29.2	4.41	3.84	39.1
0.45	0.00	0.0	1.45	0.93	9.5	2.44	1.90	19.4	3.44	2.88	29.4	4.43	3.86	39.3
0.47	0.00	0.0	1.47	0.95	9.6	2.46	1.92	19.6	3.46	2.90	29.6	4.45	3.88	39.5
0.49	0.00	0.0	1.48	0.97	9.8	2.48	1.94	19.8	3.48	2.92	29.8	4.47	3.90	39.7
0.51	0.01	0.1	1.50	0.99	10.0	2.50	1.96	20.0	3.50	2.94	30.0	4.49	3.92	39.9
0.53	0.03	0.3	1.52	1.00	10.2	2.52	1.98	20.2	3.52	2.96	30.2	4.51	3.93	40.1
0.55	0.05	0.5	1.54	1.02	10.4	2.54	2.00	20.4	3.54	2.98	3.04	4.53	3.95	40.3
0.57	0.07	0.7	1.56	1.04	10.6	2.56	2.02	20.6	3.56	3.00	30.5	4.55	3.97	40.5
0.59	0.08	0.9	1.58	1.06	10.8	2.58	2.04	20.8	3.57	3.02	30.7	4.57	3.99	40.7
0.61	0.10	1.1	1.60	1.08	11.0	2.60	2.06	21.0	3.59	3.03	30.9	4.59	4.01	40.9
0.63	0.12	1.3	1.62	1.10	11.2	2.62	2.08	21.2	3.61	3.05	31.1	4.61	4.03	41.1
0.65	0.14	1.4	1.64	1.12	11.4	2.64	2.10	21.4	3.63	3.07	31.3	4.63	4.05	41.3
0.66	0.16	1.6	1.66	1.14	11.6	2.66	2.12	21.6	3.65	3.09	31.5	4.65	4.07	41.5
0.68	0.18	1.8	1.68	1.16	11.8	2.68	2.13	21.8	3.67	3.11	31.7	4.67	4.09	41.7
0.70	0.20	2.0	1.70	1.18	12.0	2.70	2.15	22.0	3.69	3.13	31.9	4.69	4.11	41.9
0.72	0.22	2.2	1.72	1.20	12.2	2.72	2.17	22.2	3.71	3.15	32.1	4.71	4.13	42.1
0.74	0.24	2.4	1.74	1.21	12.4	2.73	2.19	22.3	3.73	3.17	32.3	4.73	4.15	42.3
0.76	0.26	2.6	1.76	1.23	12.6	2.75	2.21	22.5	3.75	3.19	32.5			
0.78	0.28	2.8	1.78	1.25	12.8	2.77	2.23	22.7	3.77	3.21	32.7			
0.80	0.30	3.0	1.80	1.27	13.0	2.79	2.25	22.9	3.79	3.23	32.9			
0.82	0.31	3.2	1.82	1.29	13.2	2.81	2.27	23.1	3.81	3.25	33.1			
0.84	0.33	3.4	1.84	1.31	13.4	2.83	2.29	23.3	3.83	3.26	33.3			
0.86	0.35	3.6	1.86	1.33	13.6	2.85	2.31	23.5	3.85	3.28	33.5			
0.88	0.37	3.8	1.88	1.35	13.8	2.87	2.33	23.7	3.89	3.30	33.7			
0.90	0.39	4.0	1.90	1.37	13.9	2.89	2.35	23.9	3.89	3.32	33.9			
0.92	0.41	4.2	1.91	1.39	14.1	2.91	2.36	24.1	3.91	3.34	34.1			
0.94	0.43	4.4	1.93	1.41	14.3	2.93	2.38	24.3	3.93	3.36	34.3			
0.96	0.45	4.6	1.95	1.43	14.5	2.95	2.40	24.5	3.95	3.38	34.5			
0.98	0.47	4.8	1.97	1.44	14.7	2.97	2.42	24.7	3.97	3.40	34.7			

### **Outdoor Unit**

### ▼ Ps sensor characteristics

0 to 1.47 MPa (0.5 to 5V output for 0 to 1.47 MPa)

Voltage readings across pins 2 and 3 of CN500 on indoor unit main P.C. board (with negative-side probe of multimeter placed on pin 3)

VOLT	Ps	Ps												
	(MPa)	(kg/cm <sup>2</sup> )												
0.00	0.00	0.0	1.00	0.16	1.7	1.99	0.49	5.0	2.99	0.81	8.3	3.98	1.14	11.6
0.02	0.00	0.0	1.02	0.17	1.7	2.01	0.49	5.0	3.01	0.82	8.4	4.00	1.15	11.7
0.04	0.00	0.0	1.04	0.18	1.8	2.03	0.50	5.1	3.03	0.83	8.4	4.02	1.15	11.7
0.06	0.00	0.0	1.06	0.18	1.8	2.05	0.51	5.2	3.05	0.83	8.5	4.04	1.16	11.8
0.08	0.00	0.0	1.07	0.19	1.9	2.07	0.51	5.2	3.07	0.84	8.6	4.06	1.17	11.9
0.10	0.00	0.0	1.09	0.19	2.0	2.09	0.52	5.3	3.09	0.85	8.6	4.08	1.17	11.9
0.12	0.00	0.0	1.11	0.20	2.0	2.11	0.53	5.4	3.11	0.85	8.7	4.10	1.18	12.0
0.14	0.00	0.0	1.13	0.21	2.1	2.13	0.53	5.4	3.13	0.86	8.8	4.12	1.18	12.1
0.16	0.00	0.0	1.15	0.21	2.2	2.15	0.54	5.5	3.15	0.86	8.8	4.14	1.19	12.1
0.18	0.00	0.0	1.17	0.22	2.2	2.17	0.55	5.6	3.16	0.87	8.9	4.16	1.20	12.2
0.20	0.00	0.0	1.19	0.23	2.3	2.19	0.55	5.6	3.18	0.88	8.9	4.18	1.20	12.3
0.22	0.00	0.0	1.21	0.23	2.4	2.21	0.56	5.7	3.20	0.88	9.0	4.20	1.21	12.3
0.23	0.00	0.0	1.23	0.24	2.4	2.23	0.56	5.8	3.22	0.89	9.1	4.22	1.22	12.4
0.25	0.00	0.0	1.25	0.25	2.5	2.25	0.57	5.8	3.24	0.90	9.1	4.24	1.22	12.5
0.27	0.00	0.0	1.27	0.25	2.6	2.27	0.58	5.9	3.26	0.90	9.2	4.26	1.23	12.5
0.29	0.00	0.0	1.29	0.26	2.6	2.29	0.58	6.0	3.28	0.91	9.3	4.28	1.24	12.6
0.31	0.00	0.0	1.31	0.26	2.7	2.31	0.59	6.0	3.30	0.92	9.3	4.30	1.24	12.7
0.33	0.00	0.0	1.33	0.27	2.8	2.32	0.60	6.1	3.32	0.92	9.4	4.32	1.25	12.7
0.35	0.00	0.0	1.35	0.28	2.8	2.34	0.60	6.1	3.34	0.93	9.5	4.34	1.25	12.8
0.37	0.00	0.0	1.37	0.28	2.9	2.36	0.61	6.2	3.36	0.94	9.5	4.36	1.26	12.9
0.39	0.00	0.0	1.39	0.29	3.0	2.38	0.62	6.3	3.38	0.94	9.6	4.38	1.27	12.9
0.41	0.00	0.0	1.41	0.30	3.0	2.40	0.62	6.3	3.40	0.95	9.7	4.40	1.27	13.0
0.43	0.00	0.0	1.43	0.30	3.1	2.42	0.63	6.4	3.42	0.95	9.7	4.41	1.28	13.0
0.45	0.00	0.0	1.45	0.31	3.2	2.44	0.64	6.5	3.44	0.96	9.8	4.43	1.29	13.1
0.47	0.00	0.0	1.47	0.32	3.2	2.46	0.64	6.5	3.46	0.97	9.9	4.45	1.29	13.2
0.49	0.00	0.0	1.48	0.32	3.3	2.48	0.65	6.6	3.48	0.97	9.9	4.47	1.30	13.2
0.51	0.00	0.0	1.50	0.33	3.3	2.50	0.65	6.7	3.50	0.98	10.0	4.49	1.31	13.3
0.53	0.01	0.1	1.52	0.34	3.4	2.52	0.66	6.7	3.52	0.99	10.1	4.51	1.31	13.4
0.55	0.02	0.2	1.54	0.34	3.5	2.54	0.67	6.8	3.54	0.99	10.1	4.53	1.32	13.4
0.57	0.02	0.2	1.56	0.35	3.5	2.56	0.67	6.9	3.56	1.00	10.2	4.55	1.32	13.5
0.59	0.03	0.3	1.58	0.35	3.6	2.58	0.68	6.9	3.57	1.01	10.2	4.57	1.33	13.6
0.61	0.03	0.4	1.60	0.36	3.7	2.60	0.69	7.0	3.59	1.01	10.3	4.59	1.34	13.6
0.63	0.04	0.4	1.62	0.37	3.7	2.62	0.69	7.1	3.61	1.02	10.4	4.61	1.34	13.7
0.65	0.05	0.5	1.64	0.37	3.8	2.64	0.70	7.1	3.63	1.02	10.4	4.63	1.35	13.8
0.66	0.05	0.5	1.66	0.38	3.9	2.66	0.71	7.2	3.65	1.03	10.5	4.65	1.36	13.8
0.68	0.06	0.6	1.68	0.39	3.9	2.68	0.71	7.3	3.67	1.04	10.6	4.67	1.36	13.9
0.70	0.07	0.7	1.70	0.39	4.0	2.70	0.72	7.3	3.69	1.04	10.6	4.69	1.37	14.0
0.72	0.07	0.7	1.72	0.40	4.1	2.72	0.72	7.4	3.71	1.05	10.7	4.71	1.38	14.0
0.74	0.08	0.8	1.74	0.41	4.1	2.73	0.73	7.4	3.73	1.06	10.8	4.73	1.38	14.1
0.76	0.09	0.9	1.76	0.41	4.2	2.75	0.74	7.5	3.75	1.06	10.8	4.75	1.39	14.2
0.78	0.09	0.9	1.78	0.42	4.3	2.77	0.74	7.6	3.77	1.07	10.9	4.77	1.39	14.2
0.80	0.10	1.0	1.80	0.42	4.3	2.79	0.75	7.6	3.79	1.08	11.0	4.79	1.40	14.3
0.82	0.11	1.1	1.82	0.43	4.4	2.81	0.76	7.7	3.81	1.08	11.0	4.81	1.41	14.3
0.84	0.11	1.1	1.84	0.44	4.5	2.83	0.76	7.8	3.83	1.09	11.1	4.82	1.41	14.4
0.86	0.12	1.2	1.86	0.44	4.5	2.85	0.77	7.8	3.85	1.09	11.2	4.84	1.42	14.5
0.88	0.12	1.3	1.88	0.45	4.6	2.87	0.78	7.9	3.89	1.10	11.2	4.86	1.43	14.5
0.90	0.13	1.3	1.90	0.46	4.6	2.89	0.78	8.0	3.89	1.11	11.3	4.88	1.43	14.6
0.92	0.14	1.4	1.91	0.46	4.7	2.91	0.79	8.0	3.91	1.11	11.4	4.90	1.44	14.7
0.94	0.14	1.5	1.93	0.47	4.8	2.93	0.79	8.1	3.93	1.12	11.4	4.92	1.45	14.7
0.96	0.15	1.5	1.95	0.48	4.8	2.95	0.80	8.2	3.95	1.13	11.5	4.94	1.45	14.8
0.98	0.16	1.6	1.97	0.48	4.9	2.97	0.81	8.2	3.97	1.13	11.5	4.96	1.46	14.9
												4.98	1.47	14.9

## **9** BACKUP OPERATION (EMERGENCY OPERATION)

This product offers backup modes of operation to tide over certain emergency situations. If a fault occurs in one of the compressors, it is possible to operate the system on an emergency basis by operating only the remaining compressor, (compressor backup operation).

If one of the outdoor units fails in a combined outdoor unit system, the system can be operated on an emergency basis by keeping only the remaining outdoor unit(s), (outdoor unit backup operation).

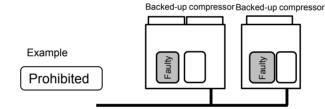
Perform backup operation setting in accordance with the procedure described below.

### 9-1. Note for Backup Operation

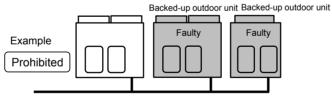
The method of backup operation differs according to the contents of fault as shown in the table below.

Contents of fault	Method of backup operation	Setting procedure	
One of the compressors in the same unit fails (see Note 1)	Compressor backup (see Note 2)	Go to 9-2.	
All the compressors in the same unit fail	Outdoor unit backup or cooling-	Go to 9-3. or 9-4.	
A fault occurs in a compressor motor coil (e.g. a layer short-circuit)	season outdoor unit backup (see Notes 1, 3, 4 and 5)		
A fault occurs in a refrigerating cycle part, fan or related part, or electrical part			
A fault occurs in a temperature sensor or pressure sensor			

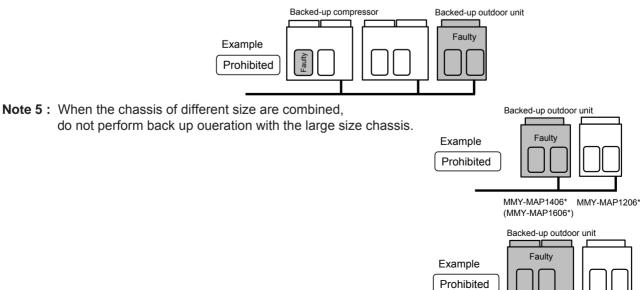
- **Note 1:** If the compressor has failed due to a fault in its motor coil (e.g. a layer short-circuit), do not perform compressor backup operation because of severe oil degradation. It could damage other outdoor units.
- **Note 2:** Keep the number of backed-up outdoor units under compressor backup operation to one in the system (single refrigerant line). As for MMY-MAP1806\*, MMY-MAP2006\* and MMY-MAP2206, the backup operation of compressor cannot be done.



**Note 3:** Keep the number of backed-up outdoor units under outdoor unit backup operation to one in the system (single refrigerant line).



Note 4: It is prohibited to combine compressor backup operation and outdoor unit backup operation.



MMY-MAP1806\* MMY-MAP1606\* (MMY-MAP2006\*)

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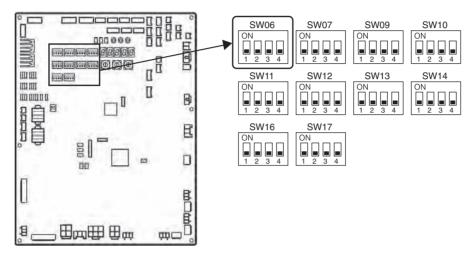
### 9-2. Compressor Backup Operation Setting

### <Outline>

If a fault occurs to one of the compressors installed in outdoor unit, follow the procedure described below to back up the faulty compressor by using the remaining, normal compressor.

### <Work Procedure>

- (1) Turn off the power supply to all the outdoor units connected to the system.
- (2) Set the DIP switches of SW06, provided on the interface P.C. board of the outdoor unit with the faulty compressor, as shown in the table below.



	SW06			
	Bit 1	Bit 2	Bit 3	Bit 4
Factory default setting	OFF	OFF	OFF	OFF
When compressor No.1 (front left) is faulty	ON	OFF	OFF	OFF
When compressor No.2 (front right) is faulty	OFF	ON	OFF	OFF

(3) Change the connection of wiring between Comp-IPDU and Fan-IPDU, as shown in the below.

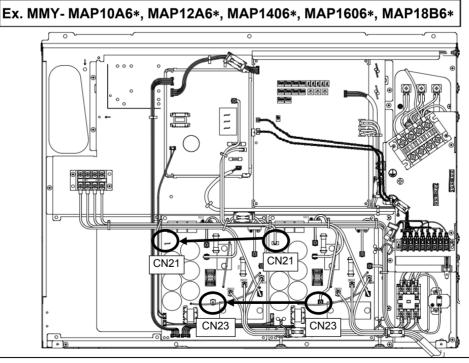
### Outdoor Unit (8, 10, 12, 14, 16, 18HP) Model: MMY-MAP0806\*, MAP1006\*, MAP1206\*, MAP14B6\*, MAP10A6\*, MAP12A6\*, MAP1406\*, MAP1606\*, MAP18B6\*

1.When compressor No.1 (front left) is faulty : No change the connection of wiring 2.When compressor No.2 (front right) is faulty :

Change the connection of wiring between Como-IPDU and Fan-IPDU as shown in the below.



Change the connection of wiring which is connected to the CN21, 23 of Comp-IPDU2 • Change to CN21 of Comp-IPDU1 from CN21 of Comp-IPDU2 • Change to CN23 of Comp-IPDU2 from CN23 of Comp-IPDU2



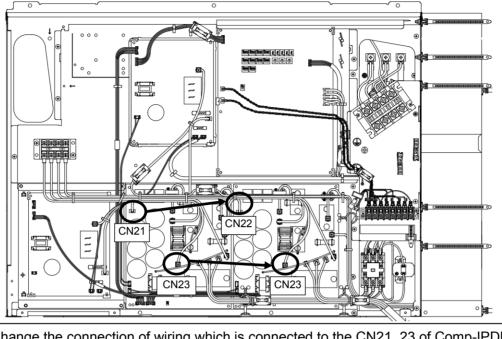
Change the connection of wiring which is connected to the CN21, 23 of Comp-IPDU2
Change to CN21 of Comp-IPDU1 from CN21 of Comp-IPDU2
Change to CN23 of Comp-IPDU2 from CN23 of Comp-IPDU2

### Outdoor Unit (14, 16, 18, 20, 22HP)

### Model: MMY-MAP14A6\*, MAP16A6\*, MAP1806\*, MAP2006\*, MAP2206\*

1.When compressor No.1 (front left) is faulty :

Change the connection of wiring between Comp-IPDU and Fan-IPDU as shown in the below.

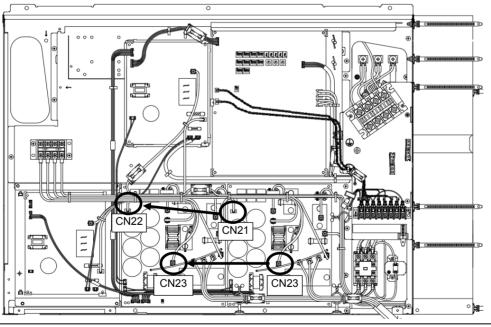


Change the connection of wiring which is connected to the CN21, 23 of Comp-IPDU1

- Change to CN22 of Comp-IPDU2 from CN21 of Comp-IPDU1
- Change to CN23 of Comp-IPDU2 from CN23 of Comp-IPDU1
- (Tighten two wirings together with screw terminal)

2.When compressor No.2 (front right) is faulty :

Change the connection of wiring between Comp-IPDU and Fan-IPDU as shown in the below.



### Change the connection of wiring which is connected to the CN21, 23 of Comp-IPDU2 Change to CN22 of Comp-IPDU1 from CN21 of Comp-IPDU2

- Change to CN23 of Comp-IPDU1 from CN23 of Comp-IPDU2
- (Tighten two wirings together with screw terminal)

(4) Turn on the power supply to all the units connected to the system.

This is the end of compressor backup operation setting.

### 9-3. Outdoor Unit Backup Operation Setting

### <Outline>

This product allows outdoor unit backup operation setting to be performed either at the header unit or a follower unit. If any of the fault modes specified below occurs to one of the outdoor units in a multi-outdoor unit system, proceed with outdoor unit backup operation.

- A compressor failure (e.g. a layer short-circuit or a compressor failure in which no compressor is available to back up the faulty compressor)
- A failure of a pressure sensor (Pd or Ps) or a temperature sensor (TD1, TD2, TS1, TS3, TE1, TE2, TG1, TG2, TK1, TK2, TK4, TK5, TL1, TL2 or TL3)

Note: Keep the number of backed-up outdoor units to one in the system (single refrigerant line).

## 9-3-1. Follower outdoor unit backup operation setting (failure of follower outdoor unit)

### <Work procedure>

(1) Turn off the power supply to all the indoor and outdoor units connected to the system.

### [Setup of failed follower outdoor unit]

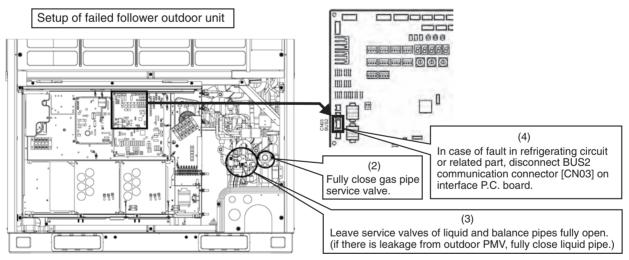
(2) Fully close the gas pipe service valve of the failed outdoor unit.

- (3) Leave the service valves of the liquid and balance pipe fully open (to prevent refrigerant stagnation in the unit). However, if there is a leakage from an outdoor PMV (unable to close), fully close the liquid pipe service valve.
- (4) <In case of fault in compressor, electrical part, I/F P.C. board, or IPDU P.C. board>

From this point on, keep the power supply to the failed unit off.

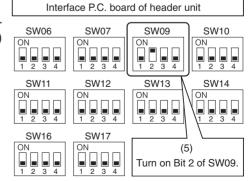
<In case of fault in refrigerating circuit or related part (pressure sensor, temperature sensor, refrigerating cycle part, or fan system part)>

Disconnect the connector [CN03] for outdoor-outdoor communication (BUS2) provided on the interface P.C. board.



### [Setup of header unit]

(5) Turn on Bit 2 of SW09 on the interface P.C. board of the header unit. (Setting to prevent connected indoor units capacity over error. (E16))



(6) Turn on the power supply to all the units connected to the system other than the failed follower unit. Determine what to do with the power supply to the failed follower unit in the following manner. <In case of fault in compressor, electrical part, I/F P.C. board, or IPDU P.C. board> Leave the power supply off.

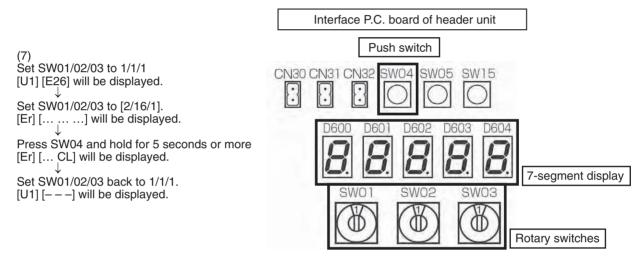
<In case of fault in refrigerating circuit or related part (pressure sensor, temperature sensor, refrigerating cycle part, or fan system part)>

Turn on the power supply to protect the compressor (by turning on the case heater).

(When the power supply to the unit is turned on, [E19] (error in the number of outdoor header units) will be displayed on the 7-segment display. However, this will not cause any problems.)

(7) Perform settings needed to gain permission for backup operation from the header unit (error clearance).

- 1) Set SW01/02/03 on the interface P.C. board to 1/1/1 and confirm that [U1] [E26] (dropping out of an outdoor unit) is displayed on the 7-segment display.
- 2) Set SW01/02/03 on the interface P.C. board to 2/16/1. Upon confirming that [Er] [... ... ...] is displayed on the 7-segment display, press SW04 and hold for 5 seconds or more.
- 3) [Er] [... CL] (error clearance completed) will be displayed on the 7-segment display.
- 4) Set SW01/02/03 back to 1/1/1. (The display should change to [U1] [---].)



This is the end of follower outdoor unit backup operation setting. Check the operation.

## 9-3-2. Header outdoor unit backup operation setting (failure of header outdoor unit)

### <Work procedure>

(1) Turn off the power supply to all the units connected to the system at the source.

### [Setup of failed header outdoor unit]

(2) Fully close the gas pipe service valve of the failed outdoor unit.

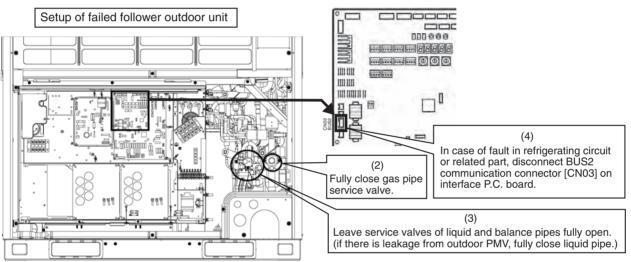
(3) Leave the service values of the liquid and balance pipes fully open (to prevent refrigerant stagnation in the failed outdoor unit).

However, if there is a leakage from an outdoor PMV (unable to close), fully close the liquid pipe service valve. (4) <In case of fault in compressor, electrical part, I/F P.C. board, or IPDU P.C. board>

From this point on, keep the power supply to the failed unit off.

<In case of fault in refrigerating circuit or related part (pressure sensor, temperature sensor, refrigerating cycle part, or fan system part)>

Disconnect the connector [CN03] for outdoor-outdoor communication (BUS2) provided on the interface P.C. board.



### [Selection of new header unit]

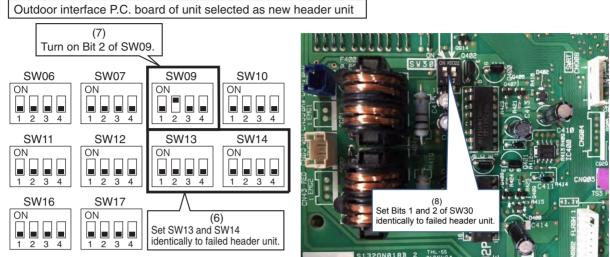
(5) Select a new header unit from the follower units on the basis of the following criteria:

- If only one follower unit is connected, select it as the header unit.
- If two follower units are connected, select the follower unit that is nearest to the failed header unit.

### [Setup of new header unit]

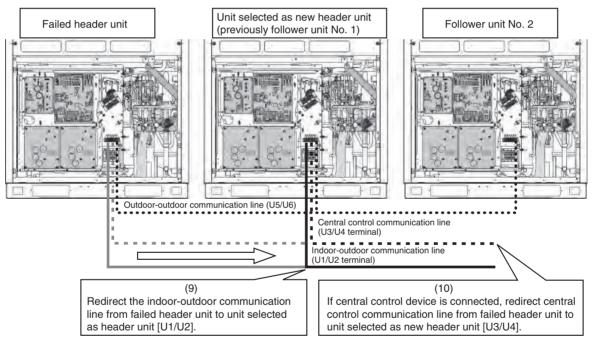
- (6) Set SW13 and SW14 on the interface P.C. board same as the setting of failed header unit (refrigerant line address setting).
- (7) Turn on Bit 2 of SW09 on the interface P.C. board. (Setting to prevent connected indoor unit capacity over error. (E16))

(8) Set Bits 1 and 2 of SW30 on the interface P.C. board same as that of the failed header unit (terminator resistance setting).



#### [Wiring changes to communication line]

- (9) Redirect the indoor-outdoor communication line connected to the failed header unit [U1/U2] to the unit selected as the header unit [U1/U2].
- (10) If a central control device is connected, connect the central control communication line [U3/U4] to the communication line terminal of the unit selected as the new header unit [U3/U4], and connect up the tie connector between the [U1/U2] and [U3/U4] terminals.



- (11)Turn on the power supply to all the units connected to the system other than the failed unit.
  - Determine what to do with the power supply to the failed unit in the following manner.

<In case of fault in compressor, electrical part, I/F P.C. board, or IPDU P.C. board> Leave the power supply off.

<In case of fault in refrigerating circuit or related part (pressure sensor, temperature sensor, refrigerating cycle part, or fan system part)>

Turn on the power supply to protect the compressor (by turning on the case heater).

(When the power supply to the unit is turned on, [E19] (error in the number of outdoor header units) will be displayed on the 7-segment display. However, this will not cause any problems.)

This is the end of header outdoor unit backup operation setting. Check the operation.

# 9-4. Cooling-Season Outdoor Unit Backup Operation Setting

### <Outline>

Limited to summer and other situations where there is no need for heating operation, this function makes it possible to get backup operation up and running quickly without going through the normal setup procedure, regardless of which type of outdoor unit has failed, the header unit or a follower unit.

In this backup operation, the system behaves in exactly the same way as described in the "Outdoor Unit Backup Operation Setting" section, except that it cannot perform heating operation.

**Note 1:** When the system is set up for this function, heating operation is not available.

("HEATING STANDBY" displayed on the remote controller.)

**Note 2:** If the unit failure has been caused by a fault in the interface P.C. board or electric circuit, this function is not available. In that case, follow the procedure specified in the "Outdoor Unit Backup Operation Setting" section.

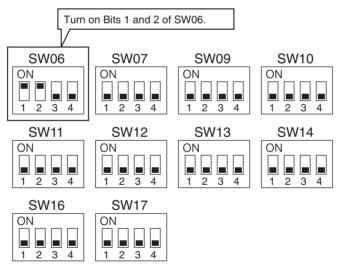
### <Work procedure>

(1) Turn off the power supply to all the units connected to the system.

### [Setup of failed outdoor unit]

Regardless of whether the failed outdoor unit is the header unit or a follower unit, there is no difference in the setup procedure.

- (2) Turn on Bits 1 and 2 of SW06 provided on the interface P.C. board.
- (3) If there is a leakage from an outdoor PMV (unable to close), fully close the liquid pipe service valve.
- (4) Turn on the power supply to all the units connected to the system.
- If the fault involves poor insulation of a compressor motor, remove the compressor leads before the power is turned on.



This is the end of cooling-season outdoor unit backup operation setting.

## **10** OUTDOOR UNIT REFRIGERANT RECOVERY METHOD

### 10-1. Refrigerant Recovery from Failed Outdoor Unit (Pump-Down)

This product supports refrigerant pump-down, a function which allows refrigerant to be recovered from an outdoor unit in need of repair using a normal outdoor unit in a system featuring multiple outdoor units.

### 10-1-1. Note for refrigerant recovery operation

When performing pump-down operation, take note of the following matters:

- **Note 1:** The pump-down refrigerant recovery rate changes with outside temperature and other factors. After pump-down is completed, recover any residual gas using a refrigerant recovery device, etc., and be sure to measure the amount of recovered refrigerant. (The refrigerant recovery rate can be improved by heating the accumulator of the outdoor unit to be repaired during pump-down operation.)
- **Note 2:** If pump-down has been performed, the system cannot be operated until the faulty outdoor unit is repaired.

(Continued operation would be impossible due to a refrigerant overcharge.)

**Note 3:** If outdoor PMVs 1 and 3 both happen to be faulty (unable to open) the refrigerant in the heat exchangers cannot be recovered. In that case, recover any residual gas in the heat exchangers using a tube piercing valve or some other tool. After a pump-down operation, do not perform any brazing until the residual gas in the heat exchangers is recovered.

## 10-1-2. Refrigerant recovery procedure A (Case of no outdoor unit backup operation setting)

### <Work procedure>

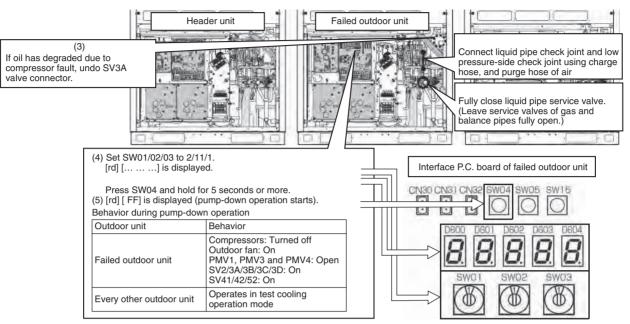
Turn on the power supply to the system at the source, but leave the system switched off.

If the fault involves poor insulation of a compressor motor, remove the motor leads before the power is turned on. [Setup of failed outdoor unit]

- (1) Connect the check joint of liquid pipe and the low pressure-side check joint using a charge hose, and purge the hose of air (to recover refrigerant from the liquid tank and heat exchangers).
- (2) Fully close the liquid pipe service valve of the failed outdoor unit. (Leave the service valves of the gas and balance pipes fully open.)
- (3) If the oil is likely to has degraded due to a compressor fault, disconnect the SV3A valve connector of the failed outdoor unit (to prevent the degraded oil from flowing into other outdoor units).
- (4) Set SW01/02/03 on the interface P.C. board of the failed outdoor unit to 2/11/1. After [rd] [.....] is displayed on the 7-segment display, press SW04 and hold for 5 seconds or more.

(5) [rd] [... FF] will be displayed on the 7-segment display, and pump-down operation will start.

\* To put the operation on hold midway, turn off the power supply to all the outdoor units, or press SW05 on the interface P.C. board.



(6) Approx. 10 minutes after the system starts up, fully close the gas pipe service valve of the failed outdoor unit.(7) Press SW04 of the failed outdoor unit to have pressure data (MPa) displayed.

(The display switches each time SW04 is pressed.) **Display Example** 



#### [Selection of outdoor unit for pressure adjustment]

(8) Of all outdoor units operating in the pump-down mode, select the one with the lowest unit No. as an outdoor unit for pressure adjustment.

Identifying Unit No.

The unit No. is the number displayed on the 7-segment display when SW01/02/03 are set to 1/1/1. ([U#] [- - -]: # represents the unit No.)

#### [Setup of outdoor units other than unit for pressure adjustment and failed unit]

(9) Leaving the balance pipes of the unit for pressure adjustment and the failed unit fully open, fully close the balance pipe service valves of all other outdoor units.

#### [Setup of outdoor unit for pressure adjustment]

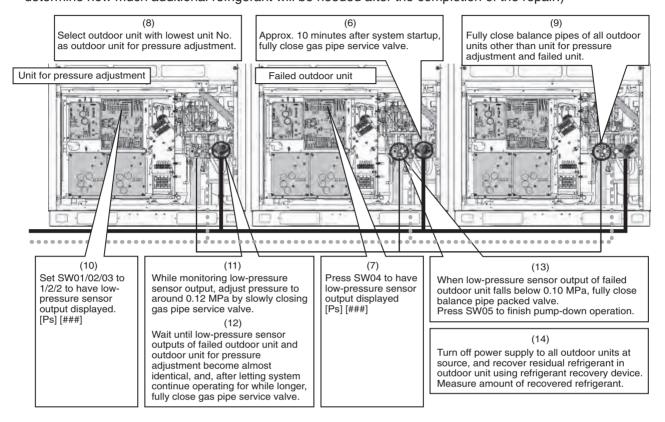
(10)Set SW01/02/03 on the interface P.C. board of the outdoor unit for pressure adjustment to 1/2/2.

- (11)As the low-pressure sensor output is displayed on the 7-segment display, adjust the pressure to around 0.12 MPa by slowly closing the gas pipe service valve, with checking pressure data.
- (12)Compare the low-pressure sensor outputs of the failed unit with that of the unit for pressure adjustment, and wait until the two pressure readings become almost the same. After letting the system continue operating for a while longer, fully close the gas pipe service valve of the unit for pressure adjustment.

### [Setup of failed outdoor unit]

(13)When the low-pressure sensor output of the failed outdoor unit falls below 0.10MPa, fully close the balance pipe packed valve, and press SW05 on the interface P.C. board to finish the pump-down operation.

(14) Turn off the power supply to all the outdoor units, and recover the residual refrigerant in the outdoor unit using a refrigerant recovery device. Be sure to measure the amount of recovered refrigerant. (This is necessary to determine how much additional refrigerant will be needed after the completion of the repair.)



This is the end of the refrigerant recovery operation.

Set SW01/02/03 of the failed outdoor unit and the outdoor unit for pressure adjustment back to 1/1/1.

## 10-1-3. Refrigerant recovery procedure B (Case of outdoor unit backup operation setting)

### <Outline>

If outdoor unit backup operation setting is performed, <u>use an alternative refrigerant recovery procedure as</u> <u>described below, provided that the power cannot be turned on for the failed outdoor unit.</u> (Refrigerant will be recovered from the failed outdoor unit using the test cooling operation function.)

- **Note 1:** If cooling-season outdoor unit backup operation or outdoor unit backup operation is in progress with the power supply to the failed outdoor unit turned on, follow the procedure described in "10-1-2. Refrigerant recovery procedure A (Case of no outdoor unit backup operation setting)". If outdoor unit backup operation setting is performed with the power supply to the failed outdoor unit turned on, recovery operation can only start after putting the outdoor-outdoor communication connector on the interface P.C. board of that unit [CN03] back to its initial state and resetting the power supply.
- **Note 2:** If the power cannot be turned on the failed outdoor unit, the solenoid valves and PMVs of the unit cannot be turned on, so that it reduces the amount of recovered refrigerant compared to a standard pump-down operation. Recover the residual gas in the unit using a refrigerant recovery device, and be sure to measure the amount of recovered refrigerant.

### <Work procedure>

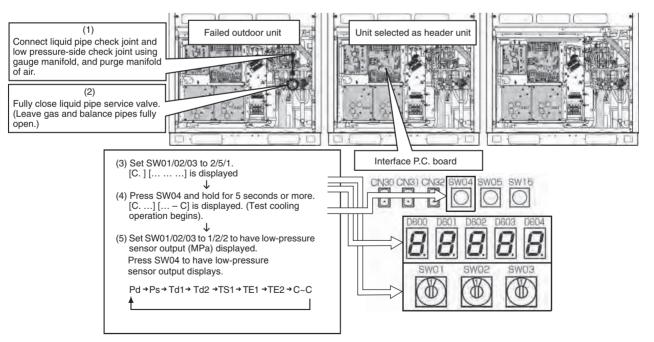
### [Setup of failed outdoor unit]

- (1) Connect the liquid pipe check joint and the low pressure-side check joint using a gauge manifold, and purge the manifold of air (to recover refrigerant from the liquid tank and heat exchangers).
- (2) Fully close the liquid pipe packed valve of the failed outdoor unit.

(Leave the service valve of the gas pipe and the packed valve of the balance pipe fully open.)

[Setup of unit selected as header unit (hereafter "header outdoor unit")]

- (3) Set SW01/02/03 on the interface P.C. board of the header outdoor unit to 2/5/1. After [C.] [.....] is displayed on the 7-segment display, press SW04 and hold for 5 seconds or more.
- (4) After [C. ...] [... C] is displayed on the 7-segment display, the system starts operating in the test cooling operation mode.
- (5) Set SW01/02/03 on the interface P.C. board of the header outdoor unit to 1/2/2 to have the low-pressure sensor output (MPa) displayed on the 7-segment display.



(6) Approx. 10 minutes after the system starts up, fully close the gas pipe service value of the failed outdoor unit. **[Selection of outdoor unit for pressure adjustment]** 

(7) Select the header unit as the unit for pressure adjustment.

### [Setup of outdoor units other than header unit and failed unit]

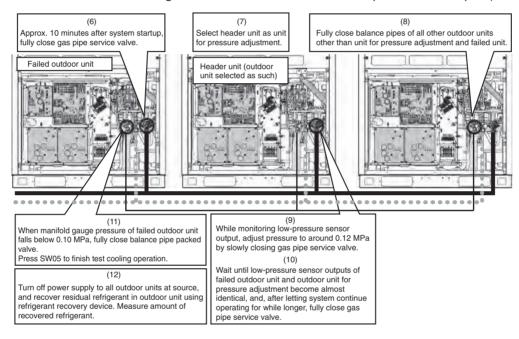
(8) Leaving the balance pipes of the unit for pressure adjustment and the failed unit fully open, fully close the balance pipe packed valves of all other outdoor units.

#### [Setup of header unit]

- (9) While monitoring the low-pressure sensor output, adjust the pressure to around 0.12 MPa by slowly closing the gas pipe service valve.
- (10)Compare the manifold gauge pressure of the failed unit with the low-pressure sensor output of the header unit, and wait until the two pressure readings become almost identical. After letting the system continue operating for a while longer, fully close the gas pipe service valve of the unit for pressure adjustment.

#### [Setup of failed outdoor unit]

- (11)When the manifold gauge pressure of the failed outdoor unit falls below 0.10 MPa, fully close the balance pipe packed valve, and press SW05 on the interface P.C. board to finish the test cooling operation.
- (12) Turn off the power supply to all the outdoor units, and recover the residual refrigerant in the outdoor unit using a refrigerant recovery device. Be sure to measure the amount of recovered refrigerant. (This is necessary to determine how much additional refrigerant will be needed after the completion of the repair.)



This is the end of the refrigerant recovery operation. Set SW01/02/03 of the header unit back to 1/1/1.

## 10-2. How to Operate System While Failed Outdoor Unit Being Repaired

### <Outline>

After refrigerant is recovered from the failed outdoor unit through a pump-down operation, the overall amount of refrigerant held by the system becomes excessive, and this makes it impossible to operate the remaining outdoor units even though they are not faulty. However, operation is still possible if the system-wide amount of refrigerant is adjusted in accordance with the procedure described below.

### <Work procedure>

(1) Follow the steps specified in "10-1. Refrigerant Recovery from Failed Outdoor Unit (Pump-Down)".

(2) Adjust the amount of refrigerant held by the system by removing some of it using a refrigerant recovery device, etc.

Determine the amount of refrigerant to be removed according to the capacity of the failed outdoor unit. (See the table below.)

Example: If you are under repairing of a 16HP outdoor unit in the 50HP system

(combination of outdoor unit: 18HP + 16HP + 16HP):

Amount of refrigerant to be remove from this system = 11 kg

(3) Set up the outdoor unit from which refrigerant has been recovered in the manner described in "9-3. Outdoor Unit Backup Operation Setting".

This completes the procedure.

Capacity code of outdoor unit under repair	Removal amount of refrigerant
[HP]	[kg]
8	8
10	8
12	10
14B	10
10A	10
12A	10
14	10.5
16	11
18B	10
14A	13
16A	13
18	13
20	13
22	13

## 10-3. Work procedure after Repair

When vacuuming in the repaired outdoor unit, follow the procedure described below.

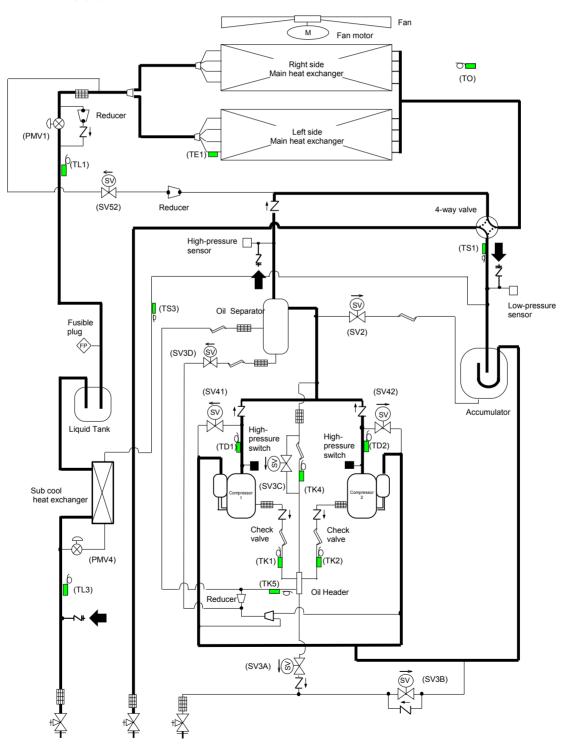
### <Work procedure>

(1) Fully open PMV1 and PMV3 (MMY-MAP1406\* to 2206\* only) in accordance with the table below. **Note:** PMV full-opening operation via short-circuiting of the CN30 pins is automatically undone after 2 minutes,

causing the valves to fully close. To maintain fully open state, turn off the power switch of the outdoor unit within 2 minutes of the short-circuiting of the CN30 pins.

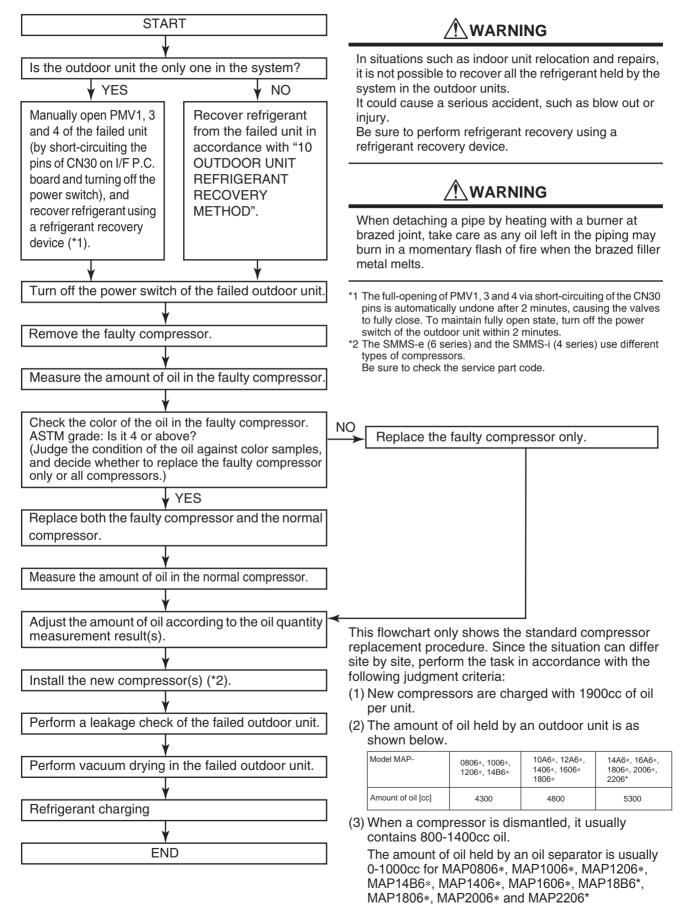
	SW12		CN30	PMV operation		
	Bit 1	Bit 2	Bit 3	Bit 4	CNSU	
Ī	OFF	OFF	OFF	OFF	Short-circuit	PMV1 fully open for 2 minutes.
	ON	OFF	OFF	OFF	Short-circuit	PMV3 fully opens for 2 minutes.

(2) Be sure to perform vacuuming in from the three check joints shown in the diagram below (liquid pipe, discharge pipe and suction pipe).



# **11** REPLACING COMPRESSORS

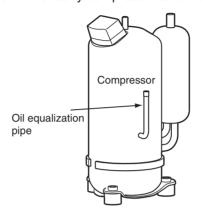
## **11-1.** Compressor Replacement Procedure (Outline)



## 11-2. Replacement of Compressors

### <Checking color of oil in faulty compressor>

- Lay the faulty compressor down, draw a small amount of oil via the oil equalization pipe, and check its color against color samples.
- Determine the number of compressors to be replaced according to the color checking result. ASTM grade: Below 4 → Replace the faulty compressor only. ASTM grade: 4 or above → Replace both the faulty compressor and the normal compressor(s).



### 

When detaching a pipe by heating with a burner at brazed joint, take care as any oil left in the piping may burn in a momentary flash of fire when the brazing filler metal melts.

### [When replacing faulty compressor only]

### <Measuring amount of oil in faulty compressor>

Amount of oil in faulty compressor: A [cc] = (Weight of compressor as it was dismantled (kg) - D) x 1042 (Specific volume of oil: 1042 [cc/kg])

	(kg)
Compressor model	D:Weight (not include oil)
RA641A3TB-20M	24.5
RA421A3TB-20MD	22.0

XPlease check the type name of the compressor as it was dismantled.

### <Adjusting amount of oil in new compressor> (1900cc at shipment)

• Perform the adjustment on the basis of how much oil the faulty compressor contained, A [cc], by following the steps below.

### **1** Amount of oil in faulty compressor A [cc]: $0 \le A < 1000$

(1) Adjust the amount of oil in the new compressor to 1000cc.

(Lay the new compressor down and draw 900 [cc] of oil via the oil-equalization pipe.)

### Notes:

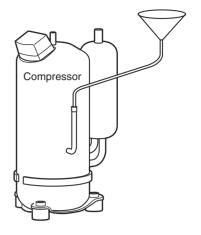
- Do not draw more than 900 [cc] of oil as it may cause damage to the compressor.
- If the faulty compressor contained 500cc or less, there may have been a problem with the oil equalization circuit, etc. Perform checks in accordance with "11-3. Check Procedure to Search Cause of Compressor Oil Shortage".

### **2** Amount of oil in faulty compressor A [cc]: $1000 \le A < 1900$

(1) Adjust the amount of oil in the new compressor to A cc.(Lay the new compressor down and draw (1900 - A) [cc] of oil via the oil equalization pipe.)

### **3** Amount of oil in faulty compressor A [cc]: $1900 \le A$

(1) Adjust the amount of oil in the new compressor to A cc.
 (Insert a hose into the discharge pipe or oil equalization pipe of the new compressor and inject (A-1900) [cc] of oil using a funnel, etc.)



# [When replacing normal as well as faulty compressor] - applicable to MMY-MAP0806\*, 1006\*, 1206\* and 14B6\*

<Remove the normal compressor>

• Remove the normal compressor in the same way as the faulty compressor.

Note:

• Be sure to insulate the removed compressor leads using insulation tape, etc.

## 

When detaching a pipe by heating with a burner at brazed joint, take care as any oil left in the piping may burn in a momentary flash of fire when the brazing filler metal melts.

### <Measuring amount of oil in normal compressor>

• As was the case with the faulty compressor, measure the amount of oil contained by placing the compressor on a scale.

Amount of oil in normal compressor:  $B [cc] = (Weight of compressor as it was dismantled (kg) - D) \times 1042$  (Specific volume of oil: 1042 [cc/kg])

Note:

	(kg)
Compressor model	D:Weight (not include oil)
RA421A3TB-20MD	22.0

%Please check the type name of the compressor as it was dismantled.

### <Adjusting amount of oil in new compressors>

• Perform the adjustment on the basis of how much oil the faulty compressor contained, A [cc], and how much oil the normal compressor contained, B [cc], by following the steps below.

### **1** Combined amount of oil in faulty and normal compressors A+B [cc]: $0 \le A+B < 2000$

(1) Adjust the amount of oil in the two new compressors to 1000cc each (total 2000cc).

• Lay the compressors down and draw 900 [cc] of oil from each of them via their oil equalization pipes.

### Notes:

- Do not draw more than 900 [cc] of oil from a compressor as it may cause damage.
- If the faulty compressor contained 500cc or less, there may have been a problem with the oil equalization circuit, etc. Perform checks in accordance with "11-3. Check Procedure to Search Cause of Compressor Oil Shortage".

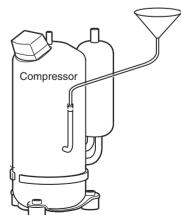
# 2 Combined amount of oil in faulty and normal compressors A+B [cc]: 2000 $\leq$ A+B < 3800

(1) Adjust the amount of oil in the two new compressors to (A+B)/2 cc each.

• Lay the compressor down and draw [3800-(A+B)]/2 [cc] of oil from each of them via their oil equalization pipes.

# 3 Combined amount of oil in faulty and normal compressors A+B [cc]: 3800 $\leq$ A+B

 Adjust the amount of oil in the two new compressors to (A+B)/2 cc each. (Insert a hose into the discharge pipe or oil equalization pipe of each compressor and inject (A+B)/2-1900 [cc] of oil using a funnel, etc.)



# [When replacing normal as well as faulty compressor] - applicable to MMY-MAP10A6\*, 12A6\*, 1406\*, 1606\* and 18B6\*

### <Remove the normal compressor>

• Remove the normal compressor in the same way as the faulty compressor.

- Note:
- Be sure to insulate the removed compressor leads using insulation tape, etc.

### 

When detaching a pipe by heating with a burner at brazed joint, take care as any oil left in the piping may burn in a momentary flash of fire when the brazing filler metal melts.

### <Measuring amounts of oil in normal compressor>

• As was the case with the faulty compressor, measure the amount of oil contained by placing each compressor on a scale.

Amount of oil in normal compressor:  $B [cc] = (Weight of compressor as it was dismantled (kg) - D) \times 1042$  (Specific volume of oil: 1042 [cc/kg])

Note:

	(kg)
Compressor model	D : Weight (not include oil)
RA641A3TB-20M	24.5

%Please check the type name of the compressor as it was dismantled.

### <Adjusting amount of oil in new compressors>

• Perform the adjustment on the basis of how much oil the faulty compressor contained, A [cc], and how much oil the normal compressor contained, B [cc], by following the steps below.

# 1 Combined amount of oil in faulty compressor and normal compressor A+B [cc]: $0 \le A+B < 2000$

- (1) Adjust the amount of oil in the two new compressors to 1000cc each (total 2000cc).
- Lay the compressors down and draw 900 [cc] of oil from each of them via their oil equalization pipes.

Notes:

- Do not draw more than 900 [cc] of oil from a compressor as it may cause damage.
- If the faulty compressor contained 500cc or less, there may have been a problem with the oil equalization circuit, etc. Perform checks in accordance with "11-3. Check Procedure to Search Cause of Compressor Oil Shortage".

## 2 Combined amount of oil in faulty compressor and normal compressor A+B [cc]: 2000 ≤ A+B < 4800

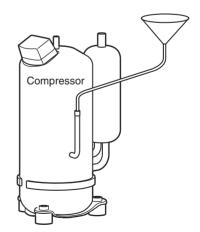
(1) Adjust the amount of oil in the two new compressors to (A+B)/2 cc each.

 Lay the compressor down and draw [4800-(A+B)]/2 [cc] of oil from each of them via their oil equalization pipes.

# 3 Combined amount of oil in faulty compressor and normal compressor A+B [cc]: 4800 ≤ A+B

(1) Adjust the amount of oil in the two new compressors to (A+B)/2 cc

eac(Insert a hose into the discharge pipe or oil equalization pipe of each compressor and inject (A+B)/2-1900 [cc] of oil using a funnel, etc.)



# [When replacing normal as well as faulty compressor] - applicable to MMY-MAP14A6\*, 16A6\*, 1806\*, 2006\* and 2206\*

### <Remove the normal compressor>

• Remove the normal compressor in the same way as the faulty compressor.

### Note:

• Be sure to insulate the removed compressor leads using insulation tape, etc.

### 

When detaching a pipe by heating with a burner at brazed joint, take care as any oil left in the piping may burn in a momentary flash of fire when the brazing filler metal melts.

### <Measuring amounts of oil in normal compressors>

• As was the case with the faulty compressor, measure the amount of oil contained by placing each compressor on a scale.

Amount of oil in normal compressor:  $B [cc] = (Weight of compressor as it was dismantled (kg) - D) \times 1042$  (Specific volume of oil: 1042 [cc/kg])

### Note:

	(kg)
Compressor model	D : Weight (not include oil)
RA641A3TB-20M	24.5

%Please check the type name of the compressor as it was dismantled.

### <Adjusting amount of oil in new compressors>

• Perform the adjustment on the basis of how much oil the faulty compressor contained, A [cc], and how much oil the normal compressor contained, B [cc], by following the steps below.

# 1 Combined amount of oil in faulty compressor and normal compressor A+B [cc]: $0 \le A+B < 2000$

- (1) Adjust the amount of oil in the two new compressor to 1000cc each (total 2000cc).
- Lay the compressor down and draw 900 [cc] of oil from each of them via their oil equalization pipes.

### Notes:

- Do not draw more than 900 [cc] of oil from a compressor as it may cause damage.
- If the faulty compressor contained 500cc or less, there may have been a problem with the oil equalization circuit, etc. Perform checks in accordance with "11-3. Check Procedure to Search Cause of Compressor Oil Shortage".

## 2 Combined amount of oil in faulty compressor and normal compressor A+B [cc]: 2000 ≤ A+B < 5300

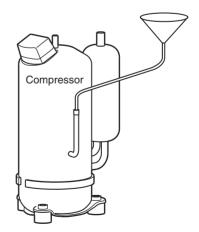
(1) Adjust the amount of oil in the two new compressor to (A+B)/2 cc each.

• Lay the compressor down and draw [5300-(A+B)]/2 [cc] of oil from each of them via their oil equalization pipes.

# 3 Combined amount of oil in faulty compressor and normal compressor A+B [cc]: 5300 ≤ A+B

(1) Adjust the amount of oil in the two new compressors to (A+B)/2 cc each.

(Insert a hose into the discharge pipe or oil equalization pipe of each compressor and inject (A+B)/2-1900 [cc] of oil using a funnel, etc.)



### <Installing compressor>

- Install a compressor by following the dismantling procedure in reverse.
- The dismantling process may have loosened compressor leads and quick connectors. Prior to installation, therefore, tighten them a little with a pair of pliers, and verify that they are tight after reconnection.

### Notes:

- Although a compressor is provided with only two hexagonal bolts, it is standard.
- The tightening torque of the hexagonal bolts, used to mount the compressor, is 200kg/cm.
- If oil has been drawn from the accumulator, repair the cut pipe through pinching and brazing.

### <Vacuum-pumping>

(Single outdoor unit system)

- Before performing vacuum-pumping, fully open PMV1, 3 and 4. If they are closed, the heat exchangers of the outdoor unit cannot be vacuum-pumped.
- Connect a vacuum pump consecutively to the check joints placed in the liquid and discharge pipes and on the high-pressure side of the suction pipe, and turn it on.
- Operate the vacuum drying until the vacuum gauge indicates 1 mmHg.

### <Method to fully open PMV manually>

(1) Turn on the power switch of the outdoor unit.

- (2) With the Bits 1 and 2 of SW12 set to off, short-circuit the pins of CN30.
- (3) Disconnect the connectors of PMV1 from the I/F P.C. board.

(4) With the Bits 1 and 2 of SW12 set to off and on, respectively, short-circuit the pins of CN30.

(5) Disconnect the connector of PMV4 from the I/F P.C. board

(6) With the Bits 1 and 2 of SW12 set to on and off, respectively, short-circuit the pins of CN30.

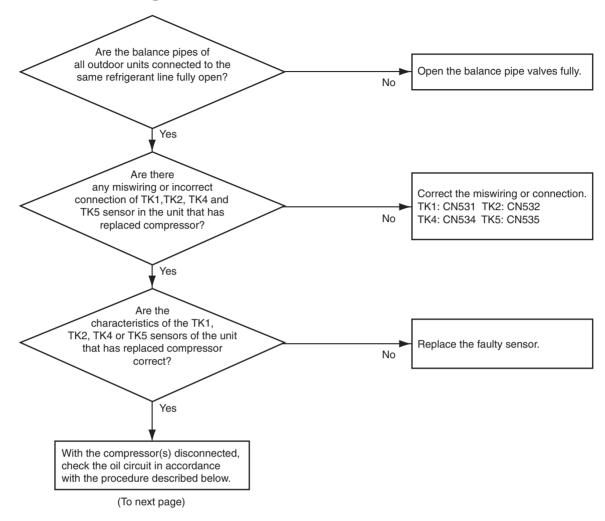
(7) Disconnect the connector of PMV3 from the I/F P.C. board.

(8) Turn off the power switch of the outdoor unit.

Note: Steps (6) and (7) are not required for MMY-MAP0806\*, 1006\*, 1206\*, and 14B6\*

### <Refrigerant charging>

• Inject the same amount of refrigerant as the recovered residual refrigerant via the charging port of the liquid-side service valve.

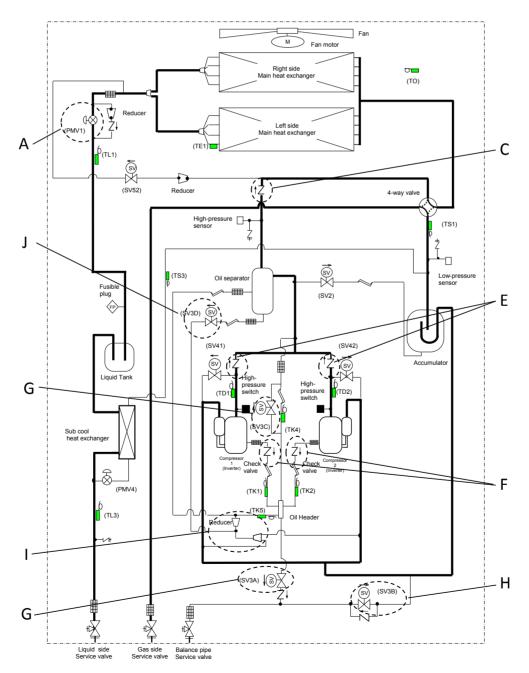


## 11-3. Check Procedure to Search Cause of Compressor Oil Shortage

### <MMY-MAP0806\*, MAP1006\*, MAP1206\* and MAP14B6\*>

Check items and procedures to follow when checking oil circuit with compressor(s) disconnected

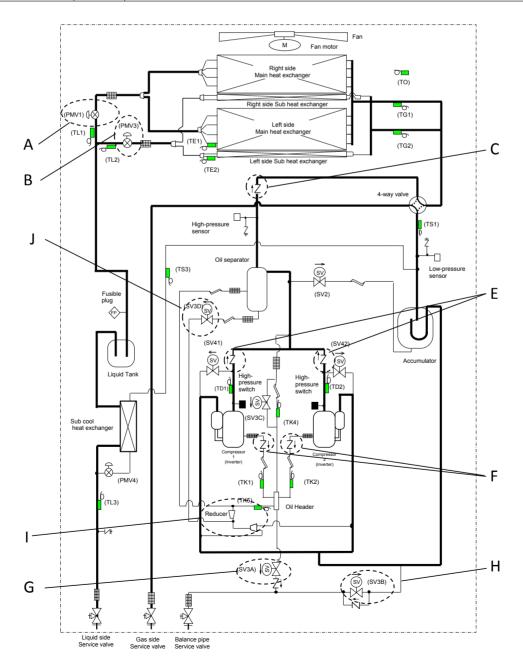
Check item	Location	Procedure
Leakage of outdoor PMV Leakage of check valve in discharge pipe convergent section	A,C	<ol> <li>With PMV1 fully closed, apply pressure to the check joint of liquid pipe with nitrogen, and check the pressure at the check joint of discharge pipe. If the pressure at the check joint of discharge pipe increases, there is a leak from PMV1 (A) and check valve of discharge pipe (C). Replace the faulty parts.</li> <li>If the pressure does not increase, fully open outdoor PMV 1 and check the pressure at the check joint of discharge pipe again. If the pressure increases, there is a leak from the check valve of discharge pipe (C). Replace the part.</li> </ol>
Leakage of check valve in discharge pipe	E	3) With pressure applied to the check joint of discharge pipe with nitrogen, if gas escapes from the discharge pipe section of the disconnected compressor, there is a leak from the check valve of discharge pipe (E). Replace the part.
Leakage of check valve in oil equalization circuit	F	4) With pressure applied to the check joint of discharge pipe with nitrogen, if gas escapes from the oil equalization pipe section of the disconnected compressor, there is a leak from the oil equalization pipe check valve (F). Replace the part.
Leakage of SV3A valve	G	5) With pressure applied to the check joint of discharge pipe with nitrogen, manually open the SV3B valve. If gas escapes from the suction pipe section of the disconnected compressor, there is a leak from the SV3A valve. Replace the part.
Leakage of SV3B valve	н	6) Then manually open the SV3A valve. If gas escapes from the suction pipe section of the disconnected compressor, there is a leak from the SV3B valve. Replace the part.
Clogging of SV3D valve Clogging of oil-return capillary Clogging of oil-return distributor	J	7) With pressure applied to the check joint of discharge pipe with nitrogen, manually open the SV3D valve. If gas does not escape from the suction pipe section of the disconnected compressor, the SV3D valve, oil-return capillary or oil-return distributor is clogged. Replace the part.



### <MMY-MAP10A6\*, MAP12A6\*, MAP1406\*, MAP1606\*, MAP18B6\*>

Check items and procedures to follow when checking oil circuit with compressor(s) disconnected

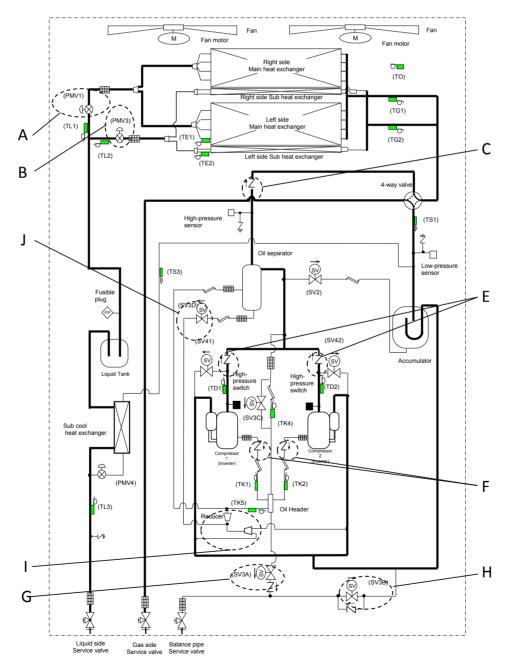
Check item	Location	Procedure	
Leakage of outdoor PMV Leakage of check valve in discharge pipe convergent section	A,B C	<ol> <li>With PMV1 and 3 fully closed, apply pressure to the check joint of liquid pipe with nitrogen, and check the pressure at the check joint of discharge pipe. If the pressure at the check joint of discharge pipe increases, there is a leak PMV1(A) or 3(B) and check valve of dischage pipe (C). Replace the faulty parts.</li> <li>If the pressure does not increase, fully open outdoor PMV1 and 3 and check the pressure at the check joint of discharge pipe again.</li> </ol>	
		If the pressure increases, there is a leak from the check valve of discharge pipe (C). Replace the part.	
Leakage of check valve in discharge pipe	E	3) With pressure applied to the check joint of discharge pipe with nitrogen, if gas escapes from the discharge pipe section of the disconnected compressor, there is a leak from the check valve of discharge pipe (E). Replace the part.	
Leakage of check valve in oil equalization circuit	F	4) With pressure applied to the check joint of discharge pipe with nitrogen, if gas escapes from the oil equalization pipe section of the disconnected compressor, there is a leak from the oil equalization pipe check valve (F). Replace the part.	
Leakage of SV3A valve	G	5) With pressure applied to the check joint of discharge pipe with nitrogen, manually open the SV3B valve. If gas escapes from the suction pipe section of the disconnected compressor, there is a leak from the SV3A valve. Replace the part.	
Leakage of SV3B valve	Н	6) Then manually open the SV3A valve. If gas escapes from the suction pipe section of the disconnected compressor, there is a leak from the SV3B valve. Replace the part.	
Clogging of SV3D valve Clogging of oil-return capillary Clogging of oil-return distributor	J	7) With pressure applied to the check joint of discharge pipe with nitrogen, manually open the SV3D valve. If gas does not escape from the suction pipe section of the disconnected compressor, the SV3D valve, oil-return capillary or oil-return distributor is clogged. Replace the part.	



### <MMY-MAP14A6\*, MAP16A6\*, MAP1806\*, MAP2006\*, and MAP2206>

Check items and procedures to follow when checking oil circuit with compressor(s) disconnected

Check item	Location	Procedure
Leakage of outdoor PMV Leakage of check valve in discharge pipe convergent section	A,B	<ol> <li>With PMV1 and 3 fully closed, apply pressure to the check joint of liquid pipe with nitrogen, and check the pressure at the check joint of discharge pipe. If the pressure at the check joint of discharge pipe increases, there is a leak from PMV1(A) or 3(B) and check valve of discharge pipe (C). Replace the faulty parts.</li> <li>If the pressure does not increase, fully open outdoor PMV1 and 3 and check the pressure at the check joint of discharge pipe again. If the pressure increases, there is a leak from the check valve of discharge pipe (C). Replace the part.</li> </ol>
Leakage of check valve in discharge pipe	E	3) With pressure applied to the check joint of discharge pipe with nitrogen, if gas escapes from the discharge pipe section of the disconnected compressor, there is a leak from the check valve of discharge pipe (E). Replace the part.
Leakage of check valve in oil equalization circuit	F	4) With pressure applied to the check joint of discharge pipe with nitrogen, if gas escapes from the oil equalization pipe section of the disconnected compressor, there is a leak from the oil equalization pipe check valve (F). Replace the part.
Leakage of SV3A valve	G	5) With pressure applied to the check joint of discharge pipe with nitrogen, manually open the SV3B valve. If gas escapes from the suction pipe section of the disconnected compressor, there is a leak from the SV3A valve. Replace the part.
Leakage of SV3B valve	н	6) Then manually open the SV3A valve. If gas escapes from the suction pipe section of the disconnected compressor, there is a leak from the SV3B valve. Replace the part.
Clogging of SV3D valve Clogging of oil-return capillary Clogging of oil-return distributor	J	7) With pressure applied to the check joint of discharge pipe with nitrogen, manually open the SV3D valve. If gas does not escape from the suction pipe section of the disconnected compressor, the SV3D valve, oil-return capillary or oil-return distributor is clogged. Replace the part.



# 12 OUTDOOR UNIT PARTS REPLACEMENT METHODS

No.	Part to be replaced	Work procedure	Remarks		
1	Cabinet		2) Discharge cabinet Screws (4 corners)		
		Wear a pair of gloves. Otherwise, you will risk an injury involving a replacement part or some other object.			
		<ul> <li>1. Detachment <ol> <li>Stop the air conditioner operation, and turn off the circuit breaker.</li> <li>Remove the screws for the discharge cabinet. (M5 × 16, 4 pcs.)</li> </ol> </li> </ul>	Screws (4 corners) 5) Suction cabinet (front and rear)		
		With a MAP10A6*, 12A6*, 1406*, 1606*, 18B6* type, the discharge cabinet side covers need to be removed. Left and right: (M5 × 16, 2 pcs.) - 2 sets			
		Remove the two discharge cabinets for MAP14A6*, 16A6*, 1806*, 2006*, 2206* type. 3)Remove the screws for the lower cabinet. Front			
		<ul> <li>and rear: (M5 × 10, 7 pcs. for front and 6 pcs. for rear)</li> <li>Remove the two front lower cabinets and two rear lower cabinets for MAP14A6*, 16A6*, 1806*, 2006*, 2206*, type.</li> <li>(M5 x 10, 13 pcs (Front) M5 x 10, 10 pcs (Rear)</li> <li>4) Remove the screws for the service panel.</li> <li>(M5 × 10, 2 pcs.)</li> <li>5) Remove the screws for the suction cabinet. Front and rear: (M5 × 10, 4 pcs. each)</li> </ul>	6) Side cabinet (left and right)         4) Service panel         3) Lower cabinet (front and rear)         2) Discharge cabinet		
		In the case of a MAP10A6*, 12A6*, 1406*, 1606*, 18B6* type: M5x10, 5 pcs. each Remove the two front discharge cabines and two rear discharge cabinets for MAP14A6*, 16A6*, 1806*, 2006*, 2206* type. (M5 x 10, 9 pcs (Front) M5 x 10, 9 pcs (Rear) 6) Remove the screws for the discharge cabinet side cabinet. Left and right: (M5 x 10, 6 pcs. each)	5) Suction cabinet (front & rear) 3) Lower cabinet (left & right)		
		Remove the two front support plates and two rear support plates for MAP14A6*, 16A6*, 1806*, 2006*, 2206* type. (M5 x 10, 6 pcs) - 2 set	(front & rear)		
		<ul> <li><b>2. Attachment</b> <ul> <li>Carry out installation by following the detachment procedure in reverse (6) → 1)).</li> <li>Be careful of the hooks provided on the suction cabinet, service panel and lower cabinet.</li> </ul> </li> </ul>	Hook		
			Service panel		

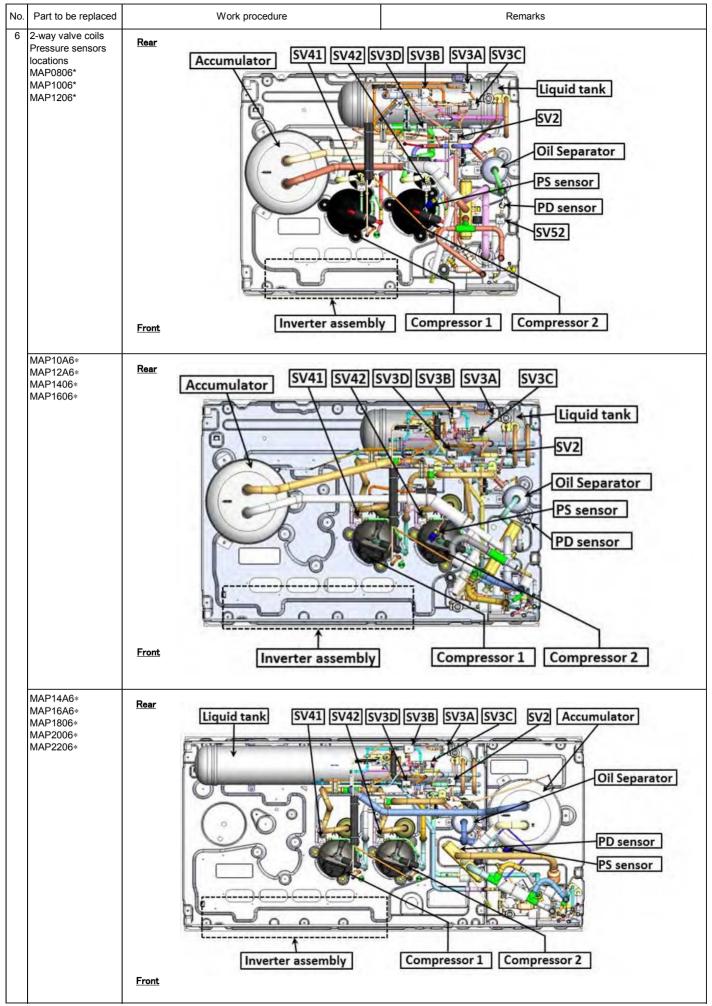
No.	Part to be replaced	Work procedure	Remarks
2	Propeller fan Fan motor		2) Screws (4 corners)
		Wear a pair of gloves. Otherwise, you will risk an injury involving a replacement part or some other object.	
		<ol> <li>Detachment         <ol> <li>Stop the air conditioner operation, and turn off the circuit breaker.</li> <li>Remove the screws for the discharge cabinet. (M5 × 10, 4 pcs.)</li> </ol> </li> </ol>	Discharge cabinet side cover
		<ul> <li>3) Remove the heat exchanger partition plate (upper). (M5 × 10, 2 pcs.)</li> <li>* With a MAP10A6*, 12A6*, 1406*, 1606*, 18B6* type, the fan motor can be replaced without removing the discharge cabinet side covers.</li> <li>4) Remove the flange nut securing the fan motor and propeller fan. (To loosen the nut, turn it clockwise.)</li> <li>5) Remove the square washer.</li> <li>6) Remove the propeller fan.</li> </ul>	3) Heat exchanger partition plate (upper) 4) Flange nut
		<b>CAUTION</b> Lift it straight up. Do not forcibly pull it, or it may get stuck.	5) Square washer
		<ul> <li>7) Disconnect the Faston connectors for the fan motor leads (3 pieces) from the Fan IPDU, and pull the leads up and out.</li> <li>8) Remove the fan motor. (M6 × 20, 4 pcs.)</li> <li>As for MAP14A6* 16A6*, 1806*, 2006*, 2206* type, the number of Fan, Fan motor, Motor base, Flange nut, Washer and Fan P.C Board are twice compare to MAP0806*, 1006*, 1206*, 14B6*, 10A6*, 12A6*, 1406*, 1606*, 18B6* type because 2 Fans are equipped.</li> </ul>	6) () () () () () () () () () (
			7) Disconnect Faston connectors and pull fan motor leads up and out. Fan motor lead travel route Close-up view of Faston connectors
			Fan IPDU

No.	Part to be replaced	Work procedure	Remarks
2	Propeller fan Fan motor (continued)	<ul> <li>2. CAUTION for replacement or attachment</li> <li>1) Insert the propeller fan while aligning the D-cut surface of the fan motor shaft with the arrow mark (△) on the fan. (If the propeller fan is tightly mounted on the shaft without securing alignment between the D-cut surface and the arrow mark (△), it may cause the fan to melt and fall off due to friction heat.)</li> <li>2) Be sure to put the square washer in place. (Otherwise, unusual noises and vibrations may result.)</li> <li>3) Tighten the flange nut at a torque of 15N•m (153&amp;frem). (To tighten the flange nut, turn it counterclockwise.)</li> <li>4) Remove the clamp filter from the fan motor with trouble, then attach the clamp filter to the substitution in the same way as before replacement. (Turn through the fan motor lead once around the clamp filter.)</li> <li>Apply the same procedure again for MAP14A6*, 16A6*, 1806*, 2006*, 2206*, type unit to replace another clamp filter.</li> </ul>	<image/>

No.	Part to be replaced	Work procedure	Remarks
3	Heat exchanger		2) Motor base 3) Discharge cabinet anchor plate
		Wear a pair of gloves. Otherwise, you will risk an injury involving a replacement part or some other object.	
		Before the work, be sure to recover the refrigerant of outdoor unit into cylinders or another unit connected to the same system. (Refer to the chapter on "refrigerant recovery methods	Heat exchanger (left) Heat exchanger
		to be used during compressor replacement".)	(left) Heat exchanger (right)
		<ol> <li>Detachment (Right-Side Heat Exchanger as Example)</li> <li>1) Remove the cabinet.</li> <li>2) Remove the motor base. (M5 × 10, 6 pcs.) Remove the two motor motor bases for MAP14A6*, 16A6*, 1806*, 2006*, 2206* type (M5 x 10, 6 pcs) - 2 set (Detach the fan motor leads as well.)</li> </ol>	3) Discharge cabinet anchor plate Heat (left) Support plate (front & rear)
		With a MAP10A6*, 12A6*, 1406*, 1606*, 18B6* type remove the discharge cabinet anchor plates. Left and right: (M5 × 10, 2 pcs.) - 2 sets	
		<ul> <li>With MAP14A6*, 16A6*, 1806*, 2006*, 2206* type remove the discharge cabinet anchor plate. (M5 x 10, 2 pcs)</li> <li>3) Remove the upper partition plate. (M5 × 10, 5 pcs.)</li> <li>4) Remove the screws for the support post. (M5 × 10, 2 pcs.)</li> <li>5) Remove the screws for the waterproof board. (M4 × 10, 2 pcs.)</li> <li>6) Remove the brazed joints of the piping connected (2 locations).</li> <li>With a MAP10A6*, 12A6*, 1406*, 1606*, 18B6*, 14A6*, 16A6*, 1806*, 2006*, 2206* type also remove the brazed joints of the piping connected</li> </ul>	1) Support post the exchangers)
		to the sub-heat exchanger (2 locations). 7)Remove the screws for the heat exchanger end plate and pull the heat exchanger out. (M5 × 10, 2 pcs.)	e) Brazed joints (2 locations on distributor side) 6) Brazed joints (2 locations on header side)
			7) Rear         Y and the second sec

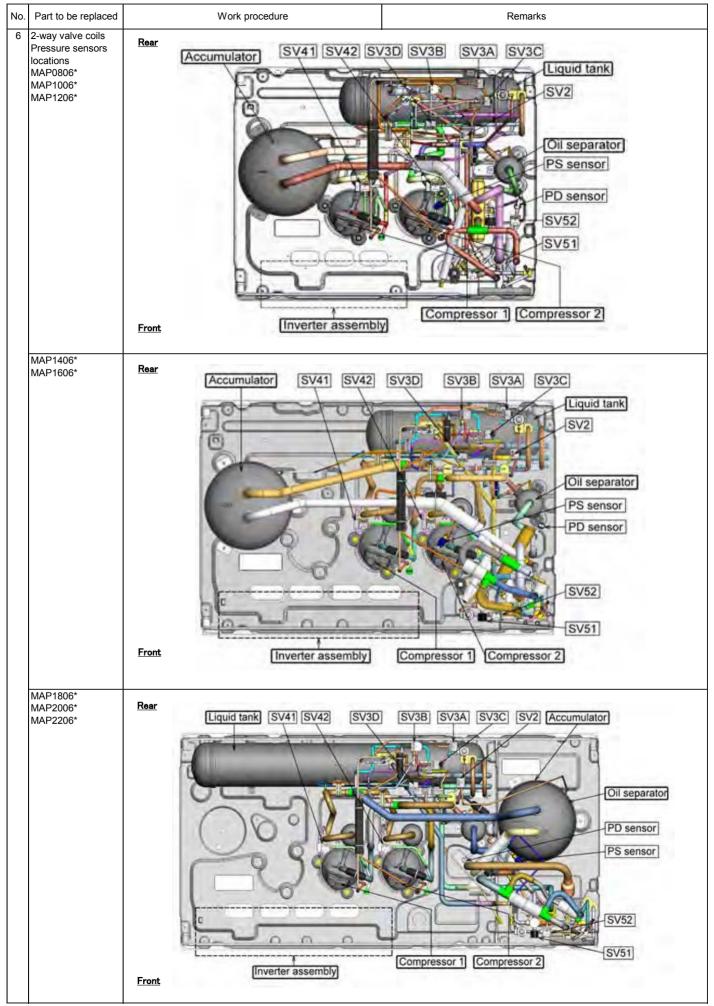
No.	Part to be replaced	Work procedure	Remarks		
4	Inverter assembly	WARNING	4) Screw (with arrow mark)		
		Wear a pair of gloves. Otherwise, you will risk an injury involving a replacement part or some other object.	Removable design		
		<ul> <li>1. Detachment <ol> <li>Stop the air conditioner operation, and turn off the circuit breaker.</li> <li>Remove the inverter cover. <li>(M4 × 10, 2 pcs.)</li> <li>Remove the wiring. <li>(e.g. the power supply wire, compressor leads, coils, sensors and heaters)</li> </li></li></ol> </li> <li>4) Steps only applicable to a MAP10A6*, 12A6*, 1406*, 1606*, 18B6*, 14A6*, 16A6*, 1806*, 2006*, 2206* type <ol> <li>Remove the reactor lead cover.</li> <li>(M4 × 10, 1 pc.)</li> <li>Remove the screws securing the box.</li> <li>(M4 × 10, 1 pc.)</li> </ol> </li> <li>5) Remove the screws securing the box.</li> <li>(M5 × 10, 1 pc. each for top and bottom)</li> </ul>	4) Reactor lead cover (with arrow mark) 4) Fan1 (left side) 4) Reactor terminal block 4) Fan2 (right side) 5) Screw		
		<ul> <li>2006*, 2206* type: M5 × 10, 3 pcs. for top and 2 pcs for bottom</li> <li>6) Disengage the hook by gently pressing down the locking lever with your finger. (The lower part of the box moves forward.)</li> <li>7) Hold the top board with both hands to disengage the top hook.</li> </ul>	5) Screws with arrow mark (2 locations)		
		<b>2. Attachment</b> Carry out installation by following the dismantling procedure in reverse $(7) \rightarrow 1$ )). Before pushing the lower part in, pull the reactor leads out. Take care so that the wiring does not get caught in the way. Reconnect all the wiring.	<image/> <text><text></text></text>		

No.	Part to be replaced	Work procedure	Remarks
5	Reactor assembly		<ul> <li>MAP10A6*, 12A6*, 1406*, 1606*, 18B6*, 14A6*, 16A6*, 1806*, 2006*,</li> </ul>
		Wear a pair of gloves. Otherwise, you will risk an injury involving a replacement part or some other object.	2206* type          3) Screw       Fixing claw (slide stopper to right)
		<ul> <li>1. Detachment <ol> <li>Stop the operation, and turn off the circuit breaker.</li> <li>Remove the inverter assembly.</li> <li>(See the inverter assembly dismantling method under item 4.)</li> </ol> </li> </ul>	
		<ul> <li>3) With a MAP10A6*, 12A6*, 1406*, 1606*, 18B6*, 14A6*, 16A6*, 1806*, 2006*, 2206* type, remove the separately mounted reactor box.</li> <li>To remove the reactor box, remove the screws at the top and bottom (M5 × 10) and unlock the box by sliding the stopper to the right.</li> </ul>	3) Screw
		* Before pulling the reactor box, tilt it back to free the bottom.	Fixing claw (slide stopper to right)
		·	A) Screws (2 locations)         A) Screws (2 locations)         Image: A stress (2 locations)
			A) Screws (2 locations)



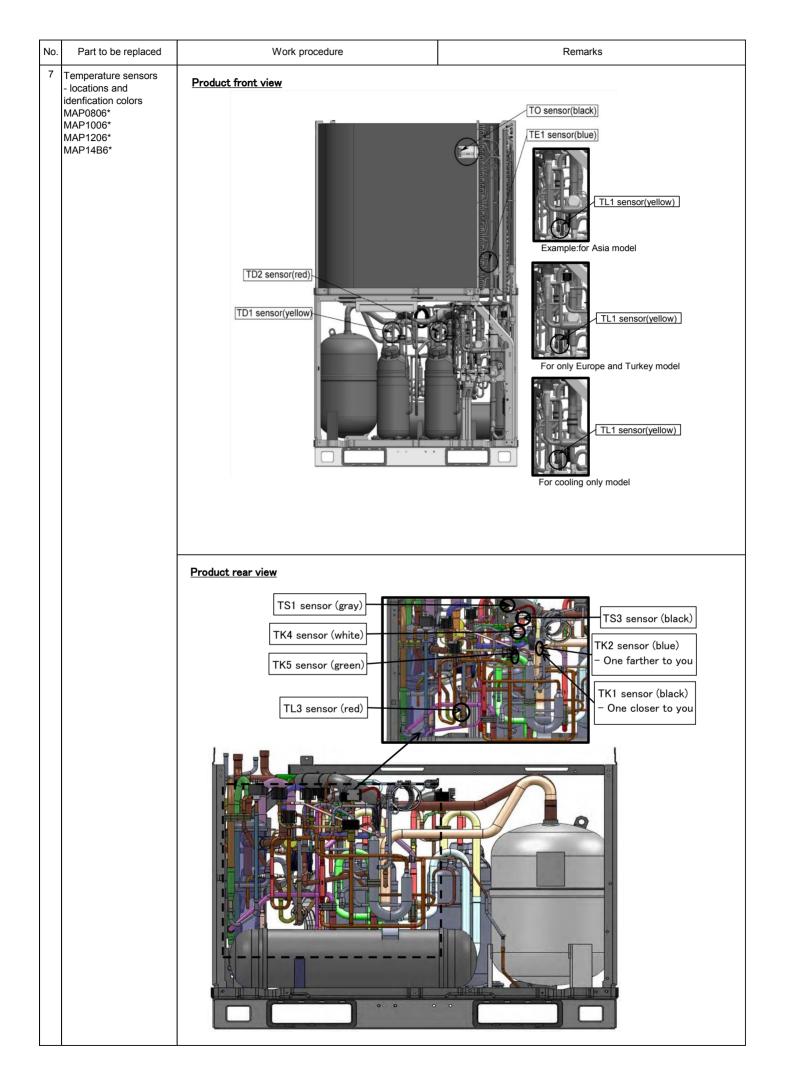
### For HT8(J)P, HT7(J)P, HT8(J)P-ME, HT7P-ME, T8(J)P-E, HT8P-A, HT8P-C model

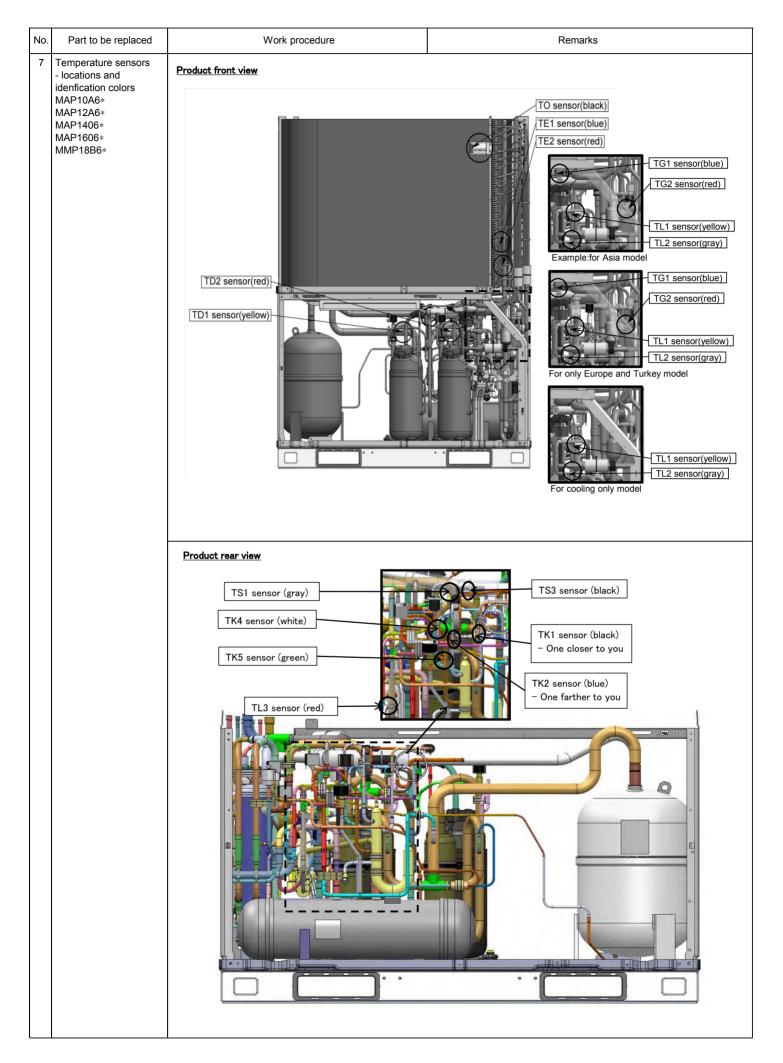
### (For HT8(J)P-E, HT8(J)P-TR model)

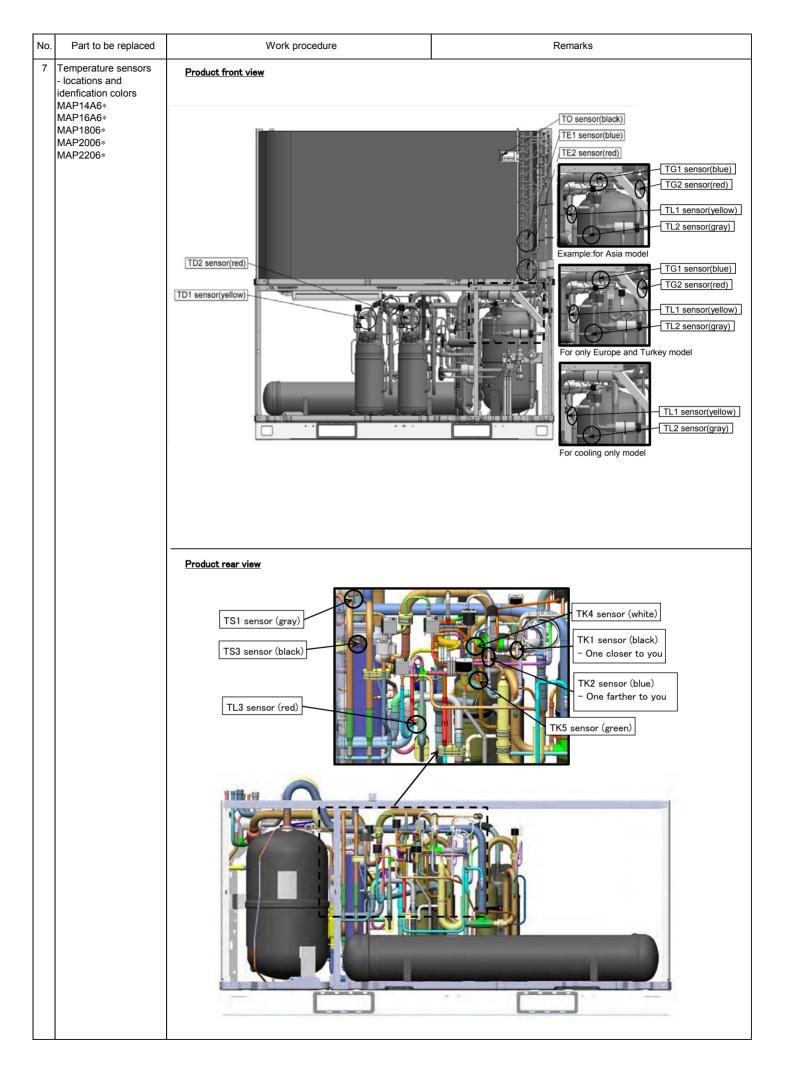


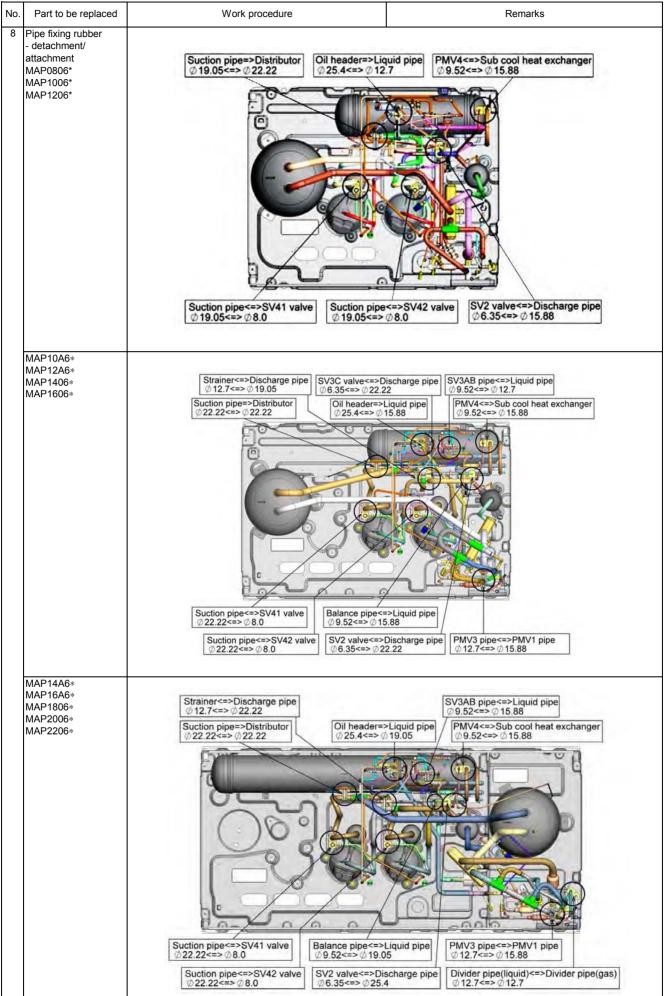
### Work procedure No. Part to be replaced Remarks 6 2-way valve coils Rear Pressure sensors locations MAP0806\* MAP1006\* Accumulator SV41 SV42 SV3D SV3B SV3A SV3C Liquid tank MAP1206\* MAP14B6\* SV2 Oil Separator PS sensor PD sensor Inverter assembly Compressor 1 Compressor 2 <u>Front</u> MAP1406\* MAP1606\* <u>Rear</u> MAP18B6\* Accumlator SV41 SV42 SV3D SV3B SV3A SV3C Liquid tank SV2 Oil Separator PS sensor PD sensor Inverter assembly Compressor 1 Compressor 2 Front MAP1806\* MAP2006\* <u>Rear</u> Liquid tank SV41 SV42 SV3D SV3B SV3A SV3C SV2 Accumulator MAP2206\* Oil Separator PD sensor PS sensor Inverter assembly Compressor 1 Compressor 2 Front

### (For T8(J)P, T7(J)P, T8P-SG, T8(J)P-ID, T8(J)P-T model)



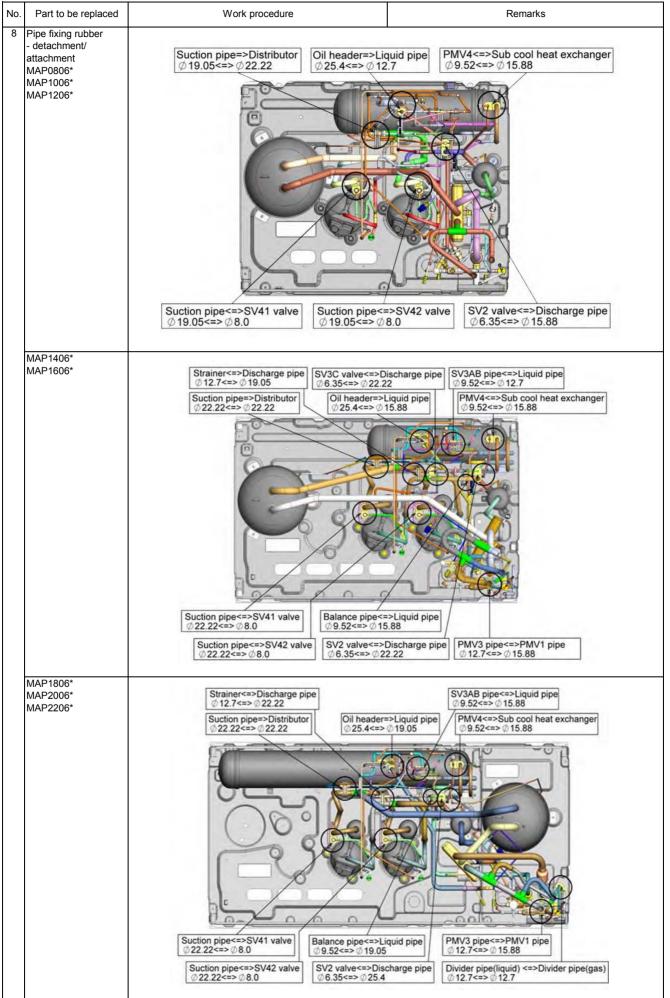






### (For HT8(J)P, HT7(J)P, HT8(J)P-ME, HT7P-ME, T8(J)P-E, HT8P-A, HT8P-C model)

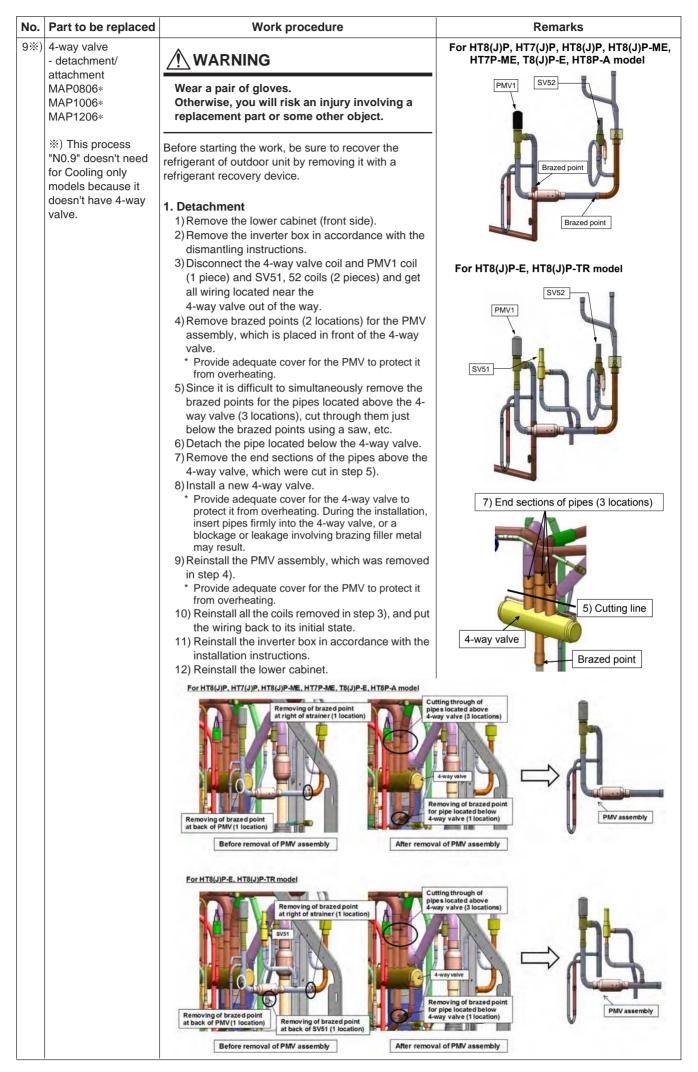
### (For HT8(J)P-E, HT8(J)P-TR model)

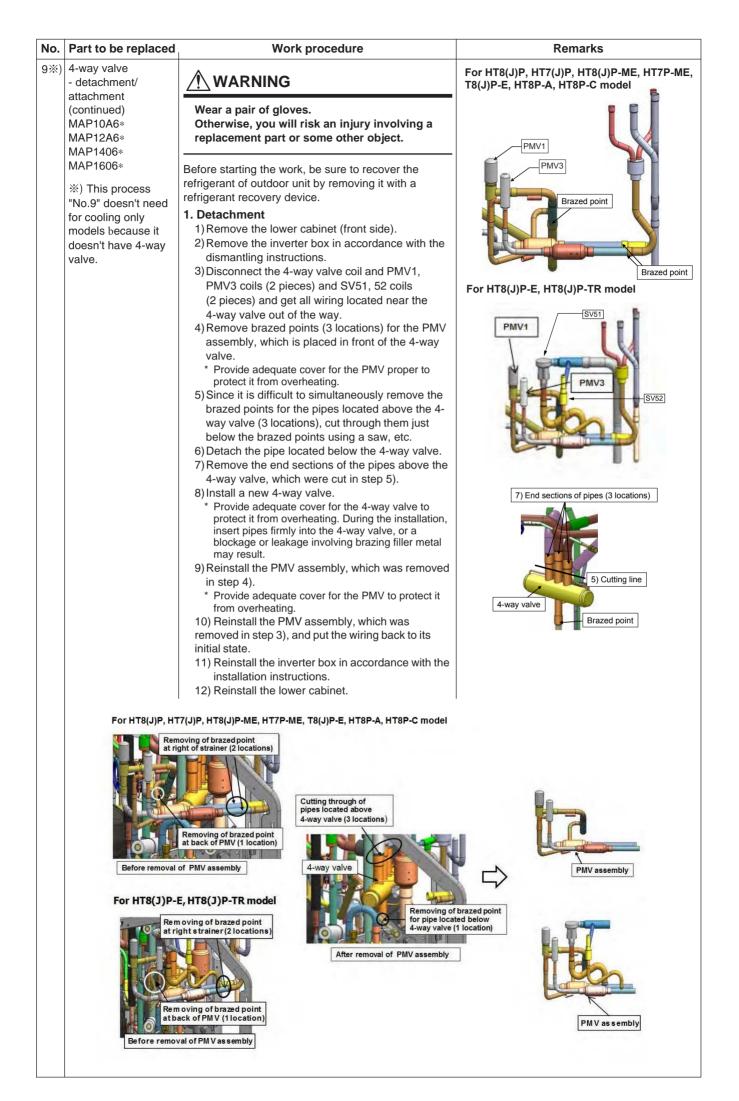


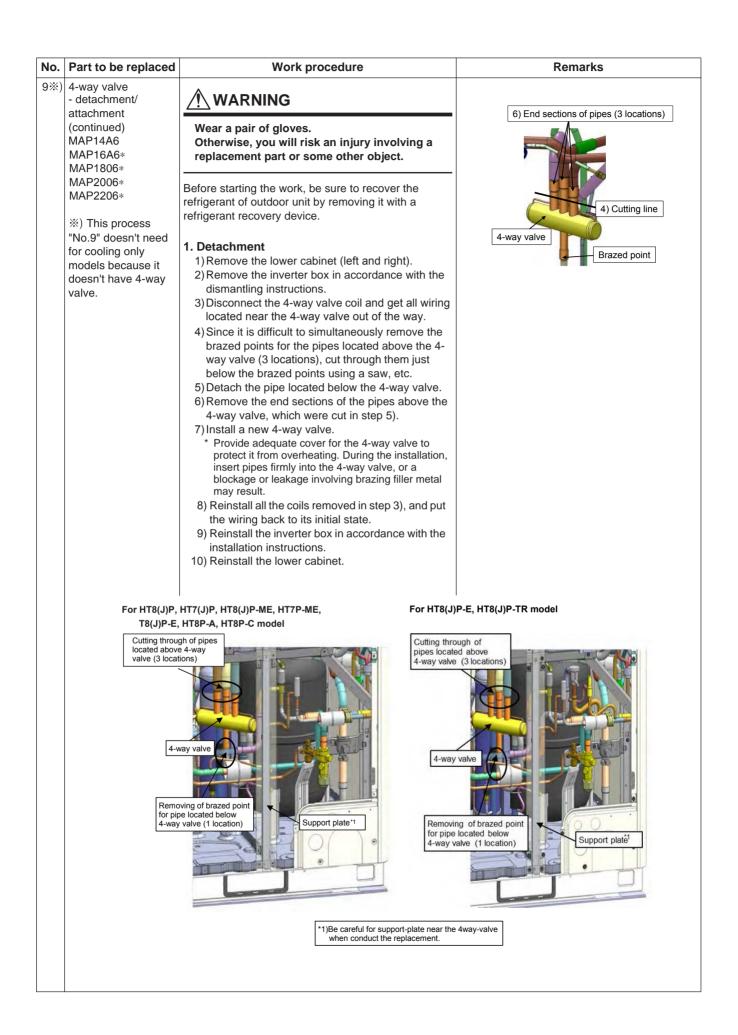
### Part to be replaced Work procedure Remarks No. 8 Pipe fixing rubber Oil header<=>Liquid pipe $\phi$ 25.4<=> $\phi$ 12.7 PMV4<=>Sub ccol heat exchanger $\emptyset$ 9.52<=> $\emptyset$ 15.88 detachment/ attachment MAP0806\* MAP1006\* $\overline{\bigcirc}$ MAP1206\* MAP14B6\* F Suction pipe<=>SV42 valve $\emptyset$ 19.05<=> $\emptyset$ 8.0 SV2 valve<=>Discharge pipe $0.52 \le 0.52 \le 0.58$ Suction pipe<=>SV41 valve ∅ 19.05<=> ∅ 8.0 MAP1406\* MAP1606\* Strainer<=>Discharge pipe $\emptyset$ 12.7<=> $\emptyset$ 19.05 SV3C valve<=>Discharge pipe $\phi$ 6.35<=> $\phi$ 22.22 $\phi$ 9.52<=> $\phi$ 12.7 MAP18B6\* Suction pipe<=>Distributor Ø22.22<=>Ø22.22 Oil header<=>Liquid pipe ∅ 25.4<=> ∅ 15.88 PMV4<=>Sub cool heat exchanger $0.52 \le 0.52 \le 0.52$ e 6 G Blance pipe<=>Liquid pipe $0.52 \le 0.52 \le 0.58$ Suction pipe<=>SV41 valve Ø 22.22<=>Ø 8.0 Suction pipe<=>SV42 valve $\phi$ 22.22<=> $\phi$ 8.0 SV2 valve<=>Discharge pipe $\emptyset$ 6.35<=> $\emptyset$ 22.22 PMV3 pipe<=>PMV1 pipe Ø 12.7<=>Ø 15.88 MAP1806\* Strainer<=>Discharge pipe $\phi$ 12.7<=> $\phi$ 22.22 MAP2006\* SV3AB pipe<=>Liquid pipe $\emptyset$ 9.52<=> $\emptyset$ 15.88 MAP2206\* Suction pipe<=>Distributor $\emptyset$ 22.22<=> $\emptyset$ 22.22 PMV 4<=>Sub cool heat exchanger $0.52 \le 0.52 \le 0.5$ Oil header<=>Liquid pipe $\emptyset$ 25.4<=> $\emptyset$ 19.05 • 0-Suction pipe<=>SV41 valve $\phi$ 22.22<=> $\phi$ 8.0 PMV3 pipe<=>PMV1 pipe Ø 12.7<=>Ø 15.88 Balance pipe<=>Liquid pipe $\emptyset$ 9.52<=> $\emptyset$ 19.05 Divider pipe(liquid)<=>Divider pipe(gas) $\emptyset$ 12.7<=> $\emptyset$ 12.7 SV2 valve<=>Discharge pipe Ø6.35<=>Ø25.4 Suction pipe<=>SV42 valve $\phi$ 22.22<=> $\phi$ 8.0

### (For T8(J)P, T7(J)P, 8P-SG, T8(J)P-ID, T8(J)P-T model)

No.	Part to be replaced	Work procedure	Remarks
8	Pipe fixing rubber - detachment/ attachment		1)
	(common)	Wear a pair of gloves. Otherwise, you will risk an injury involving a replacement part or some other object.	
		<ul> <li>1. Detachment <ol> <li>Hold the pipe fixing rubber in such a manner that your fingers and thumb are in contact with the two longitudinal ends of the piece, and squeeze it a little to create a small gap between the rubber and the stainless steel band wrapped around it.</li> <li>Push the hook end of the stainless steel band down to disengage the hook from the square hole.</li> </ol> </li> </ul>	Squeeze rubber to create small gap. 2) Push band down in arrow direction.
		<ul> <li>2. Attachment <ol> <li>The pipe fixing rubbers use a two-segment design to accommodate a wide range of pipe combinations. When installing them, therefore, it is recommended to first split them up into segments and pair the segments up only after placing them on pipes of matching sizes separately. In this regard, make sure that the mating tooth and slit of pairing segments face each other.</li> <li>When placing an stainless steel band around pipe fixing rubber, make sure that the hook end of the stainless steel band coincides with the slit side of the rubber.</li> <li>(The band can be placed the other way around, but only at the expense of work efficiency.)</li> <li>Place the stainless steel band tightly around the pipe fixing rubber so that there is no gap between them.</li> <li>Take utmost care not to create a gap over the curved section of the rubber, and engage the hook with the square hole by squeezing the curved section of the rubber where the square hole side of the band is located (see the arrow). (If the hook does not engage with the square hole, recheck whether there is a gap between the band and rubber.)</li> </ol></li></ul>	<complex-block></complex-block>







## **13 P.C. BOARD EXCHANGE PROCEDURES**

### Outdoor Unit

### 13-1. Replacement of outdoor P.C. board

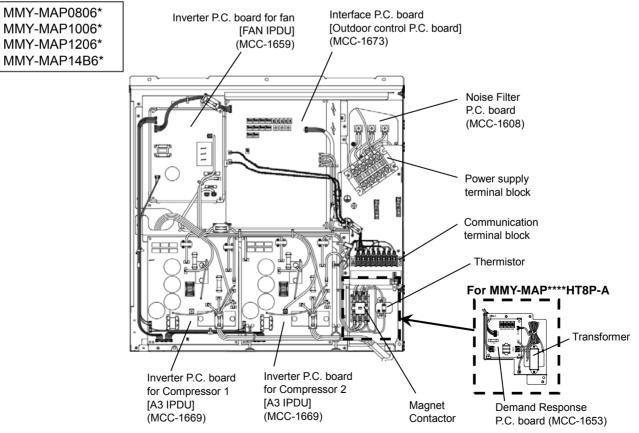
### 13-1-1 List of service P.C. boards

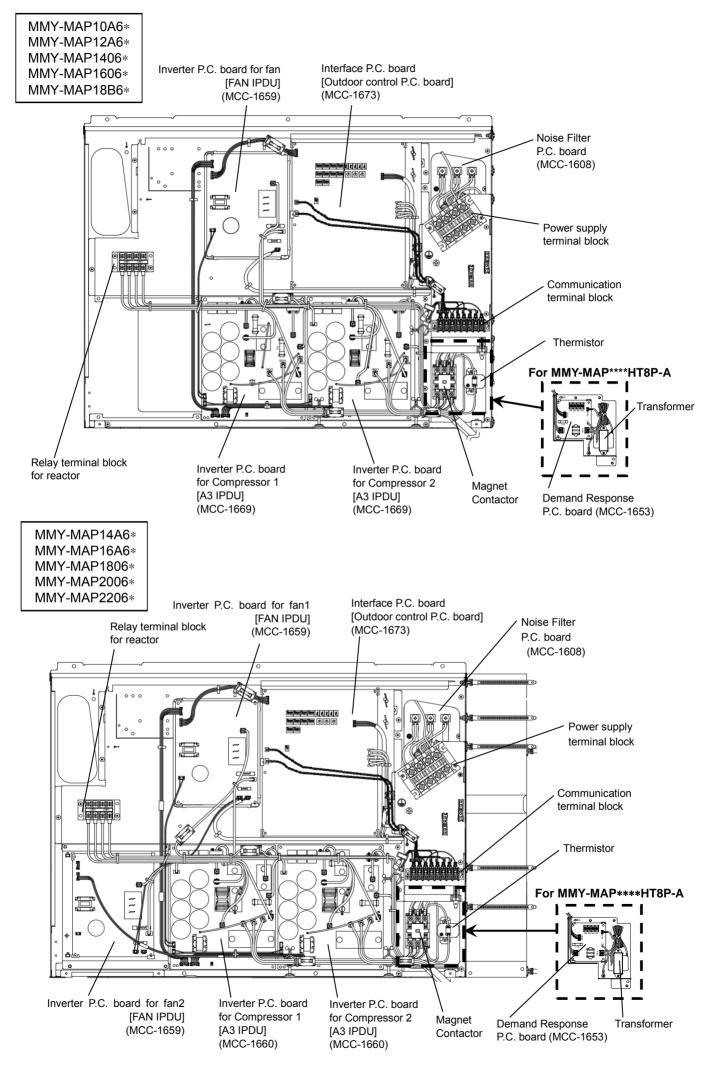
Parts code	Description	Applicable model	P.C. board type code	Product code	
43T6V831	Interface P.C. board		MCC-1673	ASM-PCB(I/F)	
43T6V628	Inverter P.C. board for compressor	MMY-MAP0806*	MCC-1669	ASM-PCB(A3IPDU)	
43T6V627	Inverter P.C. board for fan	MMY-MAP1006* MMY-MAP1206*	MCC-1659	ASM-PCB(FANIPDU)	
43T6V623	Noise filter P.C. board		MCC-1608-A,B	ASM-PCB(N/F)	
43T6V646	Demand Response P.C. board (For MMY-MAP****HT8P-A)	MMY-MAP14B6*	MCC-1653	ASM-PCB(DRC)	

Parts code	Description	Applicable model	P.C. board type code	Product code	
43T6V831	Interface P.C. board Inverter P.C. board for compressor		MCC-1673	ASM-PCB(I/F)	
43T6V629		MMY-MAP10A6* MMY-MAP12A6*	MCC-1669	ASM-PCB(A3IPDU)	
43T6V627	Inverter P.C. board for fan	MMY-MAP1406*	MCC-1659	ASM-PCB(FANIPDU)	
43T6V623	Noise filter P.C. board	MMY-MAP1606*	MCC-1608-A,B	ASM-PCB(N/F)	
43T6V646	Demand Response P.C. board (For MMY-MAP****HT8P-A)	MMY-MAP18B6*	MCC-1653	ASM-PCB(DRC)	

Parts code	Description	Applicable model	P.C. board type code	Product code		
43T6V831	Interface P.C. board		MCC-1673	ASM-PCB(I/F)		
43T6V630	Inverter P.C. board for compressor	MMY-MAP14A6*	MCC-1660	ASM-PCB(A3IPDU)		
43T6V627	Inverter P.C. board for fan	MMY-MAP16A6* MMY-MAP1806* MMY-MAP2006*	MCC-1659	ASM-PCB(FANIPDU)		
43T6V624	Noise filter P.C. board (Left side)		MCC-1608-A,B	ASM-PCB(N/F)		
43T6V625	Noise filter P.C. board (Right side)		MCC-1608-A,B	ASM-PCB(N/F) ASM-PCB(DRC)		
43T6V646	Demand Response P.C. board (For MMY-MAP****HT8P-A)	MMY-MAP2206*	MCC-1653			

### 13-1-2 Configuration of inverter assembly





### 13-1-3.Interface P.C. Board (MCC-1673) Replacement Procedure

This Interface board is commonly installed in different models before shipment. When the board assembly is to be replaced, check the displayed inspection contents below and replace the board in accordance with the model, following the below procedure.

### **Replacement steps:**

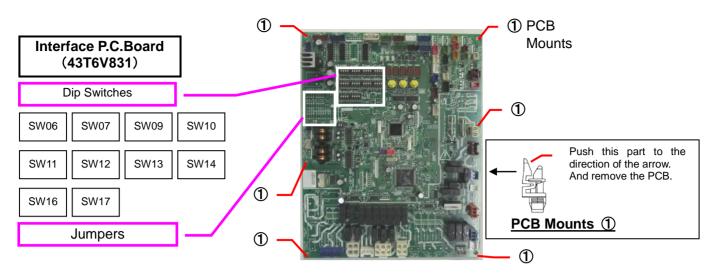
- (1) Turn off the power supply of the outdoor unit and wait at least 3 minutes.
- (2) Remove all of the connectors connected to the interface board. (Remove the connectors by pulling the connector body. Do not pull the wire).
- (3) Remove the interface board from the six PCB mounts (1).
- (4) Cut the jumper wires of the service board, as instructed in the table below. The jumper setting differs from original supplied PCB, therefore be sure to configure the Jumpers as in the table below.

If the model is not specified, inspection code "L10" is displayed and the equipment will not operate.

Model name	Madalaina	J02	J06	J07	J09	J10	J11	J12	J22
Service P.C. Board	Model size	Yes							
MMY-MAP0806HT8/7(J)P*		_	_	_	Cut	Cut	—	_	Cut
MMY-MAP1006HT8/7(J)P*	990W	-	_	_	_	Cut	-	_	Cut
MMY-MAP1206HT8/7(J)P*		-	_	_	Cut	-	-	_	Cut
MMY-MAP1406HT8/7(J)P*	4040144	-	_	_	Cut	Cut	Cut	Cut	Cut
MMY-MAP1606HT8/7(J)P*	1210W					Cut	Cut	Cut	Cut
MMY-MAP1806HT8/7(J)P*		-	-	_	Cut	—	Cut	Cut	Cut
MMY-MAP2006HT8/7(J)P*	1600W	-	-	_	-	—	Cut	Cut	Cut
MMY-MAP2206HT8/7(J)P*		I	I	I	Cut	Cut	_	Cut	Cut
MMY-MAP0806HT8(J)P-E/-TR		_	Cut	Cut	Cut	Cut	_	_	Cut
MMY-MAP1006HT8(J)P-E/-TR	990W	-	Cut	Cut	-	Cut	-	_	Cut
MMY-MAP1206HT8(J)P-E/-TR		_	Cut	Cut	Cut	_	_	_	Cut
MMY-MAP1406HT8(J)P-E/-TR	4040144	-	Cut						
MMY-MAP1606HT8(J)P-E/-TR	1210W	_	Cut	Cut	_	Cut	Cut	Cut	Cut
MMY-MAP1806HT8(J)P-E/-TR		-	Cut	Cut	Cut	-	Cut	Cut	Cut
MMY-MAP2006HT8(J)P-E/-TR	1600W		Cut	Cut			Cut	Cut	Cut
MMY-MAP2206HT8(J)P-E/-TR		-	Cut	Cut	Cut	Cut	—	Cut	Cut
MMY-MAP0806T8(J)P-E		Cut	_	_	Cut	Cut	_	_	Cut
MMY-MAP1006T8(J)P-E	990W	Cut	_	_	_	Cut	_	_	Cut
MMY-MAP1206T8(J)P-E		Cut	-	-	Cut	-	_	_	Cut
MMY-MAP1406T8(J)P-E	101011	Cut	_	_	Cut	Cut	Cut	Cut	Cut
MMY-MAP1606T8(J)P-E	1210W	Cut	_	_	_	Cut	Cut	Cut	Cut
MMY-MAP1806T8(J)P-E		Cut	_	_	Cut	_	Cut	Cut	Cut
MMY-MAP2006T8(J)P-E	1600W	Cut	_	_	_	_	Cut	Cut	Cut
MMY-MAP2206T8(J)P-E		Cut	_	-	Cut	Cut	_	Cut	Cut
MMY-MAP0806T8/7(J)P#		Cut	_	_	Cut	Cut	_	_	Cut
MMY-MAP1006T8/7(J)P#		Cut	_	_	-	Cut	_	_	Cut
MMY-MAP1206T8/7(J)P#	990W	Cut	_	_	Cut	-	_	_	Cut
MMY-MAP14B6T8/7(J)P#		Cut	Cut	_	Cut	Cut	Cut	Cut	Cut
MMY-MAP1406T8/7(J)P#		Cut	_	_	Cut	Cut	Cut	Cut	Cut
MMY-MAP1606T8/7(J)P#	1210W	Cut	_	_	_	Cut	Cut	Cut	Cut
MMY-MAP18B6T8/7(J)P#		Cut	Cut	_	Cut	-	Cut	Cut	Cut
MMY-MAP1806T8/7(J)P#		Cut	_	_	Cut	-	Cut	Cut	Cut
MMY-MAP2006T8/7(J)P#	1600W	Cut					Cut	Cut	Cut
MMY-MAP2206T8/7(J)P#		Cut			Cut	Cut	_	Cut	Cut
MMY-MAP0806HT8/7(J)P-ME		_	_	_	Cut	Cut	_	_	Cut
MMY-MAP1006HT8/7(J)P-ME	990W	_	_	_	-	Cut	_	-	Cut
MMY-MAP10A6HT8/7(J)P-ME	1210W	_	_	Cut	_	Cut	_	_	Cut
MMY-MAP1206HT8/7(J)P-ME	990W	_	_	-	Cut	-	_	_	Cut
MMY-MAP12A6HT8/7(J)P-ME		_	_	Cut	Cut	_	_	-	Cut
MMY-MAP1406HT8/7(J)P-ME	1210W	_	_	_	Cut	Cut	Cut	Cut	Cut
MMY-MAP14A6HT8/7(J)P-ME	1600W	_	_	Cut	Cut	Cut	Cut	Cut	Cut
MMY-MAP1606HT8/7(J)P-ME	1210W	_	_	_	_	Cut	Cut	Cut	Cut
MMY-MAP16A6HT8/7(J)P-ME	-	_	_	Cut	_	Cut	Cut	Cut	Cut
MMY-MAP1806HT8/7(J)P-ME	1600W	_	_	_	Cut	_	Cut	Cut	Cut
MMY-MAP2006HT8/7(J)P-ME	1	_	_	_	_	_	Cut	Cut	Cut

\* The characters in accordance with the destination may attach to the end of model name. (Blank, -A, -C)

# The characters in accordance with the destination may attach to the end of model name. (Blank, -ID, -SG, -T)



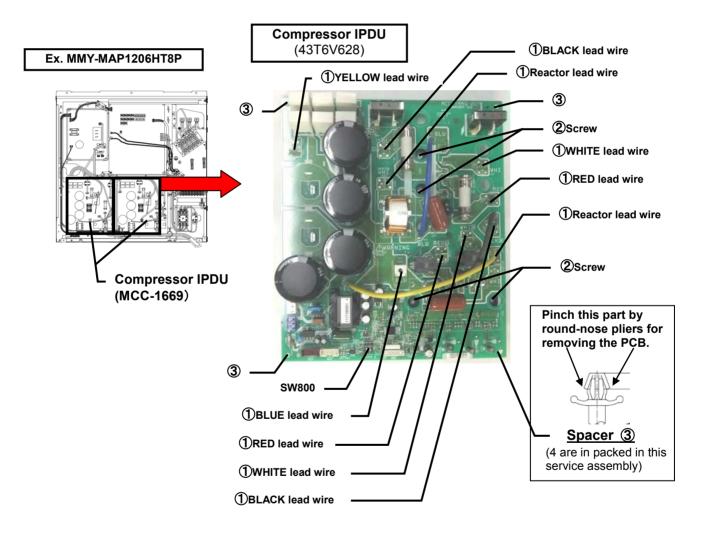
- (5) Set the dip switch settings of the service board to match the switch settings of the PCB being replaced.
- (6) Install the service board to the outdoor control unit (Confirm that it is securely fixed to the PCB Mounts).
- (7) Connect the connectors (Confirm that they are correctly and securely inserted).
- (8) If a component on the board is bent during board replacement, adjust it manually ensuring that it is not short or contact other parts.
- (9) Install the cover, then turn on the power supply. Check the operation.

## 13-1-4. Comp-IPDU P.C. Board (MCC-1669) Replacement Procedure </br><br/>MAP0806\*, 1006\*, 1206\*, 14B6\* type>

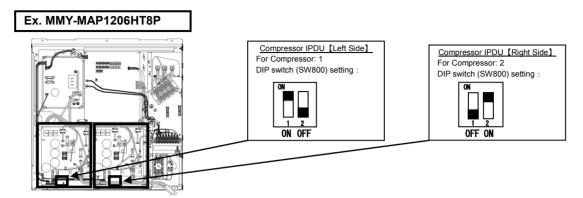
This board is commonly installed in different models before shipment. Set the DIP switch (SW800) setting of the service board to the switch setting before replacement.

#### **Replacement Steps:**

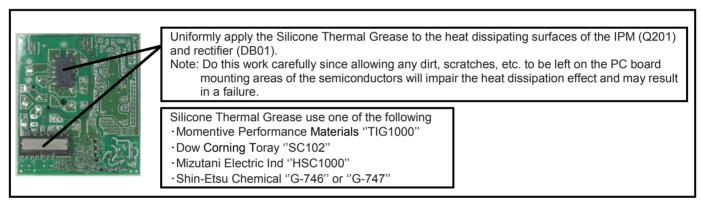
- (1) Turn off the power supply of the outdoor unit and allow at least 3 minutes for the capacitor to discharge.
- (2)Remove all the connectors and the Faston and screw terminals(①) connected to the Compressor IPDU. (Remove the connectors by pulling the connector body. Do not pull the wire).
- (3)Remove all the four screws(2) which secures the Compressor IPDU to the Heat sink. (These screws are to be re-used after procedure.)
- (4)Remove the Compressor IPDU from the four spacers (③) by pinching the top of the spacers by round-nose pliers.



(5) Set the DIP switch (SW800) setting of the service board to match the switch setting from the original PCB.
 -Set the DIP switch (SW800) depending on the position of the IPDU within the electrical box, as shown in the following diagram.



(6) Apply the Silicone Thermal Grease to the semiconductors (DB01, Q201) on the service PC board, and align the positions of the heat sink holes to mount the Compressor IPDU on the outdoor control unit. And fix the Compressor IPDU to the outdoor control unit by the spacers (③).



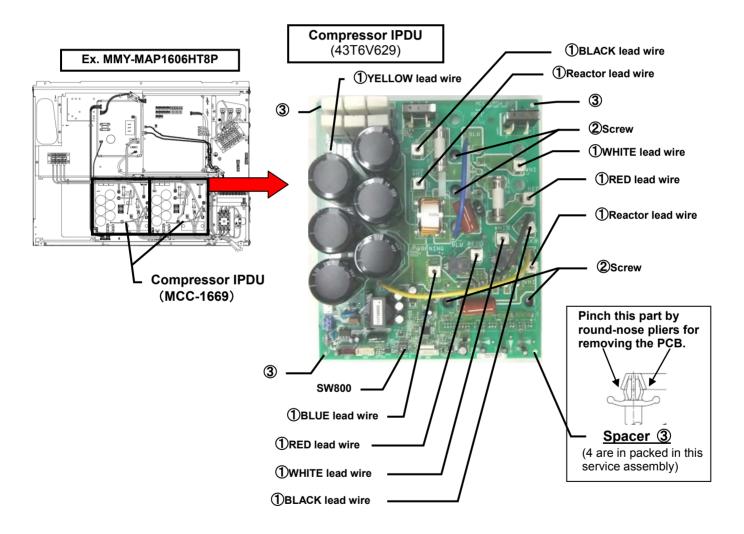
- (7) Screw the Compressor IPDU to the heat sink by the four screws that were removed in step (3). If the screws are loose, the effect component will generate heat, and cause it to breakdown. Do not use an electric driver or an air driver. As it can cause component damage. The torque of the screws for DB01 and Q201 is "1.2Nm".
- (8) Re-connect the connectors and Faston and screw terminals(①).
   Be sure that all the connectors and the screw terminals are connected correctly and securely inserted.
  - **Note:** ①When connecting the white lead wire which is connected to CN02, be absolutely sure that it is passed through the T611 transformer and then connected
    - (2)When connecting the black lead wire which is connected to CN03, be absolutely sure that it is passed through the T612 transformer and then connected
    - (If it is not passed through the transformer, it will not be possible for the input current level to be measured correctly, and a compressor failure may result.)
- (9) If the components on the PCB were bent during this procedure, straighten them so they do not touch other parts.
- T612 2, 3, or or Dr Cor T611 DB01 Q201
- (10) Install the cover, then turn on the supply. Check the operation.

## 13-1-5. Comp-IPDU P.C. Board (MCC-1669) Replacement Procedure <MAP10A6\*, 12A6\*, 1406\*, 1606\*, 18B6\* type>

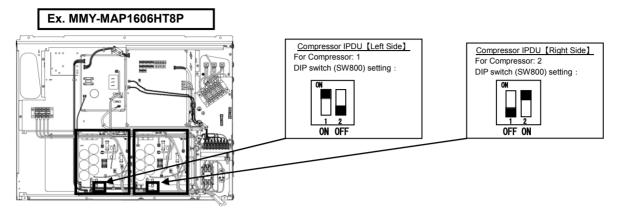
This board is commonly installed in different models before shipment. Set the DIP switch (SW800) setting of the service board to the switch setting before replacement.

#### **Replacement Steps:**

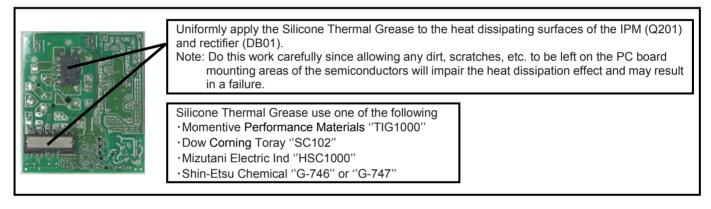
- (1) Turn off the power supply of the outdoor unit and allow at least 3 minutes for the capacitor to discharge.
- (2)Remove all the connectors and the Faston and screw terminals(①) connected to the Compressor IPDU. (Remove the connectors by pulling the connector body. Do not pull the wire).
- (3)Remove all the four screws(②) which secures the Compressor IPDU to the Heat sink. (These screws are to be re-used after procedure.)
- (4)Remove the Compressor IPDU from the four spacers (③) by pinching the top of the spacers by round-nose pliers.



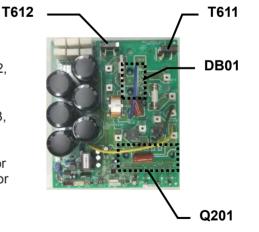
(5) Set the DIP switch (SW800) setting of the service board to match the switch setting from the original PCB. -Set the DIP switch (SW800) depending on the position of the IPDU within the electrical box, as shown in the following diagram.



(6) Apply the Silicone Thermal Grease to the semiconductors (DB01, Q201) on the service PC board, and align the positions of the heat sink holes to mount the Compressor IPDU on the outdoor control unit. And fix the Compressor IPDU to the outdoor control unit by the spacers (③).



- (7) Screw the Compressor IPDU to the heat sink by the four screws that were removed in step (3). If the screws are loose, the effect component will generate heat, and cause it to breakdown. Do not use an electric driver or an air driver. As it can cause component damage. The torque of the screws for DB01 and Q201 is "1.2Nm".
- (8) Re-connect the connectors and Faston and screw terminals(1).
   Be sure that all the connectors and the screw terminals are connected correctly and securely inserted.
  - **Note:** ①When connecting the white lead wire which is connected to CN02, be absolutely sure that it is passed through the T611 transformer and then connected
    - ②When connecting the black lead wire which is connected to CN03, be absolutely sure that it is passed through the T612 transformer and then connected
    - (If it is not passed through the transformer, it will not be possible for the input current level to be measured correctly, and a compressor failure may result.)
- (9) If the components on the PCB were bent during this procedure, straighten them so they do not touch other parts.
- (10) Install the cover, then turn on the supply. Check the operation.

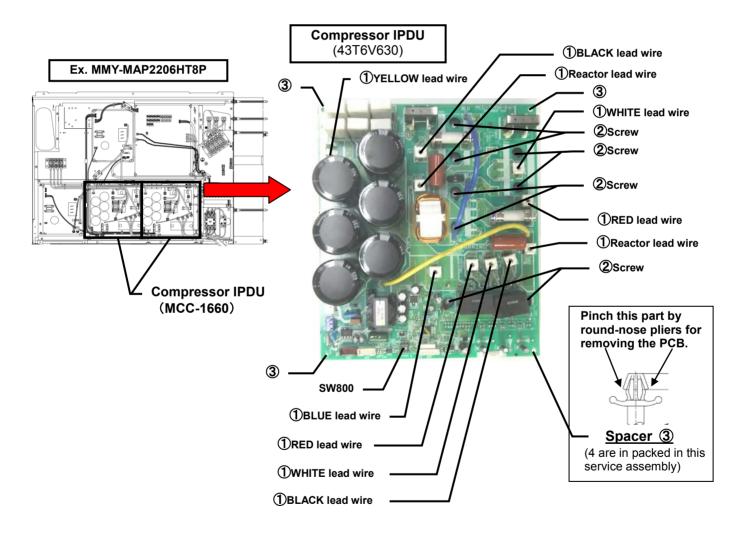


## 13-1-6. Comp-IPDU P.C. Board (MCC-1660) Replacement Procedure </br><br/>MAP14A6\*, 16A6\*, 1806\*, 2006\*, 2206\* type>

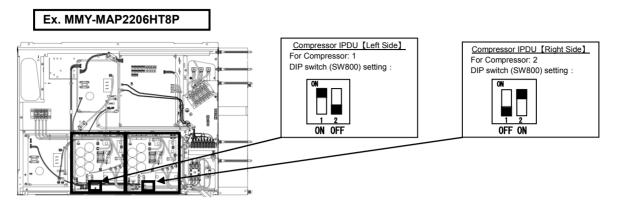
This board is commonly installed in different models before shipment. Set the DIP switch (SW800) setting of the service board to the switch setting before replacement.

#### **Replacement Steps:**

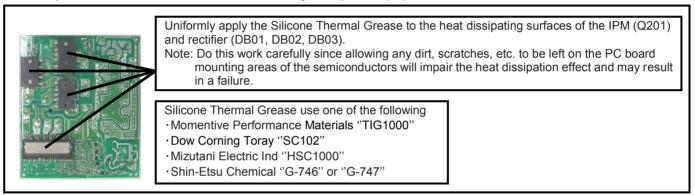
- (1) Turn off the power supply of the outdoor unit and allow at least 3 minutes for the capacitor to discharge.
- (2)Remove all the connectors and the Faston and screw terminals(①) connected to the Compressor IPDU. (Remove the connectors by pulling the connector body. Do not pull the wire).
- (3)Remove all the eight screws(2) which secures the Compressor IPDU to the Heat sink. (These screws are to be re-used after procedure.)
- (4)Remove the Compressor IPDU from the four spacers (③) by pinching the top of the spacers by round-nose pliers.



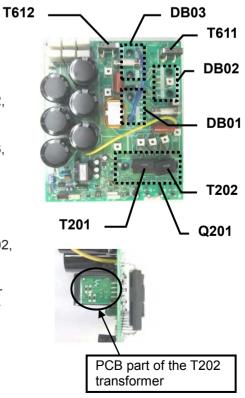
(5) Set the DIP switch (SW800) setting of the service board to match the switch setting from the original PCB. -Set the DIP switch (SW800) depending on the position of the IPDU within the electrical box, as shown in the following diagram.



(6) Apply the Silicone Thermal Grease to the semiconductors (DB01, DB02, DB03, Q201) on the service PC board, and align the positions of the heat sink holes to mount the Compressor IPDU on the outdoor control unit. And fix the Compressor IPDU to the outdoor control unit by the spacers (③).



- (7) Screw the Compressor IPDU to the heat sink by the eight screws that were removed in step (3). If the screws are loose, the effect component will generate heat, and cause it to breakdown. Do not use an electric driver or an air driver. As it can cause component damage. The torque of the screws for DB01, DB02, DB03 and Q201 is "1.2Nm".
- (8) Re-connect the connectors and Faston and screw terminals(①).
   Be sure that all the connectors and the screw terminals are connected correctly and securely inserted.
  - **Note:** ①When connecting the lead wire, don't touch PCB part of the T202 transformer.
    - (2)When connecting the white lead wire which is connected to CN02, be absolutely sure that it is passed through the T611 transformer and then connected.
    - ③When connecting the black lead wire which is connected to CN03, be absolutely sure that it is passed through the T612 transformer and then connected.
    - (4) When connecting the red lead wire which is connected to CN203, be absolutely sure that it is passed through the T201 transformer and then connected.
    - (5)When connecting the white lead wire which is connected to CN202, be absolutely sure that it is passed through the T202 transformer and then connected.
    - (If it is not passed through the transformer, it will not be possible for the input current level to be measured correctly, and a compressor failure may result.)
- (9) If the components on the PCB were bent during this procedure, straighten them so they do not touch other parts.
- (10) Install the cover, then turn on the supply. Check the operation.

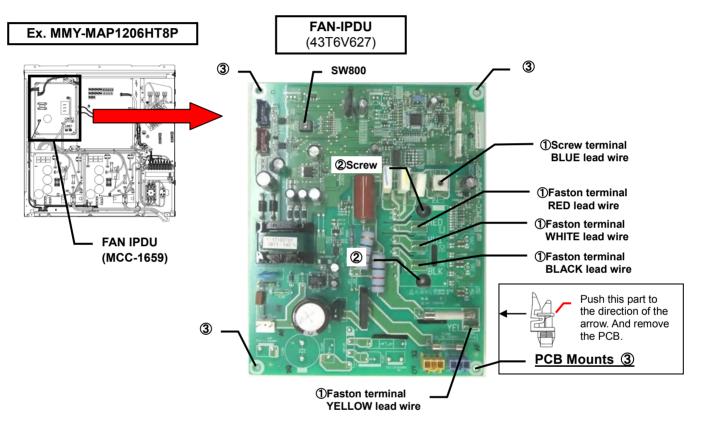


### 13-1-7. Fan-IPDU P.C. Board (MCC-1659) Replacement Procedure

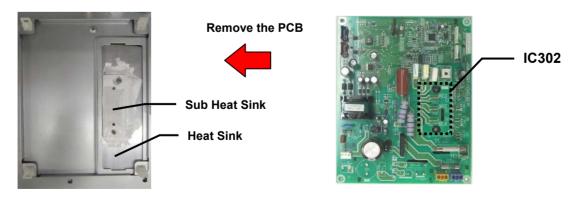
This board is commonly installed in different models before shipment. Set the DIP switch (SW800) setting of the service board to the switch setting before replacement.

#### **Replacement steps:**

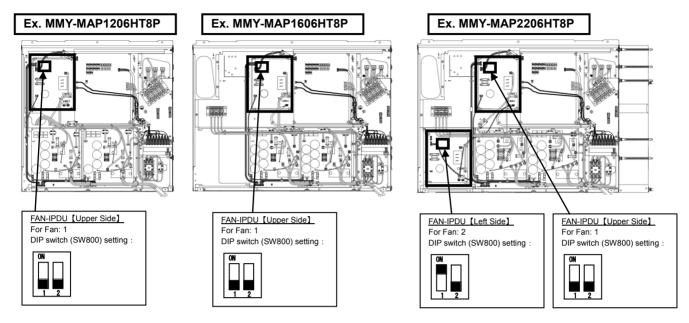
- (1) Turn off the power supply of the outdoor unit and allow at least 3 minutes for the capacitor to discharge.
- (2) Remove all the connectors and the Faston and screw terminals(①) connected to the FAN IPDU. (Remove the connectors and Faston terminals by pulling the connector body. Do not pull the wire).
- (3) Remove all the two screws(②) which secures the FAN IPDU to the Heat sink. (These screws are to be re-used after procedure.)
- (4) Remove the Fan IPDU from the four PCB Mounts (③).



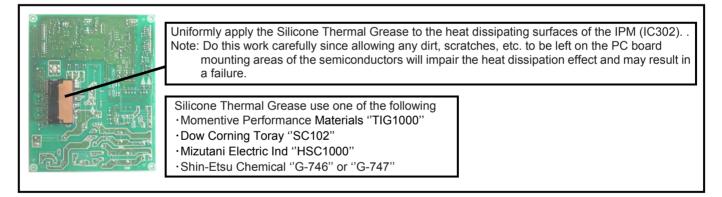
(5) Confirm that no dirt or damage is on the sub heat sink. As it can reduce the heat transfer efficiency, and cause a breakdown.



(6) Set the DIP switch (SW800) setting of the service board to match the switch setting from the original PCB. -Set the DIP switch (SW800) depending on the position of the IPDU within the electrical box, as shown in the following diagram.



(6) Apply the Silicone Thermal Grease to the semiconductors (IC302) on the service PC board, and align the PCB mount holes on the PCB with the PCB mounts, and fix the FAN IPDU to the outdoor control unit by clipping the PCB into the PCB mounts (③).

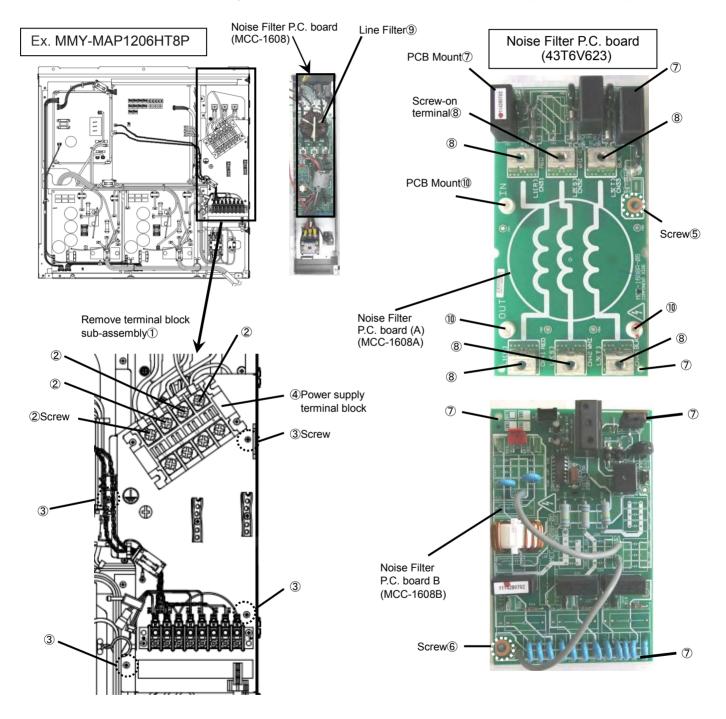


- (7) Screw the FAN IPDU to the heat sink by the two screws that were removed in step (3). If the screws are loose, the effected component will generate heat, and cause in to breakdown. Do not use an electric driver or an air driver, as it can cause component damage. The torque of 2 screws (IC302) is "0.55Nm".
- (8) Re-connect the connectors and Faston and screw terminals(①). Be sure that all the connectors and the Faston terminals are connected correctly and securely inserted.
- (9) If the components on the PCB were bent during this procedure, straighten them so they do not to touch other parts.
- (10) Install the cover, then turn on the supply. Check the operation.

## 13-1-8. Noise Filter P.C. Board (MCC-1608A, B) Replacement Procedure <MAP0806\*, 1006\*, 1206\*, 14B6\*, 10A6\*, 12A6\*, 1406\*, 1606\*, 18B6\* type>

#### **Replacement steps:**

- (1) Turn off the power supply of the outdoor unit and allow at least 3 minutes for the capacitor to discharge.
- (2) Remove the terminal block sub-assembly ①.
   Remove the screws ② on the power supply terminal block ④ and the screws ③ securing the terminal block subassembly ①.
  - he screws will be reused during the installation of the service P.C. board, so keep them in a safe place.



- (3) Disconnect all the connectors and Faston terminals used to connect wiring to the noise filter P.C. board.
  - he line filter (9) and its leads, both connected to the screw-on terminals (8) of the noise filter P.C. board (A) will be removed in step 6.
  - D sconnect all the connectors and Faston terminals.

- (4) Remove the earth screws (5), (6) and the three PCB mount (10).
  - The removed earth screws (5), (6) and the PCB mount (11) will be reused during the installation of the service P.C. board, so keep them in a safe place.
- (5) Remove the noise filter P.C. board assembly by unlocking the four PCB mounts used to secure the P.C. board ⑦.
- (6) Remove the line filter (9) and its leads, both connected to the screw-on terminals (8) of the just-removed noise filter P.C. board (A), and reinstall them on the service P.C. board (A) by firmly connecting them to the screw-on terminals (8) in the same manner as before.
- (7) Install the service P.C. boards (A) and (B) in the outdoor unit controller. (Make sure that they are firmly secured to the PCB mounts ⑦ and ⑩.)

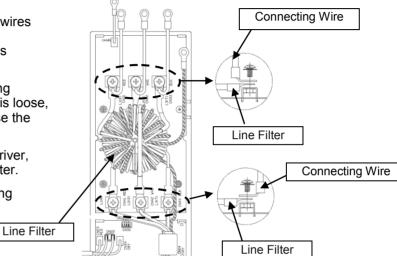
#### Line Filter installation:

Screw the line filter and the connecting wires together to the terminals as right figure. The torque of 6 screws of the line filter is "1.84ft·lbs (2.5Nm)".

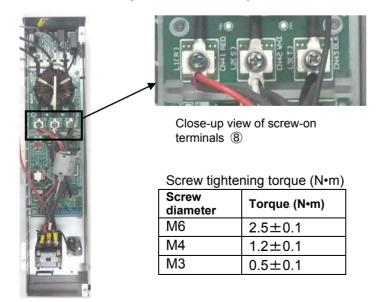
Please check that the screws connecting the line filter are not loose. If the screw is loose, the screw will generate heats, and cause the line filter to breakdown.

Do not use an electric driver or an air driver, as this can cause damage to the line filter.

Connect the wires according to the wiring diagram.



- (8) Securely connect the service P.C. boards to the chassis using the earth screws (5), (6) removed in step (4). If either of the screws is loose, it will pose a risk of device failure by degrading noise control, so take care while engaging in the work. Nevertheless, do not use an electric or pneumatic screwdriver under any circumstances as it may lead to component damage.
- (9) Connect the wiring using the connectors and Fastons removed in step (3). Make sure that the connectors and Fastons are connected correctly and securely.
- (10) If any component on the P.C. board becomes crooked during replacement, straighten it without touching any other component.
- (11) Mount the terminal block sub-assembly ① and firmly secure it using the screws ③.
- (12) Securely connect the red, white and black leads from the service P.C. board (A) to the power supply terminal block ④ using the screws ②.
- (13) Put the cover on, turn on the power, and check operation.



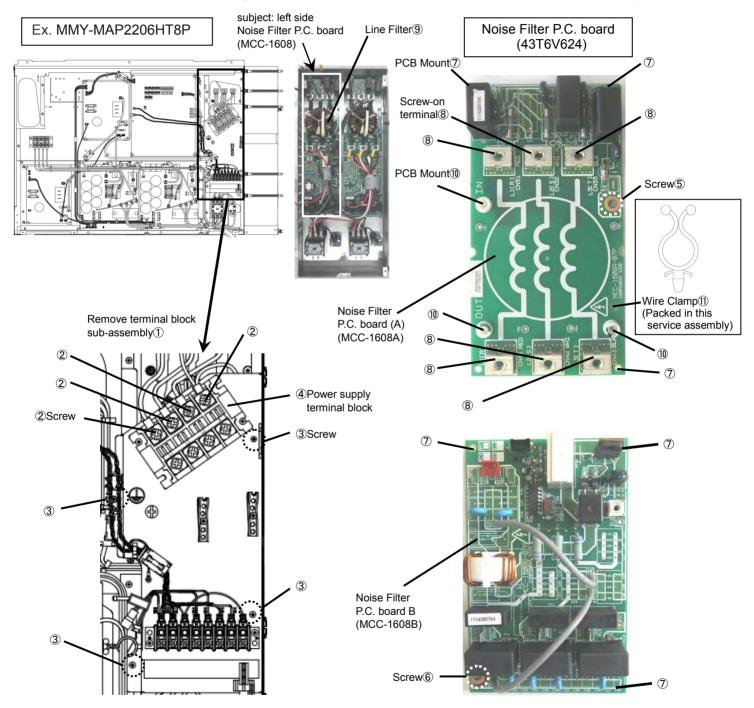


Close-up view of terminal block sub-assembly

## 13-1-9. Noise Filter P.C. Board (MCC-1608A, B) Replacement Procedure <MAP14A6\*, 16A6\*, 1806\*, 2006\*, 2206\* type (Left side of Noise Filter Box)>

#### **Replacement steps:**

- (1) Turn off the power supply of the outdoor unit and allow at least 3 minutes for the capacitor to discharge.
- (2) Remove the terminal block sub-assembly ①.
   Remove the screws ② on the power supply terminal block ④ and the screws ③ securing the terminal block subassembly ①.
  - he screws will be reused during the installation of the service P.C. board, so keep them in a safe place.



- (3) Disconnect all the connectors and Faston terminals used to connect wiring to the noise filter P.C. board.
  - he line filter (9) and its leads, both connected to the screw-on terminals (8) of the noise filter P.C. board (A) will be removed in step 6.
  - D sconnect all the connectors and Faston terminals.

- (4) Remove the earth screws (5), (6) and the three PCB mount (10).
  - The removed earth screws (5), (6) and the PCB mount (10) will be reused during the installation of the service P.C. board, so keep them in a safe place.
- (5) Remove the noise filter P.C. board assembly by unlocking the four PCB mounts used to secure the P.C. board  $\hat{\mathcal{O}}$ .
- (6) Remove the line filter (9) and its leads, both connected to the screw-on terminals (8) of the just-removed noise filter P.C. board (A), and reinstall them on the service P.C. board (A) by firmly connecting them to the screw-on terminals (8) in the same manner as before.
- (7) Install the service P.C. boards (A) and (B) in the outdoor unit controller. Insert wire clamp (1) into the hole of P.C. board (A) (Make sure that they are firmly secured to the PCB mounts (7) and (10.)

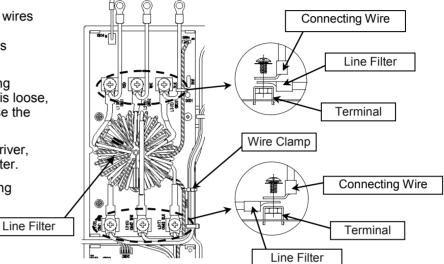
#### Line Filter installation:

Screw the line filter and the connecting wires together to the terminals as right figure. The torque of 6 screws of the line filter is "1.84ft lbs (2.5Nm)".

Please check that the screws connecting the line filter are not loose. If the screw is loose, the screw will generate heats, and cause the line filter to breakdown.

Do not use an electric driver or an air driver, as this can cause damage to the line filter.

Connect the wires according to the wiring diagram.



- (8) Securely connect the service P.C. boards to the chassis using the earth screws (5), (6) removed in step (4). If either of the screws is loose, it will pose a risk of device failure by degrading noise control, so take care while engaging in the work. Nevertheless, do not use an electric or pneumatic screwdriver under any circumstances as it may lead to component damage.
- (9) Connect the wiring using the connectors and Fastons removed in step (3). Make sure that the connectors and Fastons are connected correctly and securely.
- (10) If any component on the P.C. board becomes crooked during replacement, straighten it without touching any other component.
- (11) Mount the terminal block sub-assembly ① and firmly secure it using the screws ③.
- (12) Securely connect the red, white and black leads from the service P.C. board (A) to the power supply terminal block ④ using the screws ②.
- (13) Put the cover on, turn on the power, and check operation.





Close-up view of screw-on terminals (8)

Screw tightening torque (N•m)

Screw diameter	Torque (N•m)		
M6	2.5±0.1		
M4	1.2±0.1		
M3	0.5±0.1		

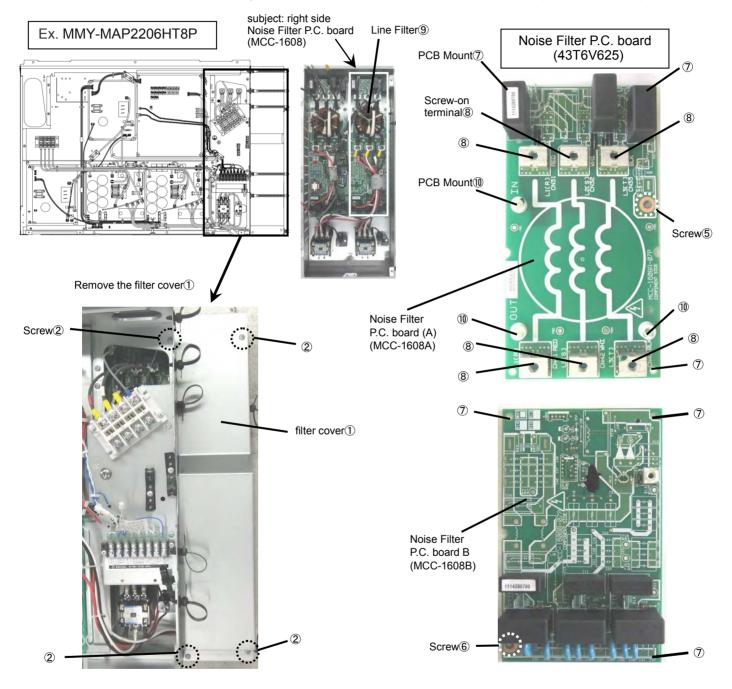


close-up view of terminal block sub-assembly

### 13-1-10. Noise Filter P.C. Board (MCC-1608A, B) Replacement Procedure <MAP14A6\*, 16A6\*, 1806\*, 2006\*, 2206\* type (Right side of Noise Filter Box)>

#### **Replacement steps:**

- (1) Turn off the power supply of the outdoor unit and allow at least 3 minutes for the capacitor to discharge.
- (2) Remove the filter cover (1).
- Remove the screws (2) on the Inverter assembly securing the filter cover (1).
- he screws will be reused during the installation of the service P.C. board, so keep them in a safe place.



(3) Disconnect all the connectors and Faston terminals used to connect wiring to the noise filter P.C. board.

- he line filter (9) and its leads, both connected to the screw-on terminals (8) of the noise filter P.C. board (A) will be removed in step 6.
- D sconnect all the connectors and Faston terminals.

(4) Remove the earthing screws (5), (6) and the three PCB mount (10).
he removed earthing screws (5), (6) and the PCB mount (10) will be reused during the installation of the service P.C. board, so keep them in a safe place.

- (5) Remove the noise filter P.C. board assembly by unlocking the four PCB mounts used to secure the P.C. board ⑦.
- (6) Remove the line filter (9) and its leads, both connected to the screw-on terminals (8) of the just-removed noise filter P.C. board (A), and reinstall them on the service P.C. board (A) by firmly connecting them to the screw-on terminals (8) in the same manner as before.

80 10

(7) Install the service P.C. boards (A) and (B) in the outdoor unit controller. (Make sure that they are firmly secured to the PCB mounts ⑦ and ⑩.)

#### Line Filter installation:

Screw the line filter and the connecting wires together to the terminals as right figure. The torque of 6 screws of the line filter is "1.84ft·lbs (2.5Nm)".

Please check that the screws connecting the line filter are not loose. If the screw is loose, the screw will generate heats, and cause the line filter to breakdown.

Do not use an electric driver or an air driver, as this can cause damage to the line filter.

Connect the wires according to the wiring diagram.

- (8) Securely connect the service P.C. boards to the chassis using the earthing screws (5), (6) removed in step (4). If either of the screws is loose, it will pose a risk of device failure by degrading noise control, so take care while engaging in the work. Nevertheless, do not use an electric or pneumatic screwdriver under any circumstances as it may lead to component damage.
- (9) Connect the wiring using the connectors and Fastons removed in step (3). Make sure that the connectors and Fastons are connected correctly and securely.

Line Filter

- (10) If any component on the P.C. board becomes crooked during replacement, straighten it without touching any other component.
- (11) Mount the filter cover ① and firmly secure it using the screws ②.
- (12) Put the cover on, turn on the power, and check operation.





Close-up view of screw-on terminals ⑧

Screw diameter	Torque (N•m)		
M6	2.5±0.1		
M4	1.2±0.1		
M3	0.5±0.1		



Line Filter

Connecting Wire

Line Filter

Terminal

Terminal

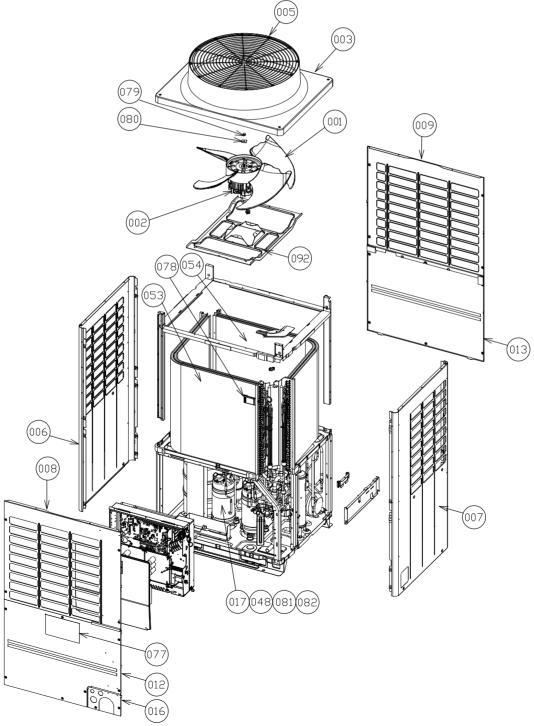
**Connecting Wire** 

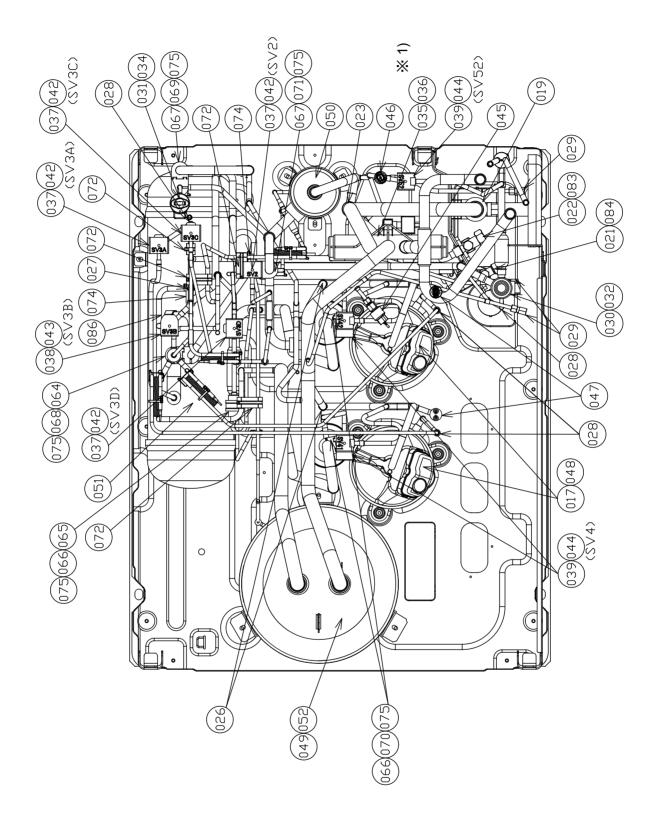
close-up view of terminal block sub-assembly and filter cover

# **14** EXPLODED DIAGRAM/PARTS LIST

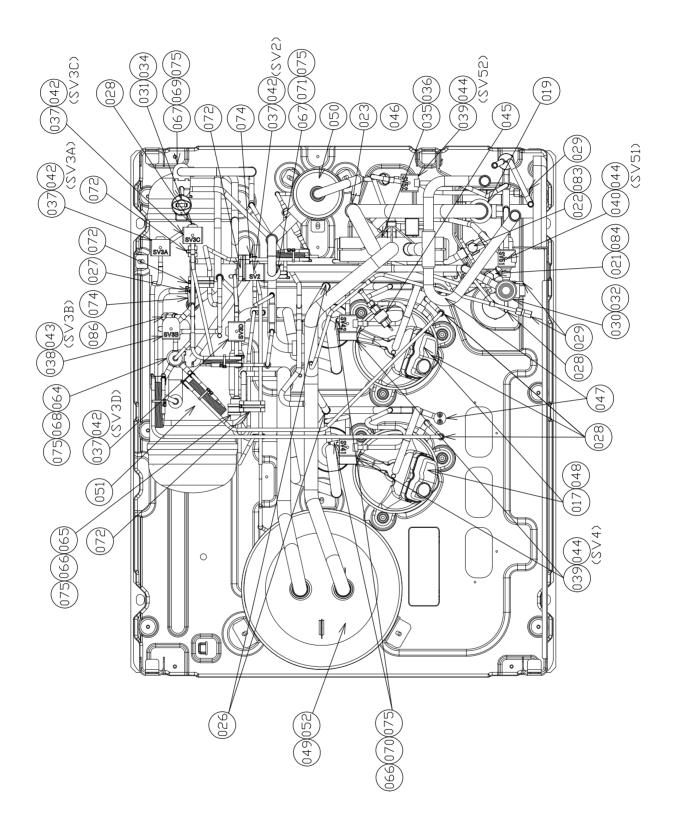
#### SMMS-e OUTDOOR UNIT

MMY-MAP0806HT8(J)P, MAP1006HT8(J)P, MAP1206HT8(J)P MMY-MAP0806HT7(J)P, MAP1006HT7(J)P, MAP1206HT7(J)P MMY-MAP0806HT8(J)P-ME, MMP1006H8(J)P-ME, MAP1206HT8(J)P-ME MMY-MAP0806HT8(J)P-E, MAP1006HT7P-ME, MAP1206HT8(J)P-E MMY-MAP0806HT8(J)P-E, MAP1006HT8(J)P-E, MAP1206HT8(J)P-E MMY-MAP0806HT8(J)P-TR, MAP1006HT8(J)P-TR, MAP1206HT8(J)P-TR MMY-MAP0806HT8P-A, MAP1006HT8P-A, MAP1206HT8P-A MMY-MAP0806HT8P-A, MAP1006HT8P-A, MAP1206HT8P-A MMY-MAP0806T8(J)P, MAP1006T8(J)P, MAP1206T8(K)P, MAP14B6T8(J)P MMY-MAP0806T8P-SG, MAP1006T7(J)P, MAP1206T7(J)P, MAP14B6T7(J)P MMY-MAP0806T8P-SG, MAP1006T8P-SG, MAP1206T8(J)P-ID, MAP14B6T8(J)P-ID MMY-MAP0806T8(J)P-ID, MAP1006T8(J)P-ID, MAP1206T8(J)P-ID, MAP14B6T8(J)P-ID

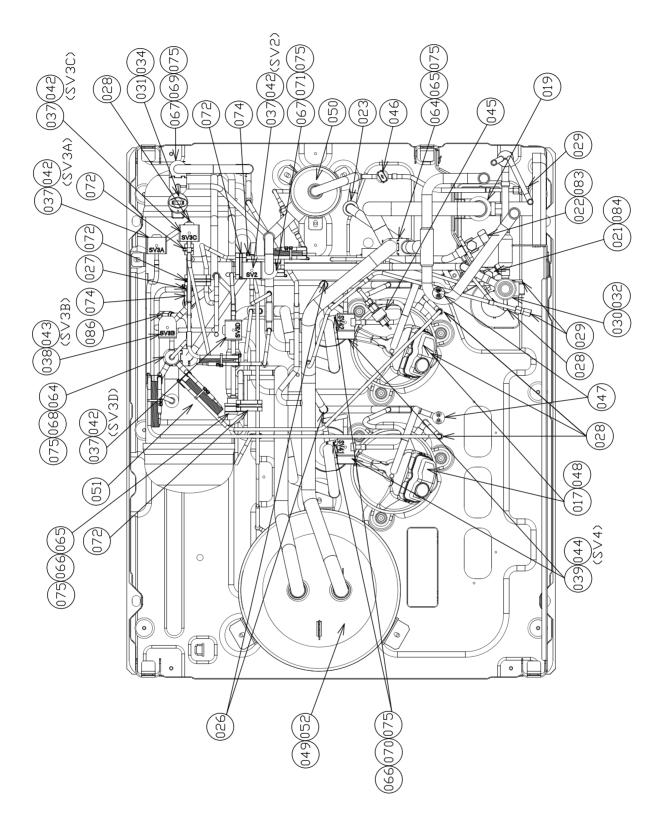




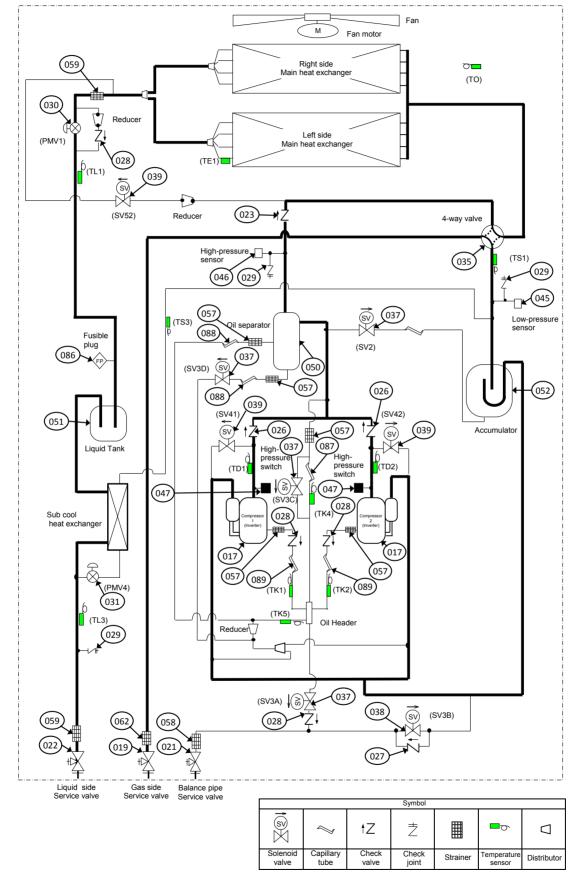
% 1) There is no part for T8(J)P-E model.



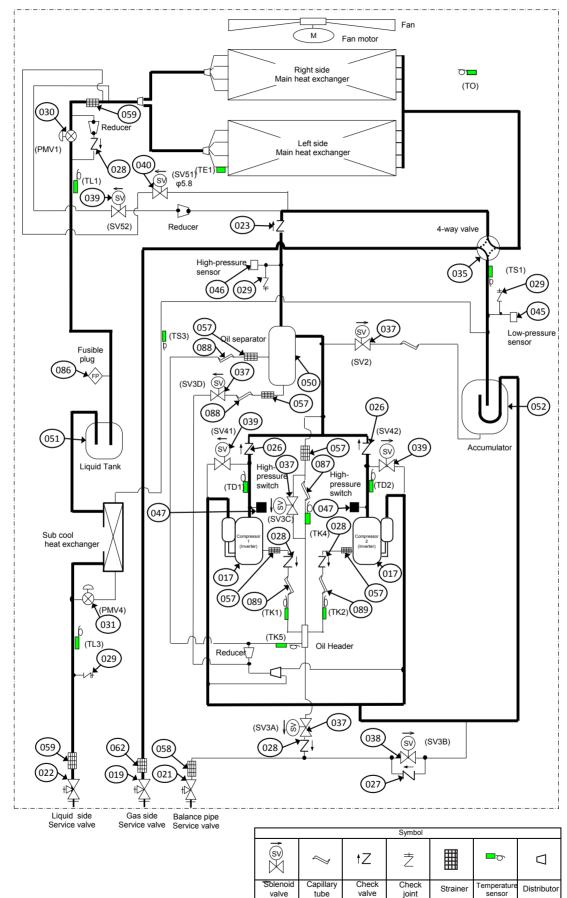
For T8(J)P, T7(J)P, T8P-SG, T8(J)P-ID, T8(J)P-T model



#### Outdoor Unit (8, 10, 12HP) Model: MMY-MAP0806\*, MMY-MAP1006\*, MMY-MAP1206\* REFRIGERATION CIRCUIT DIAGRAM (For HT8(J)P, HT7(J)P, HT8(J)P-ME, HT7P-ME, T8(J)P-E, HT8P-A model)



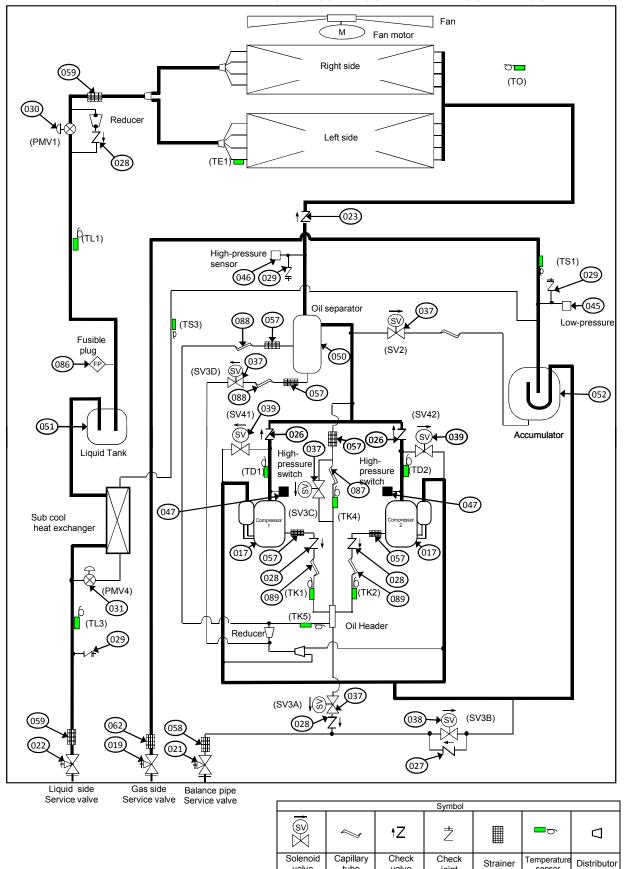
#### Outdoor Unit (8, 10, 12HP) Model: MMY-MAP0806\*, MMY-MAP1006\*, MMY-MAP1206\* REFRIGERATION CIRCUIT DIAGRAM (For HT8(J)P-E, HT8(J)P-TR model)



#### Outdoor Unit (8, 10, 12, 14HP)

Model : MMY-MAP0806T\*, MMY-MAP1006T\*, MMY-MAP1206T\*, MMY-MAP14B6T\*

**REFRIGERATION CIRCUIT DIAGRAM** (For T8(J)P, T7(J)P, T8P-SG, T8(J)P-ID, T8(J)P-T model)



tube

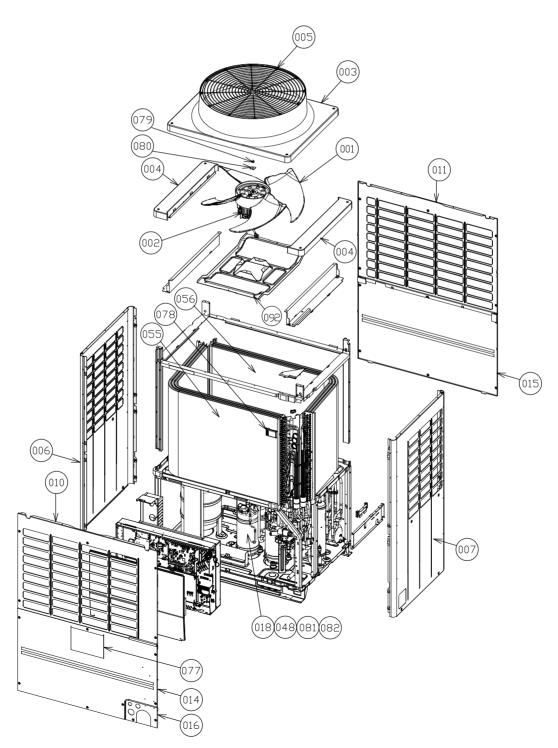
valve

ioint

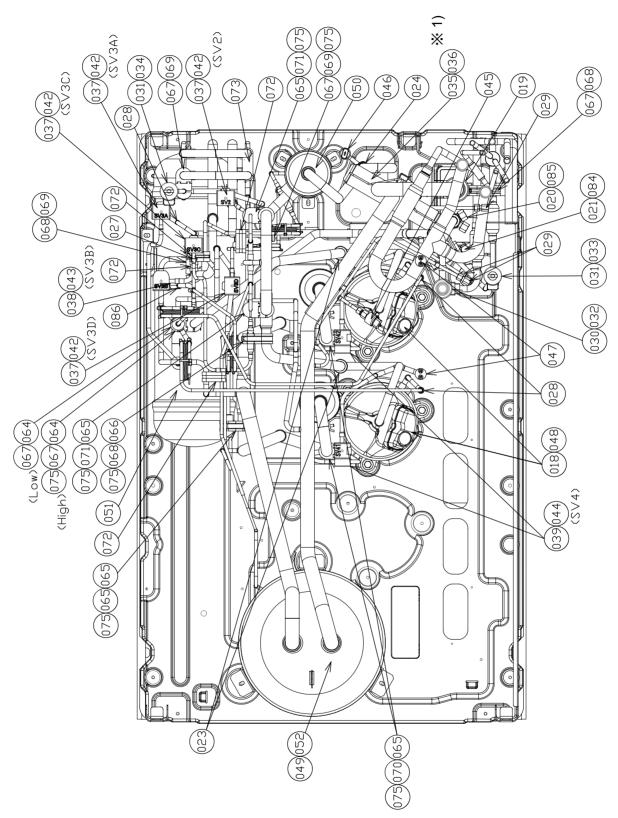
sensor

valve

SMMS-e OUTDOOR UNIT MMY-MAP1406HT8(J)P, MAP1606HT8(J)P MMY-MAP1406HT7(J)P, MAP1606HT7(J)P MMY-MAP10A6HT8(J)P-ME, MAP12A6HT8(J)P-ME MMY-MAP1406HT8(J)P-ME, MAP1606HT8(J)P-ME MMY-MAP10A6HT7P-ME, MAP12A6HT7P-ME MMY-MAP1406HT7P-ME, MAP1606HT7P-ME MMY-MAP1406HT8(J)P-E, MAP1606HT8(J)P-E MMY-MAP1406T8(J)P-E, MAP1606T8(J)P-E MMY-MAP1406HT8(J)P-TR, MAP1606HT8(J)P-TR MMY-MAP1406HT8P-A, MAP1606HT8P-A MMY-MAP1406T8(J)P, MAP1606T8(J)P, MAP18B6T8(J)P MMY-MAP1406T7(J)P, MAP1606T7(J)P, MAP18B6T7(J)P MMY-MAP1406T8P-SG, MAP1606T8P-SG, MAP18B6T8P-SG MMY-MAP1406T8(J)P-ID, MAP1606T8(J)P-ID MAP18B6T8(J)P-ID MMY-MAP1406T8(J)P-T, MAP1606T8(J)P-T, MAP18B6T8(J)P-T MMY-MAP1606HT8P-C

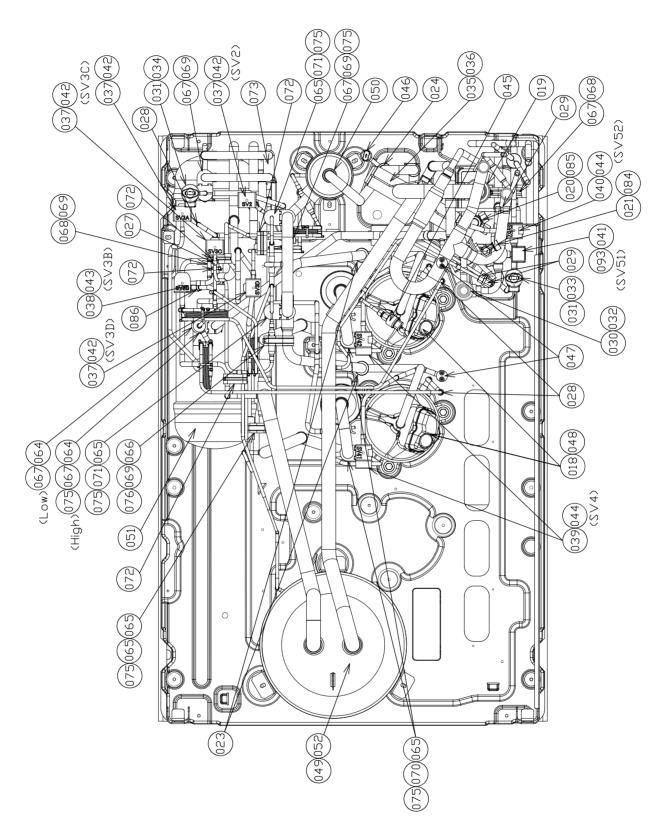


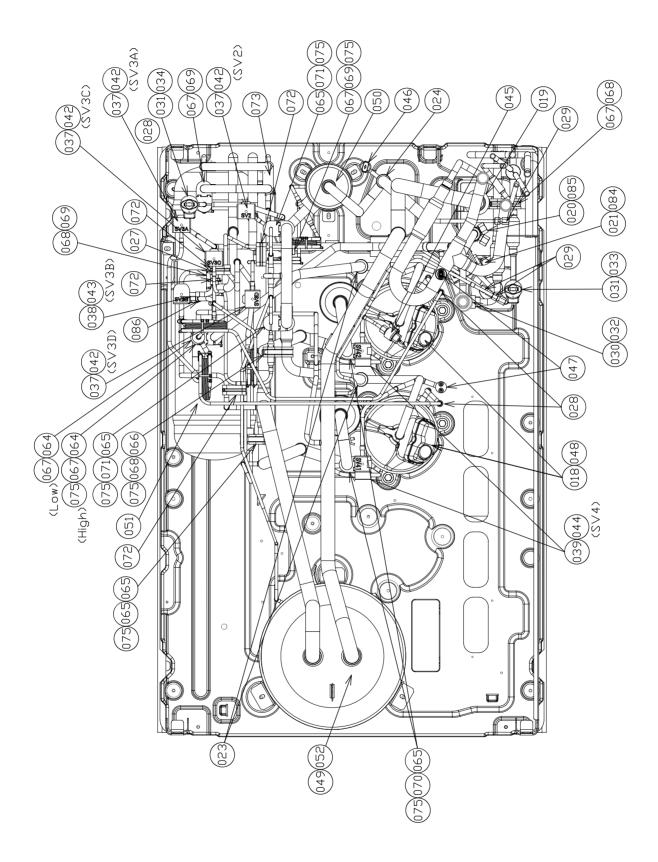
For HT8(J)P, HT7(J)P, HT8(J)P-ME, HT7P-ME, T8(J)P-E, HT8P-A, HT8P-C model



% 1) There is no part for T8(J)P-E model.

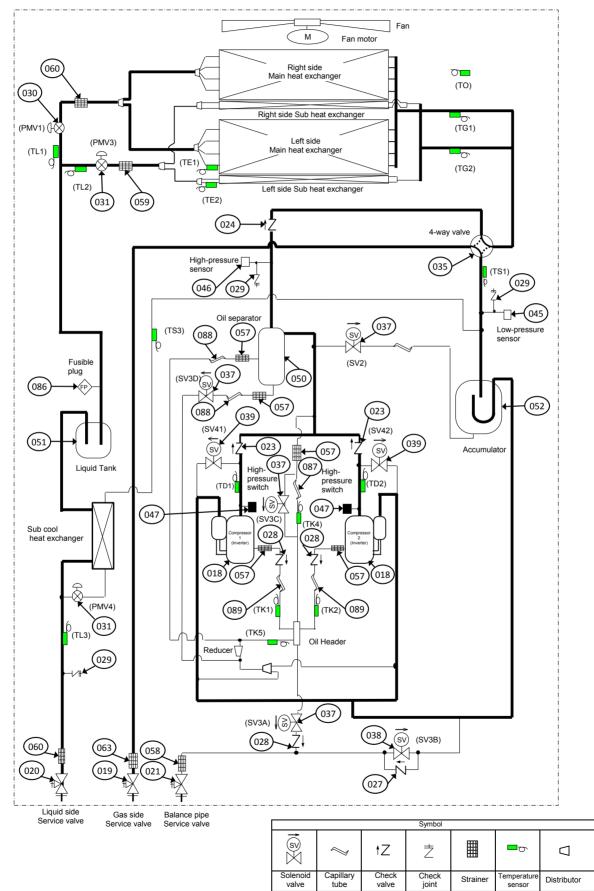
### For HT8(J)P-E, HT8(J)P-TR model



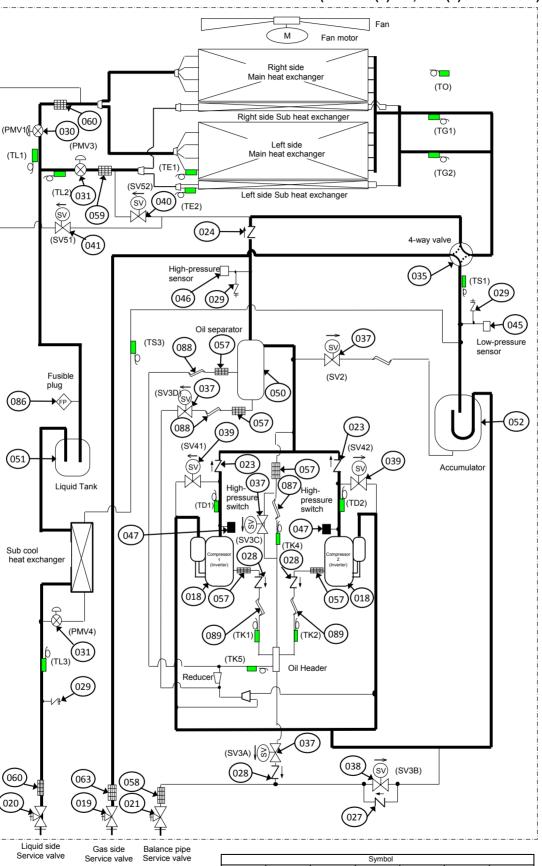


Outdoor Unit (10, 12, 14, 16HP) Model: MMY-MAP10A6\*, MMY-MAP12A6\*, MMY-MAP1406\*, MMY-MAP1606\* REFRIGERATION CIRCUIT DIAGRAM

(For HT8(J)P, HT7(J)P, HT8(J)P-ME, HT7P-ME, T8(J)P-E, HT8P-A, HT8P-C model)



#### Outdoor Unit (14, 16HP) Model: MMY-MAP1406\*, MMY-MAP1606\* REFRIGERATION CIRCUIT DIAGRAM



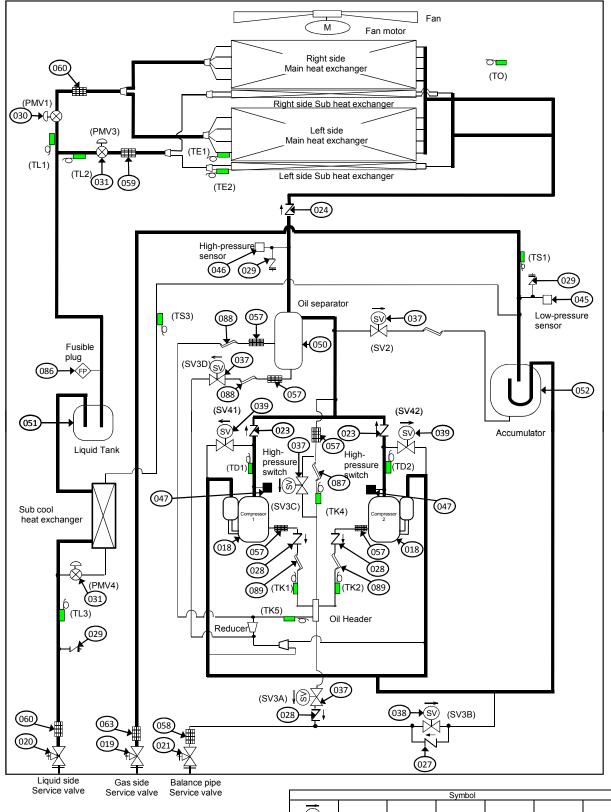
Symbol						
$\mathbb{X}$	Ŕ	tΖ	Ż		đ	
Solenoid valve	Capillary tube	Check valve	Check	Strainer	Temperature	Distributo

(For HT8(J)P-E, HT8(J)P-TR model)

#### Outdoor Unit (14, 16, 18HP)

#### Model : MMY-MAP1406T\*, MMY-MAP1606T\*, MMY-MAP16B6T\*

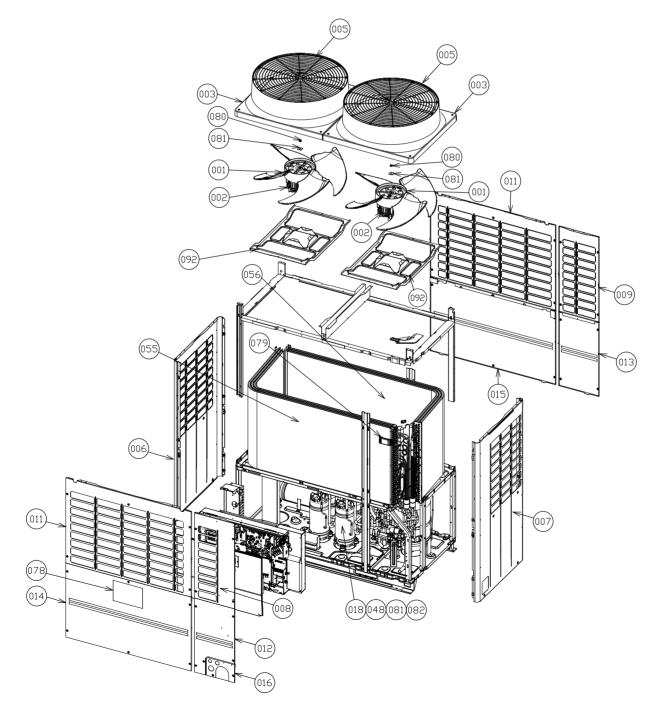
REFRIGERATION CIRCUIT DIAGRAM (For T8(J)P, T7(J)P, T8P-SG, T8(J)P-ID, T8(J)P-T model)



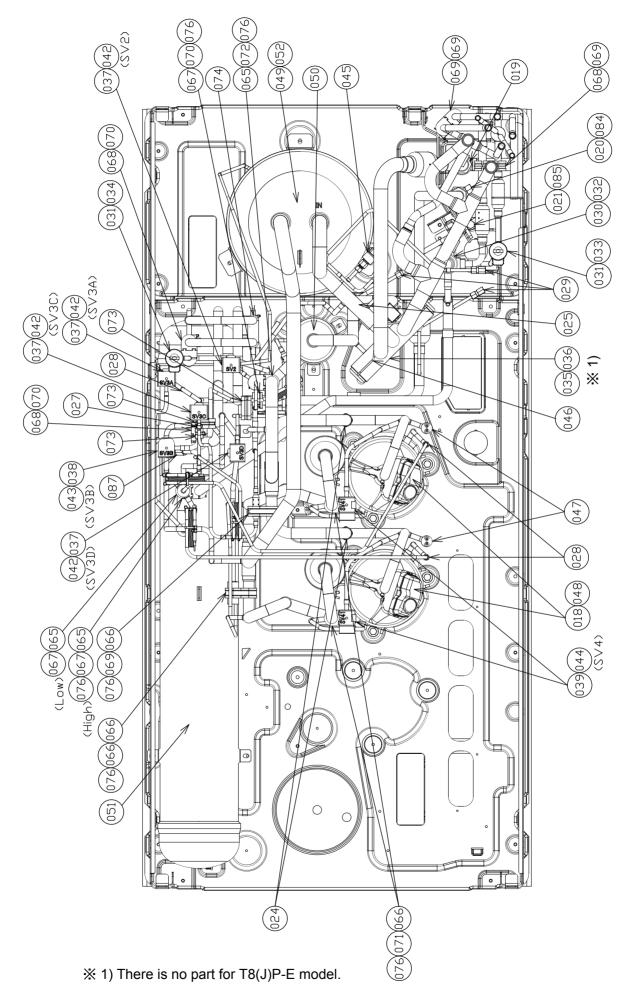
Symbol						
XO	Ż	tΖ	Ż		đ	Δ
Solenoid valve	Capillary tube	Check valve	Check joint	Strainer	Temperature sensor	Distributor

#### SMMS-e OUTDOOR UNIT

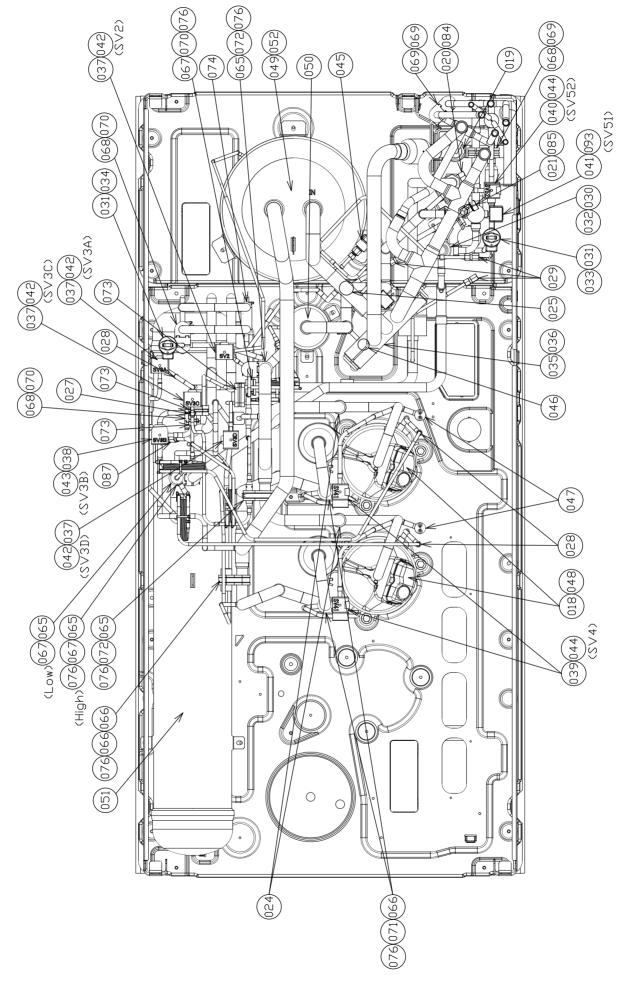
MMY-MAP1806HT8(J)P, MAP2006HT8(J)P, MAP2206HT8(J)P MMY-MAP1806HT7(J)P, MAP2006HT7(J)P, MAP2206HT7(J)P MMY-MAP14A6HT8(J)P-ME, MAP16A6HT8(J)P-ME MMY-MAP1806HT8(J)P-ME, MAP2006HT8(J)P-ME MMY-MAP14A6HT7P-ME, MAP16A6HT7P-ME MMY-MAP1806HT7P-ME, MAP2006HT7P-ME MMY-MAP1806HT8(J)P-E, MAP2006HT8(J)P-E, MAP2206HT8(J)P-E MMY-MAP1806T8(J)P-E, MAP2006T8(J)P-E, MAP2206T8(J)P-E MMY-MAP1806HT8(J)P-TR, MAP2006HT8(J)P-TR, MAP2206HT8(J)P-TR MMY-MAP1806HT8P-A, MAP2006HT8P-A MMY-MAP1806T8(J)P, MAP2006T8(J)P, MAP2206T8(J)P MMY-MAP1806T7(J)P, MAP2006T7(J)P, MAP2206T7(J)P MMY-MAP1806T8P-SG, MAP2006T8P-SG, MAP2206T8P-SG MMY-MAP1806T8(J)P-ID, MAP2006T8(J)P-ID, MAP2206T8(J)P-ID MMY-MAP1806T8(J)P-T, MAP2006T8(J)P-T, MAP2206T8(J)P-T MMY-MAP1806HT8P-C, 2006HT8P-C, 2206HT8P-C



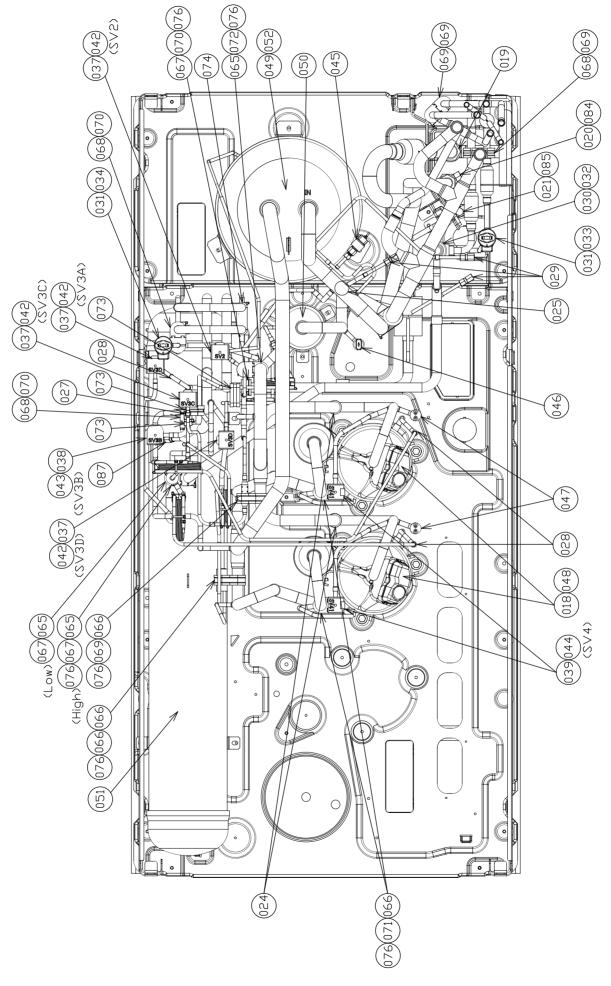
For HT8(J)P, HT7(J)P, HT8(J)P-ME, HT7P-ME, T8(J)P-E, HT8P-A, HT8P-C model



### For HT8(J)P-E, HT8(J)P-TR model

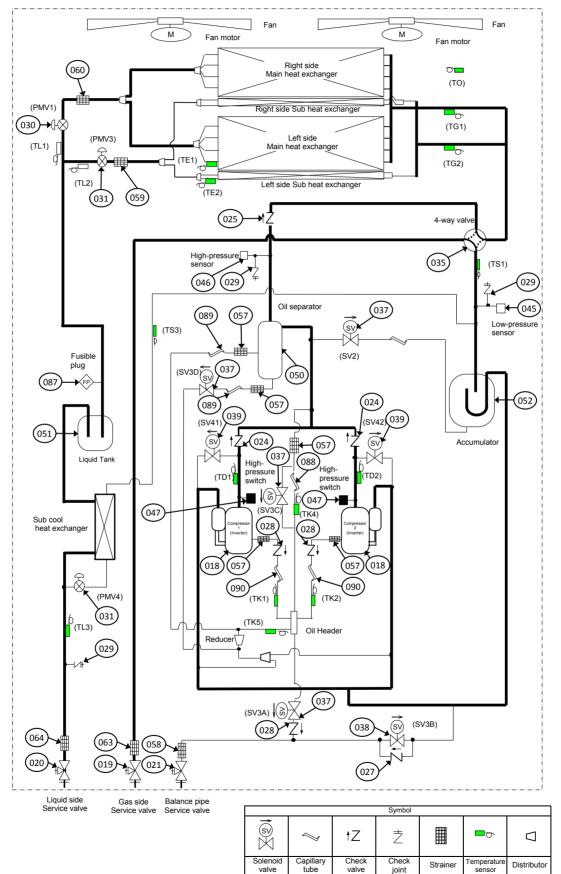


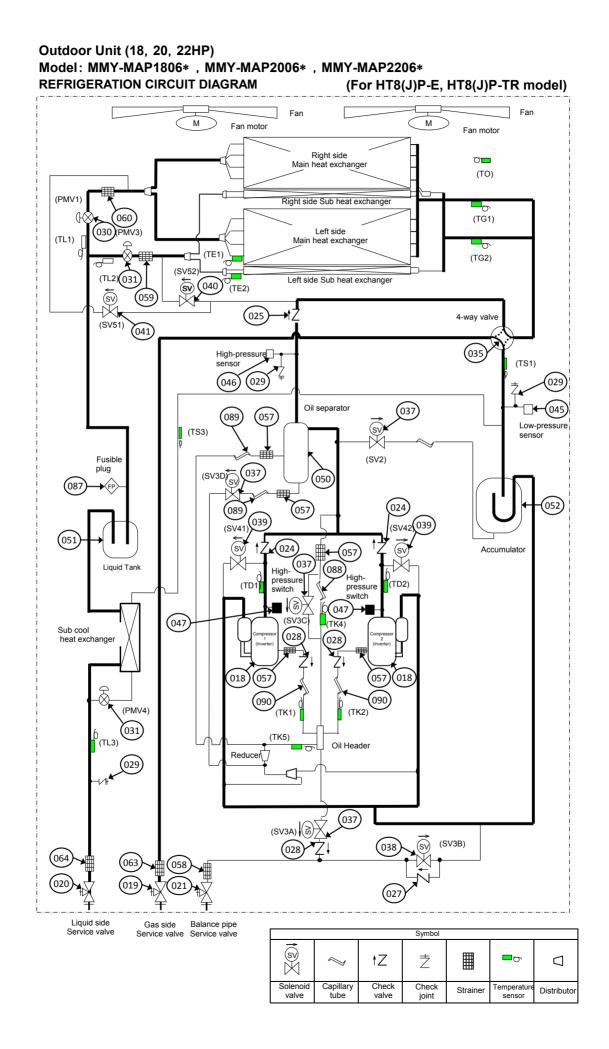
For T8(J)P, T7(J)P, T8P-SG, T8(J)P-ID, T8(J)P-T model



#### Outdoor Unit (14, 16, 18, 20, 22HP) Model: MMY-MAP14A6\*, MMYMAP16A6\*, MMY-MAP1806\*, MMY-MAP2006\*, MMY-MAP2206\* REFRIGERATION CIRCUIT DIAGRAM

(For HT8(J)P, HT7(J)P, HT8(J)P-ME, HT7P-ME, T8(J)P-E, HT8P-A, HT8P-C model)

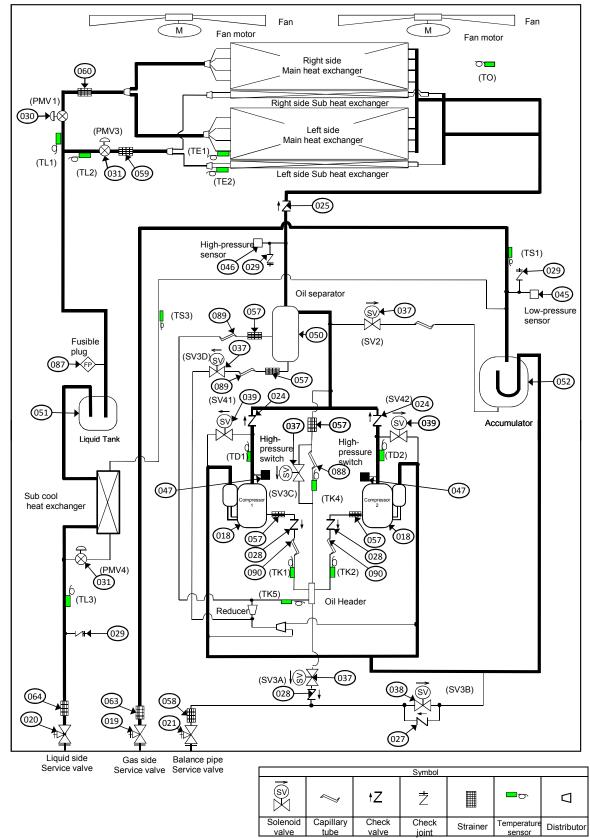




#### Outdoor Unit (18, 20, 22HP)

Model : MMY-MAP1806T\*, MMY-MAP2006T\*, MMY-MAP2206T\*

REFRIGERATION CIRCUIT DIAGRAM (For T8(J)P, T7(J)P, T8P-SG, T8(J)P-ID, T8(J)P-T model)



					Q'ty/	Set MMY-	_	_	_
Ref. No.	Part No.	Description	MAP0806 (H)T*(J)P	MAP1006 (H)T*(J)P		MAP10A6 (H)T*(J)P		MAP1406 (H)T*(J)	MAP1606 (H)T*(J)
001	43T20341	FAN, PROPELLER	1	1	1	1	1	1	1
002	43T20342	MOTOR, FAN, DC530-620V, 2300L	1	1	1	1	1	1	1
003	43T19354	CABINET, AIR OUTLET	1	1	1	1	1	1	1
004	43T19355	CABINET, SIDE, UP				2	2	2	2
005	43T19353	GUARD, FAN	1	1	1	1	1	1	1
006	43T00613	CABINET ASSY, SIDE, LEFT	1	1	1	1	1	1	1
007	43T00614	CABINET ASSY, SIDE, RIGHT	1	1	1	1	1	1	1
008	43T00624	CABINET, AIR INLET, FRONT	1	1	1				
009	43T00620	CABINET, AIR INLET, BACK	1	1	1				
010	43T00625	CABINET, AIR INLET, FRONT				1	1	1	1
011	43T00622	CABINET, AIR INLET, BACK				1	1	1	1
012	43T00615	CABINET ASSY, FRONT, DOWN	1	1	1				
013	43T00616	CABINET ASSY, BACK, DOWN	1	1	1				
014	43T00617	CABINET ASSY, FRONT, DOWN				1	1	1	1
015	43T00618	CABINET ASSY, BACK, DOWN				1	1	1	1
016	43T00623	PANEL	1	1	1	1	1	1	1
017 <sup>*5</sup>	43T41458	COMPRESSOR, RA421A3TB-20MD	2	2	2				
018 <sup>*5</sup>	43T41485	COMPRESSOR, RA641A3TB-20M				2	2	2	2
019	43T46393	VALVE, BALL, 25.4	1	1	1	1	1	1	1
020	43T46381	VALVE, BALL, SBV-JA5GTC-1				1	1	1	1
021	43T46366	VALVE, PACKED, 9.52	1	1	1	1	1	1	1
022	43T46374	VALVE, PACKED, 12.7	1	1	1				
023	43T46444	VALVE, CHECK, UCV-A1505DRQ5	1	1	1	2	2	2	2
024	43T46445	VALVE, CHECK, UCV-A1506DRQ5				1	1	1	1
026	43T46398	VALVE, CHECKED, BCV-804DY	2	2	2				
027	43T46399	VALVE, CHECK, BCV-603DY	1	1	1	1	1	1	1
028	43T46400	VALVE, CHECKED, BCV-302DY	4	4	4	3	3	3	3
029	43T46409	JOINT,CHECK	3	3	3	3	3	3	3
030	43T46447	VALVE, PMV, PAM-BA2YGTF-1 (φ4.8)	1	1	1	1	1	1	1
031	43T46448	VALVE, PMV, UKV-25D100 (φ2.5)	1	1	1	2	2	2	2
032	43T46449	COIL, PMV	1	1	1	1	1	1	1
033	43T46450	COIL, PMV				1	1	1	1
034	43T46451	COIL, PMV	1	1	1	1	1	1	1
035	43T46452	VALVE, 4WAY, SHF-35B-67-04	1	1	1	1	1	1	1
036	43T46453 *1,3,6	COIL, SOLENOID, AC220-240V 50HZ	1		1	1	1	1	1
030	43T46457 * <sup>2, 4</sup>	COIL, SOLENOID, AC208-230V 60HZ		1	1	I	1	1	1
037	43T46454	VALVE, 2WAY, TEV-S1220DQ50	4	4	4	4	4	4	4
038	43T46411	VALVE, 2WAY, VPV-603DQ2	1	1	1	1	1	1	1
039	43T46412	VALVE, 2WAY, FDF3A06	3	3	3	2	2	2	2
	43T46455 *1,3,6,7	COIL, VALVE, 2WAY, TEV-SMOAJ2170A1							
042	43T46458 <sup>*2, 4</sup>	COIL, VALVE, 2WAY, TEV-SMOAQ2247A1	- 4	4	4	4	4	4	4
04.5	43T46403 *1,3,6,7	COIL, SOLENOID, VPV-MOAJ510B0	- 1	1	1	1	1	1	1
	43T46404 <sup>*2, 4</sup>	COIL, SOLENOID, VPV-MOAQ1843A0							
044	43T46405 <sup>*1,3,6,7</sup>	COIL, VALVE, 2WAY, FQ-G593	3		3	2	2	2	2
044	43T46406 <sup>*2, 4</sup>	COIL. VALVE. 2WAY. FQ-D640		3	5	2	2	2	2
045	43T50357	SENSOR ASSY. LOW PRESSURE	1	1	1	1	1	1	1
046	43T50358	SENSOR ASSY, HIGH PRESSURE	1	1	1	1	1	1	1
047	43T63359	SWITCH, PRESSURE	2	2	2	2	2	2	2
048	43T57303	HEATER, CASE, 29W 240V	2	2	2	2	2	2	2
049	43T57304	HEATER, CASE, 55W 240V	1	1	1	1	1	1	1
050	43T48314	SEPARATOR	1	1	1	1	1	1	1
051	43T48315	TANK, LIQUID	1	1	1	1	1	1	1
052	43T48313	ACCUMULATOR	1	1	1	1	1	1	1
053	43T43523	CONDENSER ASSY, TWO ROW, LEFT	1	1	1				
054	43T43524	CONDENSER ASSY, TWO ROW, RIGHT	1	1	1				
	43T43525	CONDENSER ASSY, THREE ROW, LEFT	1			1	1	1	1
055	43143323	CONDENSER ASST, THREE ROW, LEFT							

#### For HT8(J)P, HT7(J)P, HT8(J)P-ME, HT7P-ME, T8(J)P-E, HT8P-A model

\*1) For HT8(J)P model
\*2) For HT7(J)P model
\*3) For HT8(J)P-ME model
\*4) For HT7P-ME model
\*5) Due to the service compressor for Brazil is now acquiring the INMETRO certification (No371/328/163/ (402), we don't carry it as a service parts. Thus please contact the sales company when necessary.
\*6) Eor HT8P A model

\*6) For HT8P-A model

\*7) For T8(J)P-E model

			Q'ty/Set MMY-							
Ref. No.	Part No.	Description	MAP0806 (H)T*(J)P	MAP1006 (H)T*(J)P	MAP1206 (H)T*(J)P	MAP10A6 (H)T*(J)P		MAP1406 (H)T*(J)P	MAP1606 (H)T*(J)P	
057	43T47388	STRAINER	5	5	5	5	5	5	5	
058	43T47389	STRAINER	1	1	1	1	1	1	1	
059	43T47390	STRAINER	2	2	2	1	1	1	1	
060	43T47392	STRAINER				2	2	2	2	
062	43T47394	STRAINER	1	1	1					
063	43T47395	STRAINER				1	1	1	1	
064	43T49348	RUBBER, SUPPORTER, PIPE	1	1	1	2	2	2	2	
065	43T49349	RUBBER, SUPPORTER, PIPE	1	1	1	6	6	6	6	
066	43T49350	RUBBER, SUPPORTER, PIPE	3	3	3	1	1	1	1	
067	43T49351	RUBBER, SUPPORTER, PIPE	2	2	2	5	5	5	5	
068	43T49352	RUBBER, SUPPORTER, PIPE	1	1	1	3	3	3	3	
069	43T49353	RUBBER, SUPPORTER, PIPE	1	1	1	3	3	3	3	
070	43T49354	RUBBER, SUPPORTER, PIPE	2	2	2	2	2	2	2	
071	43T49355	RUBBER, SUPPORTER, PIPE	1	1	1	2	2	2	2	
072	43T49347	RUBBER, SUPPORTER, PIPE	4	4	4	4	4	4	4	
073	43T49365	RUBBER, SUPPORTER, PIPE				1	1	1	1	
074	43T49360	RUBBER, SUPPORTER, PIPE	2	2	2					
075	43T49358	BAND, FIX	5	5	5	8	8	8	8	
076	43T19333	HOLDER, SENSOR	11	11	11	15	15	15	15	
077	43T01310	MARK, TOSHIBA	1	1	1	1	1	1	1	
078	43T63358	HOLDER, NFC	1	1	1	1	1	1	1	
079	43T39351	NUT, FLANGE	1	1	1	1	1	1	1	
080	43T39350	WASHER	1	1	1	1	1	1	1	
081	43T47385	BOLT, COMPRESSOR	6	6	6	6	6	6	6	
082	43T49357	RUBBER, CUSHION	6	6	6	6	6	6	6	
083	43T47333	BONNET, 1/2 IN	1	1	1					
084	43T47332	BONNET, 3/8 IN	1	1	1	1	1	1	1	
085	43T47334	BONNET, 5/8 IN				1	1	1	1	
086	43T49338	PLUG, FUSIBLE	1	1	1	1	1	1	1	
087	43T47374	TUBE, CAPILLARY, ID 0.8	1	1	1	1	1	1	1	
088	43T47375	TUBE, CAPILLARY, ID 1.0	1	1	1	1	1	1	1	
089	43T47376	TUBE, CAPILLARY, ID 1.2	1	1	1	1	1	1	1	
	43T85592 *1									
	43100090	1								
090	43T85599 <sup>*7</sup> 43T85601 <sup>*3</sup>	OWNER'S MANUAL	1	1	1	1	1	1	1	
	43T85602 *4	1								
	43T85603 <sup>*6</sup>									
091										
092	43T47376	MOTOR,BASE	1	1	1	1	1	1	1	

\*1) For HT8(J)P model
\*2) For HT7(J)P model
\*3) For HT8(J)P-ME model
\*4) For HT7P-ME model
\*6) For HT8P-A model
\*7) For T8(J)P-E model

				Q't	y/Set MMY	-	
Ref. No.	Part No.	Description	MAP14A6 HT*(J)P	MAP16A6 HT*(J)P	MAP1806 HT*(J)P	MAP2006 HT*(J)P	MAP2206 HT*(J)P
001	43T20341	FAN, PROPELLER	2	2	2	2	2
002	43T20343	MOTOR, FAN, DC530-620V, 3500L	2	2	2	2	2
003	43T19361	CABINET, AIR OUTLET	2	2	2	2	2
005	43T19353	GUARD, FAN	2	2	2	2	2
006	43T00663	CABINET ASSY, SIDE, LEFT	1	1	1	1	1
007	43T00664	CABINET ASSY, SIDE, RIGHT	1	1	1	1	1
008	43T00665	CABINET, AIR INLET, FRONT	1	1	1	1	1
009	43T00666	CABINET, AIR INLET, BACK	1	1	1	1	1
011	43T00622	CABINET, AIR INLET, BACK	2	2	2	2	2
012	43T00667	CABINET ASSY, FRONT, DOWN	1	1	1	1	1
013	43T00668	CABINET ASSY, BACK, DOWN	1	1	1	1	1
014	43T00669	CABINET ASSY, FRONT, DOWN	1	1	1	1	1
015	43T00618	CABINET ASSY, BACK, DOWN	1	1	1	1	1
016	43T00623	PANEL	1	1	1	1	1
018 <sup>*6</sup>	43T41485	COMPRESSOR, RA641A3TB-20M	2	2	2	2	2
019	43T46393	VALVE, BALL, 25.4	1	1	1	1	1
020	43T46456	VALVE, BALL, SBV-JA6GTC-1	1	1	1	1	1
021	43T46366	VALVE, PACKED, 9.52	1	1	1	1	1
024	43T46445	VALVE, CHECK, UCV-A1506DRQ5	2	2	2	2	2
025	43T46446	VALVE, CHECK, UCV-A1507DR	1	1	1	1	1
027	43T46399	VALVE, CHECK, BCV-603DY	1	1	1	1	1
028	43T46400	VALVE, CHECKED, BCV-302DY	3	3	3	3	3
029	43T46409	JOINT,CHECK	3	3	3	3	3
030	43T46447	VALVE, PMV, PAM-BA2YGTF-1 (φ4.8)	1	1	1	1	1
031	43T46448	VALVE, PMV, UKV-25D100 (φ2.5)	2	2	2	2	2
032	43T46449	COIL, PMV	1	1	1	1	1
033	43T46450	COIL, PMV	1	1	1	1	1
034	43T46451	COIL, PMV	1	1	1	1	1
035	43T46452	VALVE, 4WAY, SHF-35B-67-04	1	1	1	1	1
036	43T46453 <sup>*2,4,7</sup>	COIL, SOLENOID, AC220-240V 50HZ	- 1	1	1	1	1
	43T46457 <sup>*3, 5</sup>	COIL, SOLENOID, AC208-230V 60HZ					
037	43T46454	VALVE, 2WAY, TEV-S1220DQ50	4	4	4	4	4
038	43T46411	VALVE , 2WAY, VPV-603DQ2	1	1	1	1	1
039	43T46412	VALVE, 2WAY, FDF3A06	2	2	2	2	2
042	43T46455 *2,4,7,8	COIL, VALVE, 2WAY, TEV-SMOAJ2170A1	- 4	4	4	4	4
-	43T46458 <sup>*3, 5</sup>	COIL, VALVE, 2WAY, TEV-SMOAQ2247A1					
043	43T46403 <sup>*2,4,7,8</sup>		- 1	1	1	1	1
	43T46404 *3, 5	COIL, SOLENOID, VPV-MOAQ1843A0					
044	43T46405 *2,4,7,8	COIL, VALVE, 2WAY, FQ-G593	- 2	2	2	2	2
	43T46406 <sup>*3, 5</sup>	COIL, VALVE, 2WAY, FQ-D640					
045	43T50357	SENSOR ASSY, LOW PRESSURE	1	1	1	1	1
046	43T50358	SENSOR ASSY, HIGH PRESSURE	1	1	1	1	1
047	43T63359	SWITCH, PRESSURE	2	2	2	2	2
048	43T57303	HEATER, CASE, 29W 240V	2	2	2	2	2
049	43T57304	HEATER, CASE, 55W 240V	1	1	1	1	1
050	43T48314	SEPARATOR	1	1	1	1	1
051	43T48316	TANK, LIQUID	1	1	1	1	1
052	43T48312	ACCUMULATOR	1	1	1	1	1
055	43T43527	CONDENSER ASSY, THREE ROW, LEFT	1	1	1	1	1
056	43T43528	CONDENSER ASSY, THREE ROW, RIGHT	1	1	1	1	1

\*1) There is no lineup for Middle-East and Australia/New Zealand 22HP models. There is no anti-corrosion heavy protention models for 60Hz version of Middle-East.
\*2) For HT8(J)P model
\*3) For HT7(J)P model
\*4) For HT8(J)P-ME model
\*5) For HT7P-ME model
\*6) Due to the service compressor for Brazil is now acquiring the INMETRO certification (No371/328/163/ (402), we don't carry it as a service parts. Thus please contact the sales company when necessary.
\*7) For HT8P-A model

\*7) For HT8P-A model \*8) For T8(J)P-E model

				Q'ty/Set MMY-						
Ref. No.	Part No.	Description	MAP14A6 HT*(J)P	MAP16A6 HT*(J)P	MAP1806 (H)T*(J)P	MAP2006 (H)T*(J)P	MAP2206 (H)T*(J)P			
057	43T47388	STRAINER	5	5	5	5	5			
058	43T47389	STRAINER	1	1	1	1	1			
059	43T47390	STRAINER	1	1	1	1	1			
060	43T47392	STRAINER	1	1	1	1	1			
063	43T47395	STRAINER	1	1	1	1	1			
064	43T47400	STRAINER	1	1	1	1	1			
065	43T49348	RUBBER, SUPPORTER, PIPE	3	3	3	3	3			
066	43T49349	RUBBER, SUPPORTER, PIPE	5	5	5	5	5			
067	43T49350	RUBBER, SUPPORTER, PIPE	3	3	3	3	3			
068	43T49351	RUBBER, SUPPORTER, PIPE	3	3	3	3	3			
069	43T49352	RUBBER, SUPPORTER, PIPE	4	4	4	4	4			
070	43T49353	RUBBER, SUPPORTER, PIPE	3	3	3	3	3			
071	43T49354	RUBBER, SUPPORTER, PIPE	2	2	2	2	2			
072	43T49355	RUBBER, SUPPORTER, PIPE	1	1	1	1	1			
073	43T49347	RUBBER, SUPPORTER, PIPE	3	3	3	3	3			
074	43T49365	RUBBER, SUPPORTER, PIPE	1	1	1	1	1			
075	43T49360	RUBBER, SUPPORTER, PIPE	0	0	0	0	0			
076	43T49358	BAND, FIX	7	7	7	7	7			
077	43T19333	HOLDER, SENSOR	15	15	15	15	15			
078	43T01310	MARK, TOSHIBA	1	1	1	1	1			
079	43T63358	HOLDER, NFC	1	1	1	1	1			
080	43T39351	NUT, FLANGE	2	2	2	2	2			
081	43T39350	WASHER	2	2	2	2	2			
082	43T47385	BOLT, COMPRESSOR	6	6	6	6	6			
083	43T49357	RUBBER, CUSHION	6	6	6	6	6			
084	43T47401	BONNET, 3/4 IN	1	1	1	1	1			
085	43T47332	BONNET, 3/8 IN	1	1	1	1	1			
087	43T49338	PLUG, FUSIBLE	1	1	1	1	1			
088	43T47374	TUBE, CAPILLARY, ID 0.8	1	1	1	1	1			
089	43T47375	TUBE, CAPILLARY, ID 1.0	1	1	1	1	1			
090	43T47376	TUBE, CAPILLARY, ID 1.2	1	1	1	1	1			
	43T85592 *2									
	43T85593 *3									
091	43T85599 *8	OWNER'S MANUAL	4	4	4		4			
	43T85601 *4		1	1	1	1	1			
	43T85602 *5	]								
	43T85603 *7									
092	43T00700	MOTOR,BASE	2	2	2	2	2			

\*1) There is no lineup for Middle-East and Australia/New Zealand 22HP models. There is no anti-corrosion heavy protention models for 60Hz version of Middle-East.

- \*2) For HT8(J)P model
- \*3) For HT7(J)P model
- \*4) For HT8(J)P-ME model
- \*5) For HT7P-ME model
- \*7) For HT8P-A model
- \*8) For T8(J)P-E model

# For HT8(J)P-E, HT8(J)P-TR model

					ty/Set MM		
Ref. No.	Part No.	Description		MAP1006			
			HT8(J)P	HT8(J)P	HT8(J)P	HT8(J)P	HT8(J)P
001	43T20341	FAN, PROPELLER	1	1	1	1	1
002	43T20342	MOTOR, FAN, DC530-620V, 2300L	1	1	1	1	1
003	43T19354	CABINET, AIR OUTLET	1	1	1	1	1
004	43T19355	CABINET, SIDE, UP				2	2
005	43T19359	GUARD, FAN	1	1	1	1	1
006	43T00613	CABINET ASSY, SIDE, LEFT	1	1	1	1	1
007	43T00614	CABINET ASSY, SIDE, RIGHT	1	1	1	1	1
800	43T00624	CABINET, AIR INLET, FRONT	1	1	1		
009	43T00620	CABINET, AIR INLET, BACK	1	1	1		
010	43T00625	CABINET, AIR INLET, FRONT				1	1
011	43T00622	CABINET, AIR INLET, BACK				1	1
012	43T00615	CABINET ASSY, FRONT, DOWN	1	1	1		
013	43T00616	CABINET ASSY, BACK, DOWN	1	1	1		
014	43T00617	CABINET ASSY, FRONT, DOWN				1	1
015	43T00618	CABINET ASSY, BACK, DOWN				1	1
016	43T00623	PANEL	1	1	1	1	1
017	43T41458	COMPRESSOR, RA421A3TB-20MD	2	2	2		
017	43T41485	COMPRESSOR, RA641A3TB-20M			-	2	2
010	43T46393	VALVE, BALL, 25.4	1	1	1	1	1
019	43T46381	VALVE, BALL, 23.4 VALVE, BALL, SBV-JA5GTC-1			· ·	1	1
020	43T46366	VALVE, PACKED, 9.52	1	1	1	1	1
021	43T46374	VALVE, PACKED, 12.7	1	1	1	1	I
022	43T46444	VALVE, CHECK, UCV-A1505DRQ5	1	1	1	2	2
023	43T46445	VALVE, CHECK, UCV-A1505DRQ5	1	1	I	1	<u> </u>
024	43140445	VALVE, CHECK, UCV-A1506DRQ5				1	1
	40740000			<u> </u>	2		
026	43T46398	VALVE, CHECKED, BCV-804DY	2	2	2	4	4
027	43T46399	VALVE, CHECK, BCV-603DY	1	1	1	1	1
028	43T46400	VALVE, CHECKED, BCV-302DY	4	4	4	3	3
029	43T46409	JOINT, CHECK	3	3	3	3	3
030	43T46447	VALVE, PMV, PAM-BA2YGTF-1 (φ4.8)	1	1	1	1	1
031	43T46448	VALVE, PMV, UKV-25D100 (φ2.5)	1	1	1	2	2
032	43T46449	COIL, PMV	1	1	1	1	1
033	43T46450	COIL, PMV				1	1
034	43T46451	COIL, PMV	1	1	1	1	1
035	43T46452	VALVE, 4WAY, SHF-35B-67-04	1	1	1	1	1
036	43T46453 <sup>*1</sup>	COIL, SOLENOID, AC220V-240 50HZ	1	1	1	1	1
037	43T46454	VALVE, 2WAY, TEV-S1220DQ50	4	4	4	4	4
038	43T46411	VALVE , 2WAY, VPV-603DQ2	1	1	1	1	1
039	43T46412	VALVE, 2WAY, FDF3A06	3	3	3	2	2
040	43T46459	VALVE, 2WAY, FDF6A42	1	1	1	1	1
041	43T46488	VALVE, 2WAY, VPV				1	1
042	43T46455	COIL, VALVE, 2WAY, TEV-SMOAJ2170A1	4	4	4	4	4
043	43T46403	COIL, SOLENOID, VPV-MOAJ510B0	1	1	1	1	1
044	43T46405	COIL, VALVE, 2WAY, FQ-G593	4	4	4	3	3
045	43T50357	SENSOR ASSY, LOW PRESSURE	1	1	1	1	1
046	43T50358	SENSOR ASSY, HIGH PRESSURE	1	1	1	1	1
047	43T63359	SWITCH, PRESSURE	2	2	2	2	2
048	43T57303	HEATER, CASE, 29W 240V	2	2	2	2	2
049	43T57304	HEATER, CASE, 55W 240V	1	1	1	1	1
050	43T48314	SEPARATOR	1	1	1	1	1
050	43T48315	TANK, LIQUID	1	1	1	1	1
052	43T48313	ACCUMULATOR	1	1	1	1	1
052	43T43523	CONDENSER ASSY, TWO ROW, LEFT	1	1	1		1
053			1	1	1		
	43T43524	CONDENSER ASSY, TWO ROW, RIGHT		1		1	1
055	43T43525	CONDENSER ASSY, THREE ROW, LEFT				1	1
056	43T43526	CONDENSER ASSY, THREE ROW, RIGHT		<u> </u>		1	1

				Q	ty/Set MM	Y-	
Ref. No.	Part No.	Description				MAP1406	
			HT8(J)P	HT8(J)P	HT8(J)P	HT8(J)P	HT8(J)P
057	43T47388	STRAINER	5	5	5	5	5
058	43T47389	STRAINER	1	1	1	1	1
059	43T47390	STRAINER	2	2	2	1	1
060	43T47392	STRAINER				2	2
061							
062	43T47394	STRAINER	1	1	1		
063	43T47395	STRAINER				1	1
064	43T49348	RUBBER, SUPPORTER, PIPE	1	1	1	2	2
065	43T49349	RUBBER, SUPPORTER, PIPE	1	1	1	6	6
066		RUBBER, SUPPORTER, PIPE	3	3	3	1	1
067	43T49351	RUBBER, SUPPORTER, PIPE	2	2	2	5	5
068	43T49352	RUBBER, SUPPORTER, PIPE	1	1	1	3	3
069	43T49353	RUBBER, SUPPORTER, PIPE	1	1	1	3	3
070	43T49354	RUBBER, SUPPORTER, PIPE	2	2	2	2	2
071	43T49355	RUBBER, SUPPORTER, PIPE	1	1	1	2	2
072	43T49347	RUBBER, SUPPORTER, PIPE	4	4	4	4	4
073	43T49365	RUBBER, SUPPORTER, PIPE				1	1
074	43T49360	RUBBER, SUPPORTER, PIPE	2	2	2		
075	43T49358	BAND, FIX	5	5	5	8	8
076	43T19333	HOLDER, SENSOR	11	11	11	15	15
077	43T01310	MARK, TOSHIBA	1	1	1	1	1
078	43T63358	HOLDER, NFC	1	1	1	1	1
079	43T39351	NUT, FLANGE	1	1	1	1	1
080	43T39350	WASHER	1	1	1	1	1
081	43T47385	BOLT, COMPRESSOR	6	6	6	6	6
082	43T49357	RUBBER, CUSHION	6	6	6	6	6
083	43T47333	BONNET, 1/2 IN	1	1	1		
084	43T47332	BONNET, 3/8 IN	1	1	1	1	1
085	43T47334	BONNET, 5/8 IN				1	1
086	43T49338	PLUG, FUSIBLE	1	1	1	1	1
087	43T47374	TUBE, CAPILLARY, ID 0.8	1	1	1	1	1
088	43T47375	TUBE, CAPILLARY, ID 1.0	1	1	1	1	1
089	43T47376	TUBE, CAPILLARY, ID 1.2	1	1	1	1	1
	43T85599 <sup>*1</sup>						
090	43T85600 *2	OWNER'S MANUAL	1	1	1	1	1
091	10100000						
092	43T00700	MOTOR,BASE	1	1	1	1	1
093	43T46490	COIL, VALVE, 2WAY				1	1

\*1) For HT8(J)P-E model \*2) For HT8(J)P-TR model

				Q'ty/Set MMY	_
Ref. No.	Part No.	Description	MAP1806	MAP2006	MAP2206
			HT8(J)P	HT8(J)P	HT8(J)P
001	43T20341	FAN, PROPELLER	2	2	2
002		MOTOR, FAN, DC530-620V, 3500L	2	2	2
002	43T19361	CABINET, AIR OUTLET	2	2	2
003	43113301		2	2	2
004	43T19359	GUARD, FAN	2	2	2
				1	
006		CABINET ASSY, SIDE, LEFT	1		1
007	43T00664	CABINET ASSY, SIDE, RIGHT	1	1	1
008	43T00665	CABINET, AIR INLET, FRONT	1	1	1
009	43T00666	CABINET, AIR INLET, BACK	1	1	1
010					
011	43T00622	CABINET, AIR INLET, BACK	2	2	2
012	43T00667	CABINET ASSY, FRONT, DOWN	1	1	1
013	43T00668	CABINET ASSY, BACK, DOWN	1	1	1
014	43T00669	CABINET ASSY, FRONT, DOWN	1	1	1
015	43T00618	CABINET ASSY, BACK, DOWN	1	1	1
016	43T00623	PANEL	1	1	1
017					
018	43T41485	COMPRESSOR, RA641A3TB-20M	2	2	2
019	43T46393	VALVE, BALL, 25.4	1	1	1
010	43T46456	VALVE, BALL, SBV-JA6GTC-1	1	1	1
020	43T46366	VALVE, PACKED, 9.52	1	1	1
021	43140300	VALVE, FACILED, 9.52	1	I	1
022					
	40740445			0	0
024		VALVE, CHECK, UCV-A1506DRQ5	2	2	2
025	43T46446	VALVE, CHECK, UCV-A1507DR	1	1	1
026				_	
027	43T46399	VALVE, CHECK, BCV-603DY	1	1	1
028		VALVE, CHECKED, BCV-302DY	3	3	3
029	43T46409	J0INT,CHECK	3	3	3
030	43T46447	VALVE, PMV, PAM-BA2YGTF-1 (φ4.8)	1	1	1
031	43T46448	VALVE, PMV, UKV-25D100 (φ2.5)	2	2	2
032	43T46449	COIL, PMV	1	1	1
033	43T46450	COIL, PMV	1	1	1
034	43T46451	COIL, PMV	1	1	1
035	43T46452	VALVE, 4WAY, SHF-35B-67-04	1	1	1
036	43T46453 *2		1	1	1
037	43T46454	VALVE, 2WAY, TEV-S1220DQ50	4	4	4
038	43T46411	VALVE, 2WAY, VPV-603DQ2	1 2	1 2	1 2
039	43T46412	VALVE, 2WAY, FDF3A06			
040	43T46459	VALVE, 2WAY, FDF6A42	1	1	1
041	43T46488	VALVE, 2WAY, VPV	1	1	1
042	43T46455	COIL, VALVE, 2WAY, TEV-SMOAJ2170A1	4	4	4
043	43T46403	COIL, SOLENOID, VPV-MOAJ510B0	1	1	1
044	43T46405	COIL, VALVE, 2WAY, FQ-G593	3	3	3
045	43T50357	SENSOR ASSY, LOW PRESSURE	1	1	1
046	43T50358	SENSOR ASSY, HIGH PRESSURE	1	1	1
047	43T63359	SWITCH, PRESSURE	2	2	2
048	43T57303	HEATER, CASE, 29W 240V	2	2	2
049		HEATER, CASE, 55W 240V	1	1	1
050	43T48314	SEPARATOR	1	1	1
051		TANK, LIQUID	1	1	1
052	43T48312	ACCUMULATOR	1	1	1
053	40140012				1
053			+		
	12712507		1	1	1
055	43T43527	CONDENSER ASSY, THREE ROW, LEFT	1	1	1
056	43T43528	CONDENSER ASSY, THREE ROW, RIGHT	1	1	1

				Q'ty/Set MMY	-
Ref. No.	Part No.	Description	MAP1806	MAP2006	MAP2206
			HT8(J)P	HT8(J)P	HT8(J)P
057	43T47388	STRAINER	5	5	5
058	43T47389	STRAINER	1	1	1
059	43T47390	STRAINER	1	1	1
060	43T47392	STRAINER	1	1	1
061					
062					
063	43T47395	STRAINER	1	1	1
064	43T47400	STRAINER	1	1	1
065	43T49348	RUBBER, SUPPORTER, PIPE	3	3	3
066	43T49349	RUBBER, SUPPORTER, PIPE	5	5	5
067	43T49350	RUBBER, SUPPORTER, PIPE	3	3	3
068	43T49351	RUBBER, SUPPORTER, PIPE	3	3	3
069	43T49352	RUBBER, SUPPORTER, PIPE	4	4	4
070	43T49353	RUBBER, SUPPORTER, PIPE	3	3	3
071	43T49354	RUBBER, SUPPORTER, PIPE	2	2	2
072	43T49355	RUBBER, SUPPORTER, PIPE	1	1	1
073	43T49347	RUBBER, SUPPORTER, PIPE	3	3	3
074	43T49365	RUBBER, SUPPORTER, PIPE	1	1	1
075	43T49360	RUBBER, SUPPORTER, PIPE	0	0	0
076	43T49358	BAND, FIX	7	7	7
077	43T19333	HOLDER, SENSOR	15	15	15
078	43T01310	MARK, TOSHIBA	1	1	1
079	43T63358	HOLDER, NFC	1	1	1
080	43T39351	NUT, FLANGE	2	2	2
081	43T39350	WASHER	2	2	2
082	43T47385	BOLT, COMPRESSOR	6	6	6
083	43T49357	RUBBER, CUSHION	6	6	6
084	43T47401	BONNET, 3/4 IN	1	1	1
085	43T47332	BONNET, 3/8 IN	1	1	1
086					
087	43T49338	PLUG, FUSIBLE	1	1	1
088	43T47374	TUBE, CAPILLARY, ID 0.8	1	1	1
089	43T47375	TUBE, CAPILLARY, ID 1.0	1	1	1
090	43T47376	TUBE, CAPILLARY, ID 1.2	1	1	1
00.4	43T85599 *1				
091	43T85600 *2	OWNER'S MANUAL	1	1	1
092	43T00700	MOTOR,BASE	2	2	2
093	43T46490	COIL, VALVE, 2WAY	1	1	1

\*1) For HT8(J)P-E model \*2) For HT8(J)P-TR model

### For T8(J)P, T7(J)P, T8P-SG, T8(J)P-ID, T8(J)P-T model

				Q'ty/Se	et MMY-	
Ref. No.	Part No.	Description	MAP0806	MAP1006	MAP1206	MAP14B6
			T∗(J)P	T*(J)P	T∗(J)P	T∗(J)P
001	43T20341	FAN, PROPELLER	1	1	1	1
002	43T20342	MOTOR, FAN, DC530-620V, 2300L	1	1	1	1
003	43T19354	CABINET, AIR OUTLET	1	1	1	1
005	43T19353	GUARD, FAN	1	1	1	1
006	43T00613	CABINET ASSY, SIDE, LEFT	1	1	1	1
007	43T00614	CABINET ASSY, SIDE, RIGHT	1	1	1	1
008	43T00624	CABINET, AIR INLET, FRONT	1	1	1	1
009	43T00620	CABINET, AIR INLET, BACK	1	1	1	1
012	43T00615	CABINET ASSY, FRONT, DOWN	1	1	1	1
013	43T00616	CABINET ASSY, BACK, DOWN	1	1	1	1
016	43T00623	PANEL	1	1	1	1
017	43T41458	C0MPRESSOR, RA421A3TB-20MD	2	2	2	2
019	43T46393	VALVE, BALL, 25.4	1	1	1	1
021	43T46366	VALVE, PACKED, 9.52	1	1	1	1
022	43T46374	VALVE, PACKED, 12.7	1	1	1	1
023	43T46444	VALVE, CHECK, UCV-A1505DRQ5	1	1	1	1
026	43T46398	VALVE, CHECKED, BCV-804DY	2	2	2	2
027	43T46399	VALVE, CHECK, BCV-603DY	1	1	1	1
028	43T46400	VALVE, CHECKED, BCV-302DY	4	4	4	4
029	43T46409	J0INT,CHECK	3	3	3	3
030	43T46447	VALVE, PMV, PAM-BA2YGTF-1 (φ4.8)	1	1	1	1
031	43T46448	VALVE, PMV, UKV-25D100 (φ2.5)	1	1	1	1
032	43T46449	COIL, PMV	1	1	1	1
033	43T46450	COIL, PMV				
034	43T46451	COIL, PMV	1	1	1	1
037	43T46454	VALVE, 2WAY, TEV-S1220DQ50	4	4	4	4
038	43T46411	VALVE , 2WAY, VPV-603DQ2	1	1	1	1
039	43T46412	VALVE, 2WAY, FDF3A06	2	2	2	2
042	43T46455 *1,3,4,5	COIL, VALVE, 2WAY, TEV-SMOAJ2170A1	4	4	4	4
012	43T46458 *2	COIL, VALVE, 2WAY, TEV-SMOAQ2247A1	4	4	4	4
043	43T46403 *1,3,4,5	COIL, SOLENOID, VPV-MOAJ510B0	1	1	1	1
0.10	43T46404 *2	COIL, SOLENOID, VPV-MOAQ1843A0	1	1	1	1
044	43T46405 *1,3,4,5	COIL, VALVE, 2WAY, FQ-G593	2	2	2	2
044	43T46406 <sup>*2</sup>	COIL, VALVE, 2WAY, FQ-D640	2	2	2	2
045	43T50357	SENSOR ASSY, LOW PRESSURE	1	1	1	1
046	43T50358	SENSOR ASSY, HIGH PRESSURE	1	1	1	1
047	43T63359	SWITCH, PRESSURE	2	2	2	2
048	43T57303	HEATER, CASE, 29W 240V	2	2	2	2
049	43T57304	HEATER, CASE, 55W 240V	1	1	1	1
050	43T48314	SEPARATOR	1	1	1	1
051	43T48315	TANK, LIQUID	1	1	1	1
052	43T48313	ACCUMULATOR	1	1	1	1
053	43T43523	CONDENSER ASSY, TWO ROW, LEFT	1	1	1	1
054	43T43524	CONDENSER ASSY, TWO ROW, RIGHT	1	1	1	1

				Q'ty/Se	et MMY-	
Ref. No.	Part No.	Description	MAP0806	MAP1006	MAP1206	MAP14B6
			T∗(J)P	T∗(J)P	T∗(J)P	T∗(J)P
057	43T47388	STRAINER	5	5	5	5
058	43T47389	STRAINER	1	1	1	1
059	43T47390	STRAINER	2	2	2	2
062	43T47394	STRAINER	1	1	1	1
063						
064	43T49348	RUBBER, SUPPORTER, PIPE	2	2	2	2
065	43T49349	RUBBER, SUPPORTER, PIPE	2	2	2	2
066	43T49350	RUBBER, SUPPORTER, PIPE	3	3	3	3
067	43T49351	RUBBER, SUPPORTER, PIPE	2	2	2	2
068	43T49352	RUBBER, SUPPORTER, PIPE	1	1	1	1
069	43T49353	RUBBER, SUPPORTER, PIPE	1	1	1	1
070	43T49354	RUBBER, SUPPORTER, PIPE	2	2	2	2
071	43T49355	RUBBER, SUPPORTER, PIPE	1	1	1	1
072	43T49347	RUBBER, SUPPORTER, PIPE	4	4	4	4
074	43T49360	RUBBER, SUPPORTER, PIPE	2	2	2	2
075	43T49358	BAND, FIX	6	6	6	6
076	43T19333	HOLDER, SENSOR	11	11	11	11
077	43T01310	MARK, TOSHIBA	1	1	1	1
078	43T63358	HOLDER, NFC	1	1	1	1
079	43T39351	NUT, FLANGE	1	1	1	1
080	43T39350	WASHER	1	1	1	1
081	43T47385	BOLT, COMPRESSOR	6	6	6	6
082	43T49357	RUBBER, CUSHION	6	6	6	6
083	43T47333	BONNET, 1/2 IN	1	1	1	1
084	43T47332	BONNET, 3/8 IN	1	1	1	1
086	43T49338	PLUG, FUSIBLE	1	1	1	1
087	43T47374	TUBE, CAPILLARY, ID 0.8	1	1	1	1
088	43T47375	TUBE, CAPILLARY, ID 1.0	1	1	1	1
089	43T47376	TUBE, CAPILLARY, ID 1.2	1	1	1	1
	43T85606 <sup>*1</sup>		1	1	1	1
	43T85607 <sup>*2</sup>		1	1	1	1
090	43T85608 <sup>*3</sup>	OWNER'S MANUAL	1	1	1	1
	43T85609 <sup>*4</sup>	]	1	1	1	1
	43T85610 <sup>*5</sup>	1	1	1	1	1
091						
092	43T00700	MOTOR,BASE	1	1	1	1

			Q	'ty/Set MM	Y-
Ref. No.	Part No.	Description	MAP1406	MAP1606	MAP18B6
			T*(J)P	T*(J)P	T∗(J)P
001	43T20341	FAN, PROPELLER	1	1	1
002	43T20342	MOTOR, FAN, DC530-620V, 2300L	1	1	1
003	43T19354	CABINET, AIR OUTLET	1	1	1
004	43T19355	CABINET, SIDE, UP	2	2	2
005	43T19353	GUARD, FAN	1	1	1
006	43T00613	CABINET ASSY, SIDE, LEFT	1	1	1
007	43T00614	CABINET ASSY, SIDE, RIGHT	1	1	1
010	43T00625	CABINET, AIR INLET, FRONT	1	1	1
011	43T00622	CABINET, AIR INLET, BACK	1	1	1
014	43T00617	CABINET ASSY, FRONT, DOWN	1	1	1
015	43T00618	CABINET ASSY, BACK, DOWN	1	1	1
016	43T00623	PANEL	1	1	1
018	43T41485	C0MPRESSOR, RA641A3TB-20M	2	2	2
019	43T46393	VALVE, BALL, 25.4	1	1	1
020	43T46381	VALVE, BALL, SBV-JA5GTC-1	1	1	1
021	43T46366	VALVE, PACKED, 9.52	1	1	1
023	43T46444	VALVE, CHECK, UCV-A1505DRQ5	2	2	2
024	43T46445	VALVE, CHECK, UCV-A1506DRQ5	1	1	1
027	43T46399	VALVE, CHECK, BCV-603DY	1	1	1
028	43T46400	VALVE, CHECKED, BCV-302DY	3	3	3
029	43T46409	J0INT,CHECK	3	3	3
030	43T46447	VALVE, PMV, PAM-BA2YGTF-1 (φ4.8)	1	1	1
031	43T46448	VALVE, PMV, UKV-25D100 (φ2.5)	2	2	2
032	43T46449	COIL, PMV	1	1	1
033	43T46450	COIL, PMV	1	1	1
034	43T46451	COIL, PMV	1	1	1
037	43T46454	VALVE, 2WAY, TEV-S1220DQ50	4	4	4
038	43T46411	VALVE , 2WAY, VPV-603DQ2	1	1	1
039	43T46412	VALVE, 2WAY, FDF3A06	2	2	2
042		COIL, VALVE, 2WAY, TEV-SMOAJ2170A1	4	4	4
042	43T46458 <sup>*2</sup>	COIL, VALVE, 2WAY, TEV-SMOAQ2247A1	4	4	4
043	43T46403 *1,3,4,5	COIL, SOLENOID, VPV-MOAJ510B0	1	1	1
010	43T46404 <sup>*2</sup>	COIL, SOLENOID, VPV-MOAQ1843A0	1	1	1
044	43T46405 <sup>*1,3,4,5</sup>	COIL, VALVE, 2WAY, FQ-G593	2	2	2
044	43T46406 <sup>*2</sup>	COIL, VALVE, 2WAY, FQ-D640	2	2	2
045	43T50357	SENSOR ASSY, LOW PRESSURE	1	1	1
046	43T50358	SENSOR ASSY, HIGH PRESSURE	1	1	1
047	43T63359	SWITCH, PRESSURE	2	2	2
048	43T57303	HEATER, CASE, 29W 240V	2	2	2
049	43T57304	HEATER, CASE, 55W 240V	1	1	1
050	43T48314	SEPARATOR	1	1	1
051	43T48315	TANK, LIQUID	1	1	1
052	43T48313	ACCUMULATOR	1	1	1
055	43T43525	CONDENSER ASSY, THREE ROW, LEFT	1	1	1

			Q	'ty/Set MM	Y-
Ref. No.	Part No.	Description	MAP1406	MAP1606	MAP18B6
			T∗(J)P	T∗(J)P	T*(J)P
056	43T43526	CONDENSER ASSY, THREE ROW, RIGHT	1	1	1
057	43T47388	STRAINER	5	5	5
058	43T47389	STRAINER	1	1	1
059	43T47390	STRAINER	1	1	1
060	43T47392	STRAINER	2	2	2
063	43T47395	STRAINER	1	1	1
064	43T49348	RUBBER, SUPPORTER, PIPE	2	2	2
065	43T49349	RUBBER, SUPPORTER, PIPE	6	6	6
066	43T49350	RUBBER, SUPPORTER, PIPE	1	1	1
067	43T49351	RUBBER, SUPPORTER, PIPE	5	5	5
068	43T49352	RUBBER, SUPPORTER, PIPE	3	3	3
069	43T49353	RUBBER, SUPPORTER, PIPE	3	3	3
070	43T49354	RUBBER, SUPPORTER, PIPE	2	2	2
071	43T49355	RUBBER, SUPPORTER, PIPE	2	2	2
072	43T49347	RUBBER, SUPPORTER, PIPE	4	4	4
073	43T49365	RUBBER, SUPPORTER, PIPE	1	1	1
075	43T49358	BAND, FIX	8	8	8
076	43T19333	HOLDER, SENSOR	15	15	15
077	43T01310	MARK, TOSHIBA	1	1	1
078	43T63358	HOLDER, NFC	1	1	1
079	43T39351	NUT, FLANGE	1	1	1
080	43T39350	WASHER	1	1	1
081	43T47385	BOLT, COMPRESSOR	6	6	6
082	43T49357	RUBBER, CUSHION	6	6	6
084	43T47332	BONNET, 3/8 IN	1	1	1
085	43T47334	BONNET, 5/8 IN	1	1	1
086	43T49338	PLUG, FUSIBLE	1	1	1
087	43T47374	TUBE, CAPILLARY, ID 0.8	1	1	1
088	43T47375	TUBE, CAPILLARY, ID 1.0	1	1	1
089	43T47376	TUBE, CAPILLARY, ID 1.2	1	1	1
	43T85606 <sup>*1</sup>		1	1	1
	43T85607 <sup>*2</sup>		1	1	1
090	43T85608 <sup>*3</sup>	OWNER'S MANUAL	1	1	1
	43T85609 <sup>*4</sup>	]	1	1	1
	43T85610 <sup>*5</sup>		1	1	1
091					
092	43T00700	MOTOR,BASE	1	1	1

			C	ty/Set MM	Y-
Ref. No.	Part No.	Description	MAP1806	MAP2006	MAP2206
			T*(J)P	T*(J)P	T*(J)P
001	43T20341	FAN, PROPELLER	2	2	2
002	43T20343	MOTOR, FAN, DC530-620V, 3500L	2	2	2
003	43T19361	CABINET, AIR OUTLET	2	2	2
005	43T19353	GUARD, FAN	2	2	2
006	43T00663	CABINET ASSY, SIDE, LEFT	1	1	1
007	43T00664	CABINET ASSY, SIDE, RIGHT	1	1	1
008	43T00665	CABINET, AIR INLET, FRONT	1	1	1
009	43T00666	CABINET, AIR INLET, BACK	1	1	1
011	43T00622	CABINET, AIR INLET, BACK	2	2	2
012	43T00667	CABINET ASSY, FRONT, DOWN	1	1	1
013	43T00668	CABINET ASSY, BACK, DOWN	1	1	1
014	43T00669	CABINET ASSY, FRONT, DOWN	1	1	1
015	43T00618	CABINET ASSY, BACK, DOWN	1	1	1
016	43T00623	PANEL	1	1	1
018	43T41485	COMPRESSOR, RA641A3TB-20M	2	2	2
019	43T46393	VALVE, BALL, 25.4	1	1	1
020	43T46456	VALVE, BALL, SBV-JA6GTC-1	1	1	1
021	43T46366	VALVE, PACKED, 9.52	1	1	1
024	43T46445	VALVE, CHECK, UCV-A1506DRQ5	2	2	2
025	43T46446	VALVE, CHECK, UCV-A1507DR	1	1	1
027	43T46399	VALVE, CHECK, BCV-603DY	1	1	1
028	43T46400	VALVE, CHECKED, BCV-302DY	3	3	3
029	43T46409	J0INT,CHECK	3	3	3
030	43T46447	VALVE, PMV, PAM-BA2YGTF-1 (φ4.8)	1	1	1
031	43T46448	VALVE, PMV, UKV-25D100 (φ2.5)	2	2	2
032	43T46449	COIL, PMV	1	1	1
033	43T46450	COIL, PMV	1	1	1
034	43T46451	COIL, PMV	1	1	1
037	43T46454	VALVE, 2WAY, TEV-S1220DQ50	4	4	4
038	43T46411	VALVE , 2WAY, VPV-603DQ2	1	1	1
039	43T46412	VALVE, 2WAY, FDF3A06	2	2	2
042	43T46455 *1,3,4,5	COIL, VALVE, 2WAY, TEV-SMOAJ2170A1	4	4	4
042	43T46458 <sup>*2</sup>	COIL, VALVE, 2WAY, TEV-SMOAQ2247A1	4	4	4
043	43T46403 *1,3,4,5	COIL, SOLENOID, VPV-MOAJ510B0	1	1	1
043	43T46404 <sup>*2</sup>	COIL, SOLENOID, VPV-MOAQ1843A0	1	1	1
044	43T46405 *1,3,4,5	COIL, VALVE, 2WAY, FQ-G593	2	2	2
044	43T46406 <sup>*2</sup>	COIL, VALVE, 2WAY, FQ-D640	2	2	2
045	43T50357	SENSOR ASSY, LOW PRESSURE	1	1	1
046	43T50358	SENSOR ASSY, HIGH PRESSURE	1	1	1
047	43T63359	SWITCH, PRESSURE	2	2	2
048	43T57303	HEATER, CASE, 29W 240V	2	2	2
049	43T57304	HEATER, CASE, 55W 240V	1	1	1
050	43T48314	SEPARATOR	1	1	1
051	43T48316	TANK, LIQUID	1	1	1
052	43T48312	ACCUMULATOR	1	1	1
055	43T43527	CONDENSER ASSY, THREE ROW, LEFT	1	1	1

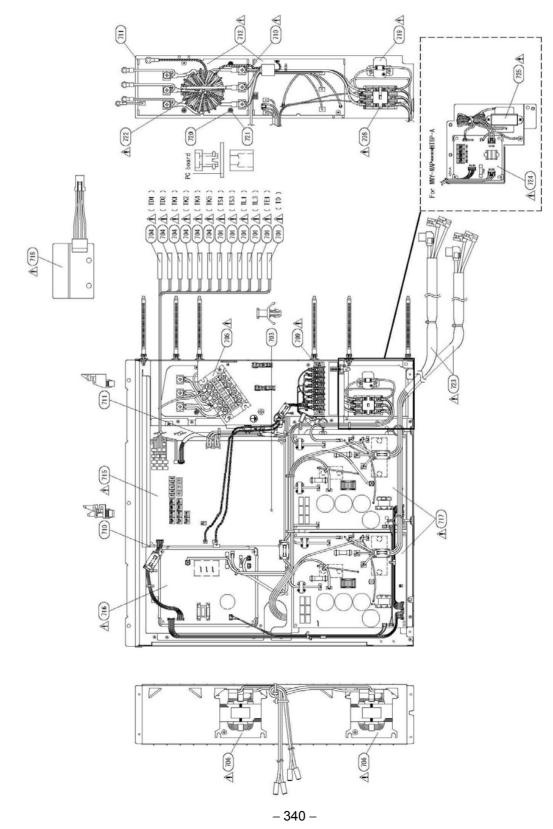
			Q'ty/Set MMY-				
Ref. No.	Part No.	Description	MAP1806 T*(J)P	MAP2006 T*(J)P	MAP2206 T*(J)P		
056	43T43528	CONDENSER ASSY, THREE ROW, RIGHT	1	1	1		
057	43T47388	STRAINER	5	5	5		
058	43T47389	STRAINER	1	1	1		
059	43T47390	STRAINER	1	1	1		
060	43T47392	STRAINER	1	1	1		
063	43T47395	STRAINER	1	1	1		
064	43T47400	STRAINER	1	1	1		
065	43T49348	RUBBER, SUPPORTER, PIPE	3	3	3		
066	43T49349	RUBBER, SUPPORTER, PIPE	5	5	5		
067	43T49350	RUBBER, SUPPORTER, PIPE	3	3	3		
068	43T49351	RUBBER, SUPPORTER, PIPE	3	3	3		
069	43T49352	RUBBER, SUPPORTER, PIPE	4	4	4		
070	43T49353	RUBBER, SUPPORTER, PIPE	3	3	3		
071	43T49354	RUBBER, SUPPORTER, PIPE	2	2	2		
072	43T49355	RUBBER, SUPPORTER, PIPE	1	1	1		
073	43T49347	RUBBER, SUPPORTER, PIPE	3	3	3		
074	43T49365	RUBBER, SUPPORTER, PIPE	1	1	1		
076	43T49358	BAND, FIX	7	7	7		
077	43T19333	HOLDER, SENSOR	15	15	15		
078	43T01310	MARK, TOSHIBA	1	1	1		
079	43T63358	HOLDER, NFC	1	1	1		
080	43T39351	NUT, FLANGE	2	2	2		
081	43T39350	WASHER	2	2	2		
082	43T47385	BOLT, COMPRESSOR	6	6	6		
083	43T49357	RUBBER, CUSHION	6	6	6		
084	43T47401	BONNET, 3/4 IN	1	1	1		
085	43T47332	BONNET, 3/8 IN	1	1	1		
087	43T49338	PLUG, FUSIBLE	1	1	1		
088	43T47374	TUBE, CAPILLARY, ID 0.8	1	1	1		
089	43T47375	TUBE, CAPILLARY, ID 1.0	1	1	1		
090	43T47376	TUBE, CAPILLARY, ID 1.2	1	1	1		
	43T85606 <sup>*1</sup>		1	1	1		
	43T85607 *2	]	1	1	1		
091	43T85608 *3	OWNER'S MANUAL	1	1	1		
	43T85609 <sup>*4</sup>	1	1	1	1		
	43T85610 <sup>*5</sup>	1	1	1	1		
092	43T00700	MOTOR,BASE	2	2	2		

				Q'ty / S	et MMY-	
Ref. No.	Part No.	Description	MAP1606 HT8P-C	MAP1806 HT8P-C	MAP2006 HT8P-C	MAP220 HT8P-C
001	43T20341	FAN, PROPELLER	1	2	2	2
002	43T20342	MOTOR, FAN, DC530-620V, 2300L	1			
002	43T20343	MOTOR, FAN, DC530-620V, 3500L		2	2	2
003	43T19354	CABINET, AIR OUTLET	1			
003	43T19361	CABINET, AIR OUTLET		2	2	2
004	43T19355	CABINET, SIDE, UP	2			
005	43T19353	GUARD, FAN	1	2	2	2
006	43T00613	CABINET ASSY, SIDE, LEFT	1			
006	43T00663	CABINET ASSY, SIDE, LEFT		1	1	1
007	43T00614	CABINET ASSY, SIDE, RIGHT	1			
007	43T00664	CABINET ASSY, SIDE, RIGHT		1	1	1
800	43T00665	CABINET, AIR INLET, FRONT		1	1	1
009	43T00666	CABINET, AIR INLET, BACK		1	1	1
010	43T00625	CABINET, AIR INLET, FRONT	1			
011	43T00622	CABINET, AIR INLET, BACK	1	2	2	2
012	43T00667	CABINET ASSY, FRONT, DOWN		1	1	1
013	43T00668	CABINET ASSY, BACK, DOWN		1	1	1
014	43T00617	CABINET ASSY, FRONT, DOWN	1			
014	43T00669	CABINET ASSY, FRONT, DOWN		1	1	1
015	43T00618	CABINET ASSY, BACK, DOWN	1	1	1	1
016	43T00623	PANEL	1	1	1	1
017						
018	43T41485	C0MPRESSOR, RA641A3TB-20M	2	2	2	2
019	43T46393	VALVE, BALL, 25.4	1	1	1	1
020	43T46381	VALVE, BALL, SBV-JA5GTC-1	1			
020	43T46456	VALVE, BALL, SBV-JA6GTC-1		1	1	1
021	43T46366	VALVE, PACKED, 9.52	1	1	1	1
022		VALVE, LAORED, 3.32		-	-	
023	43T46444	VALVE, CHECK, UCV-A1505DRQ5	2			
024	43T46445	VALVE, CHECK, UCV-A1506DRQ5	1	2	2	2
025	43T46446	VALVE, CHECK, UCV-A1507DR		1	1	1
026	10110110					
027	43T46399	VALVE, CHECK, BCV-603DY	1	1	1	1
028	43T46400	VALVE, CHECKED, BCV-302DY	3	3	3	3
029	43T46409	JOINT,CHECK	3	3	3	3
030	43T46447	VALVE, PMV, PAM-BA2YGTF-1 (φ4.8)	1	1	1	1
031	43T46448	VALVE, PMV, PAM-BA2YGTF-1 (04.8) VALVE, PMV, UKV-25D100 (02.5)	2	2	2	2
032	43T46449		1	1	1	1
032	43T46450		1	1	1	1
034			1		1	1
034	43T46451 43T46452	COIL, PMV		1		1
		VALVE, 4WAY, SHF-35B-67-04	1		1	
036	43T46453	COIL, SOLENOID, AC220V-240 50HZ	1	1	1	1
037	43T46454	VALVE, 2WAY, TEV-S1220DQ50	4	4	4	4
038	43T46411	VALVE , 2WAY, VPV-603DQ2	1	1	1	1
039	43T46412	VALVE, 2WAY, FDF3A06	2	2	2	2
040						
041	40740					<u> </u>
042	43T46455	COIL, VALVE, 2WAY, TEV-SMOAJ2170A1	4	4	4	4
043	43T46403	COIL, SOLENOID, VPV-MOAJ510B0	1	1	1	1
044	43T46405	COIL, VALVE, 2WAY, FQ-G593	2	2	2	2
045	43T50357	SENSOR ASSY, LOW PRESSURE	1	1	1	1
046	43T50358	SENSOR ASSY, HIGH PRESSURE	1	1	1	1
047	43T63359	SWITCH, PRESSURE	2	2	2	2
048	43T57303	HEATER, CASE, 29W 240V	2	2	2	2
049	43T57304	HEATER, CASE, 55W 240V	1	1	1	1
050	43T48314	SEPARATOR	1	1	1	1
051	43T48315	TANK, LIQUID	1			
051	43T48316	TANK, LIQUID		1	1	1
052	43T48313	ACCUMULATOR	1			
052	43T48312	ACCUMULATOR		1	1	1
053						
054						
055	43T43525	CONDENSER ASSY, THREE ROW, LEFT	1			

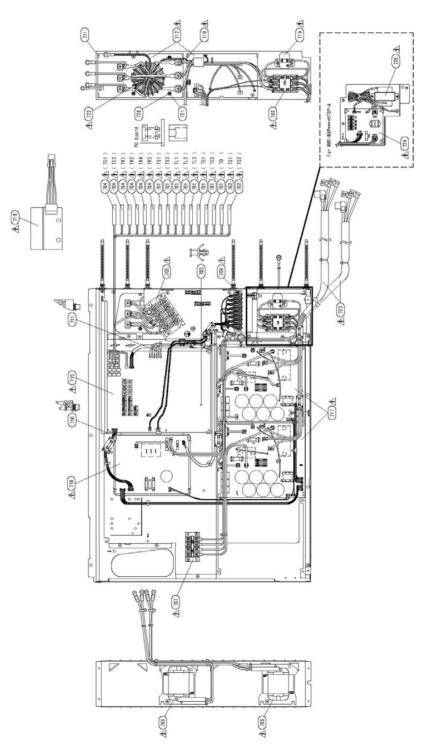
				Q'ty / Set MMY-				
Ref. No.	Part No.	Description	MAP1606 HT8P-C	MAP1806 HT8P-C	MAP2006 HT8P-C	MAP2206 HT8P-C		
056	43T43526	CONDENSER ASSY, THREE ROW, RIGHT	1					
056	43T43528	CONDENSER ASSY, THREE ROW, RIGHT		1	1	1		
057	43T47388	STRAINER	5	5	5	5		
058	43T47389	STRAINER	1	1	1	1		
059	43T47390	STRAINER	1	1	1	1		
060	43T47392	STRAINER	2	1	1	1		
061								
062								
063	43T47395	STRAINER	1	1	1	1		
064	43T47400	STRAINER		1	1	1		
064	43T49348	RUBBER, SUPPORTER, PIPE	2					
065	43T49348	RUBBER, SUPPORTER, PIPE		3	3	3		
065	43T49349	RUBBER, SUPPORTER, PIPE	6	_				
066	43T49349	RUBBER, SUPPORTER, PIPE		5	5	5		
066	43T49350	RUBBER, SUPPORTER, PIPE	1	_				
067	43T49350	RUBBER, SUPPORTER, PIPE		3	3	3		
067	43T49351	RUBBER, SUPPORTER, PIPE	5	-				
068	43T49351		-	3	3	3		
068	43T49352		3					
069	43T49352	RUBBER, SUPPORTER, PIPE		4	4	4		
069	43T49353	RUBBER, SUPPORTER, PIPE	3	-				
070	43T49353	RUBBER, SUPPORTER, PIPE		3	3	3		
070	43T49354	RUBBER, SUPPORTER, PIPE	2	-				
071	43T49354	RUBBER, SUPPORTER, PIPE		2	2	2		
071	43T49355	RUBBER, SUPPORTER, PIPE	2					
072	43T49355	RUBBER, SUPPORTER, PIPE		1	1	1		
072	43T49347	RUBBER, SUPPORTER, PIPE	4					
073	43T49347	RUBBER, SUPPORTER, PIPE		3	3	3		
073	43T49365	RUBBER, SUPPORTER, PIPE	1					
074	43T49365	RUBBER, SUPPORTER, PIPE		1	1	1		
075	43T49358	BAND, FIX	8	_	_			
076	43T49358	BAND, FIX		7	7	7		
076	43T19333	HOLDER, SENSOR	15	45	45	45		
077	43T19333	HOLDER, SENSOR		15	15	15		
077	43T01310	MARK, TOSHIBA	1					
078	43T01310	MARK, TOSHIBA		1	1	1		
078	43T63358	HOLDER, NFC	1					
079	43T63358	HOLDER, NFC		1	1	1		
079	43T39351	NUT, FLANGE	1	2	2	2		
080	43T39351	NUT, FLANGE		2	2	2		
080	43T39350	WASHER	1	0	0	0		
081	43T39350	WASHER		2	2	2		
081	43T47385	BOLT, COMPRESSOR	6		<u>^</u>			
082	43T47385	BOLT, COMPRESSOR	^	6	6	6		
082	43T49357	RUBBER, CUSHION	6		<u>^</u>			
083	43T49357	RUBBER, CUSHION		6	6	6		
084	43T47332	BONNET, 3/8 IN	1	4	4			
084	43T47401	BONNET, 3/4 IN		1	1	1		
085	43T47332	BONNET, 3/8 IN		1	1	1		
085	43T47334	BONNET, 5/8 IN	1					
086	43T49338		1	4	4	4		
087	43T49338		A	1	1	1		
087	43T47374	TUBE, CAPILLARY, ID 0.8	1	4	4	4		
088	43T47374	TUBE, CAPILLARY, ID 0.8	4	1	1	1		
088	43T47375	TUBE, CAPILLARY, ID 1.0	1	4	4			
089	43T47375	TUBE, CAPILLARY, ID 1.0		1	1	1		
089	43T47376	TUBE, CAPILLARY, ID 1.2	1	4	4			
090	43T47376	TUBE, CAPILLARY, ID 1.2		1	1	1		
090 091	43T85631	OWNER'S MANUAL	1	4	4			
	43T85631	OWNER'S MANUAL		1	1	1		

#### **Inverter Assembly**

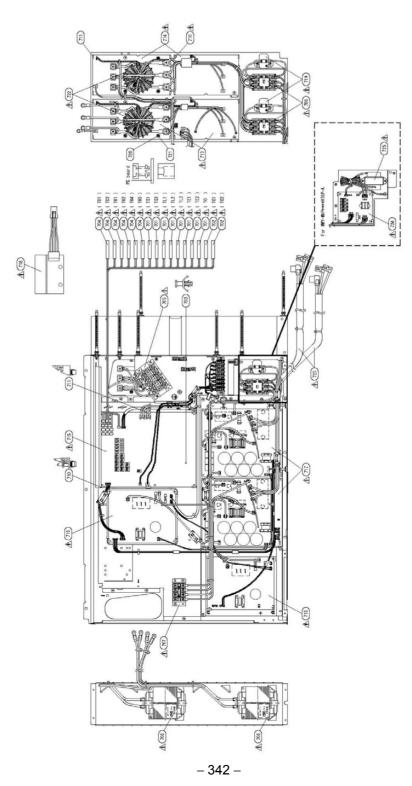
MMY-MAP0806HT8(J)P, MAP1006HT8(J)P, MAP1206HT8(J)P MMY-MAP0806HT7(J)P, MAP1006HT7(J)P, MAP1206HT7(J)P MMY-MAP0806HT8(J)P-ME, MAP1006HT8(J)P-ME, MAP1206HT8(J)P-ME MMY-MAP0806HT8(J)P-E, MAP1006HT8(J)P-E, MAP1206HT8(J)P-E MMY-MAP0806T8(J)P-E, MAP1006HT8(J)P-E, MAP1206HT8(J)P-E MMY-MAP0806HT8(J)P-TR, MAP1006HT8(J)P-TR, MAP1206HT8(J)P-TR MMY-MAP0806HT8P-A, MAP1006HT8P-A, MAP1206HT8P-A MMY-MAP0806T8(J)P, MAP1006T8(J)P, MAP1206T8(J)P, MAP14B6T8(J)P MMY-MAP0806T8(J)P, MAP1006T8(J)P, MAP1206T8(J)P, MAP14B6T8(J)P MMY-MAP0806T8P-SG, MAP1006T8P-SG, MAP1206T7(J)P, MAP14B6T8P-SG MMY-MAP0806T8P-SG, MAP1006T8(J)P-ID, MAP1206T8(J)P-ID, MAP14B6T8(J)P-ID MMY-MAP0806T8(J)P-T, MAP1006T8(J)P-T, MAP1206T8(J)P-T, MAP14B6T8(J)P-ID



**Inverter Assembly** MMY-MAP1406HT8(J)P, MAP1606HT8(J)P MMY-MAP1406HT7(J)P, MAP1606HT7(J)P MMY-MAP10A6HT8(J)P-ME, MAP12A6HT8(J)P-ME MMY-MAP1406HT8(J)P-ME, MAP1606HT8(J)P-ME MMY-MAP10A6HT7P-ME, MAP12A6HT7P-ME MMY-MAP1406HT7P-ME, MAP1606HT7P-ME MMY-MAP1406HT8(J)P-E, MAP1606HT8(J)P-E MMY-MAP1406T8(J)P-E, MAP1606T8(J)P-E MMY-MAP1406HT8(J)P-TR, MAP1606HT8(J)P-TR MMY-MAP1406HT8P-A, MAP1606HT8P-A MMY-MAP1406T8(J)P, MAP1606T8(J)P, MAP1806T8(J)P, MMY-MAP1406T7(J)P, MAP1606T7(J)P, MAP18B6T7(J)P MMY-MAP1406T8P-SG, MAP1606T8P-SG, MAP-18B6T8P-SG MMY-MAP1406T8(J)P-ID, MAP1606T8(J)P-ID, MAP18B6T8(J)P-ID MMY-MAP1406T8(J)P-T, MAP1606T8(J)P-T, MAP18B6T8(J)P-T MMY-MAP1606HT8P-C



**Inverter Assembly** MMY-MAP1806HT8(J)P, MAP2006HT8(J)P, MAP2206HT8(J)P MMY-MAP1806HT7(J)P, MAP2006HT7(J)P, MAP2206HT7(J)P MMY-MAP14A6HT8(J)P-ME, MAP16A6HT8(J)P-ME MMY-MAP1806HT8(J)P-ME, MAP2006HT8(J)P-ME MMY-MAP14A6HT7P-ME, MAP16A6HT7P-ME MMY-MAP1806HT7P-ME, MAP2006HT7P-ME MMY-MAP1806HT8(J)P-E, MAP2006HT8(J)P-E, MAP2206HT8(J)P-E MMY-MAP1806T8(J)P-E, MAP2006T8(J)P-E, MAP2206T8(J)P-E MMY-MAP1806HT8(J)P-TR, MAP2006HT8(J)P-TR, MAP2206HT8(J)P-TR MMY-MAP1806HT8P-A, MAP2006HT8P-A MMY-MAP1806T8(J)P, MAP2006T8(J)P, MAP2206T8(J)P MMY-MAP1806T7(J)P, MAP2006T7(J)P, MAP2206T7(J)P MMY-MAP1806T8P-SG, MAP2006T8P-SG, MAP2206T8P-SG MMY-MAP1806T8(J)P-ID, MAP2006T8(J)P-ID, MAP2206T8(J)P-ID MMY-MAP1806T8(J)P-T, MAP2006T8(J)P-T, MAP2206T8(J)P-T MMY-MAP1806HT8P-C, MAP2006HT8P-C, MAP2206HT8P-C



			Q'ty/Set MMY-						
Ref. No.	Part No.	Description	MAP0806 (H)T*(J)P*	MAP1006 (H)T*(J)P*	MAP1206 (H)T*(J)P*	MAP10A6 HT*(J)P*		MAP1406 (H)T*(J)P*	
701	43T50347	SENSOR ASSY, SERVICE	4	4	4	8	8	8	8
702	43T50356	SERVICE-SENSOR				2	2	2	2
703	43T95303	SUPPORTER, ASSY	3	3	3	3	3	3	3
704	43T50348	SENSOR,TD(F6)	6	6	6	6	6	6	6
705	43T60437	TERMINAL, 4P	1	1	1	1	1	1	1
706	43T58317	REACTOR, CH-79	2	2	2				
706	43T58330	REACTOR, CH-90				2	2	2	2
707	43T60453	TERMINAL, 4P				1	1	1	1
708	43T52320	CONTACTOR, MAGNETIC	1	1	1	1	1	1	1
709	43T60457	TERMINAL, 8P	1	1	1	1	1	1	1
710	43T95301	SUPORT, SPACER	7	7	7	7	7	7	7
711	43T95302	SPACER(EDGE)	10	10	10	10	10	10	10
712	43T6V623	PC BOARD ASSY, NOISE FILTER, MCC-1608	1	1	1	1	1	1	1
715	43T6V831	PC BOARD ASSY, INTERFACE, MCC-1673	1	1	1	1	1	1	1
716	43T6V627	PC BOARD ASSY, FAN-IPDU, MCC-1659	1	1	1	1	1	1	1
717	43T6V628	PC BOARD ASSY, COMP-IPDU, MCC-1669	2	2	2				
717	43T6V629	PC BOARD ASSY, COMP-IPDU, MCC-1669				2	2	2	2
718	43T6V631	PC BOARD ASSY, NFC, MCC-1667	1	1	1	1	1	1	1
719	43T50345	THERMISTOR, PTC	1	1	1	1	1	1	1
720	43T96307	BUSHING	3	3	3	3	3	3	3
721	43T96306	COLLAR	3	3	3	3	3	3	3
722	43T55367	FILTER, LINE	1	1	1	1	1	1	1
723	43T60454	LEAD ASSY, COMPRESSOR	2	2	2				
723	43T60455	LEAD ASSY, COMPRESSOR				2	2	2	2
724	43T6V646	PC BOARD ASSY, DRC, MCC-1653	1Ж	1Ж	1Ж	1Ж	1Ж	1Ж	1Ж
725	43T58323	TRANSFORMER (VT-02 VRK)	1※	1Ж	1Ж	1%	1※	1※	1※

# For HT8(J)P, HT7(J)P, HT8(J)P-ME, HT7P-ME, (H)T8(J)P-E, HT8(J)P-TR, HT8P-A model

₩For MMY-MAP\*\*\*\*HT8P-A

				(	Q'ty/Set MM	(-	
Ref. No.	Part No.	Description	MAP14A6	MAP16A6	MAP1806	MAP2006	MAP2206
			HT*(J)P	HT*(J)P	(H)T*(J)P*	(H)T*(J)P*	(H)T*(J)P*
701	43T50347	SENSOR ASSY, SERVICE	8	8	8	8	8
702	43T50356	SERVICE-SENSOR	2	2	2	2	2
703	43T95303	SUPPORTER, ASSY	3	3	3	3	3
704	43T50348	SENSOR,TD(F6)	6	6	6	6	6
705	43T60437	TERMINAL, 4P	1	1	1	1	1
706	43T58331	REACTOR, CH-65	2	2	2	2	2
707	43T60453	TERMINAL, 4P	1	1	1	1	1
708	43T52320	CONTACTOR, MAGNETIC	2	2	2	2	2
709	43T60457	TERMINAL, 8P	1	1	1	1	1
710	43T95301	SUPORT, SPACER	10	10	10	10	10
711	43T95302	SPACER(EDGE)	18	18	18	18	18
713	43T6V624	PC BOARD ASSY, NOISE FILTER, MCC-1608	1	1	1	1	1
714	43T6V625	PC BOARD ASSY, NOISE FILTER, MCC-1608	1	1	1	1	1
715	43T6V831	PC BOARD ASSY, INTERFACE, MCC-1673	1	1	1	1	1
716	43T6V627	PC BOARD ASSY, FAN-IPDU, MCC-1659	2	2	2	2	2
717	43T6V630	PC BOARD ASSY, COMP-IPDU, MCC-1660	2	2	2	2	2
718	43T6V631	PC BOARD ASSY, NFC, MCC-1667	1	1	1	1	1
719	43T50345	THERMISTOR, PTC	2	2	2	2	2
720	43T96307	BUSHING	6	6	6	6	6
721	43T96306	COLLAR	6	6	6	6	6
722	43T55366	FILTER, LINE	2	2	2	2	2
723	43T60456	LEAD ASSY, COMPRESSOR	2	2	2	2	2
724	43T6V646	PC BOARD ASSY, DRC, MCC-1653	1※	1※	1※	1※	
725	43T58323	TRANSFORMER (VT-02 VRK)	1*	1※	1※	1※	

※For MMY-MAP\*\*\*\*HT8P-A

			Q'ty/Set MMY-					
Ref. No.	Part No.	Description	MAP0806	MAP1006	MAP1206	MAP14B6		
			T*(J)P	T*(J)P	T*(J)P	T*(J)P		
701	43T50347	SENSOR ASSY, SERVICE	4	4	4	4		
703	43T95303	SUPPORTER, ASSY	3	3	3	3		
704	43T50348	SENSOR,TD(F6)	6	6	6	6		
705	43T60437	TERMINAL, 4P	1	1	1	1		
706	43T58317	REACTOR, CH-79	2	2	2	2		
708	43T52320	CONTACTOR, MAGNETIC	1	1	1	1		
709	43T60457	TERMINAL, 8P	1	1	1	1		
710	43T95301	SUPORT, SPACER	7	7	7	7		
711	43T95302	SPACER(EDGE)	10	10	10	10		
712	43T6V623	PC BOARD ASSY, NOISE FILTER, MCC-1608	1	1	1	1		
715	43T6V831	PC BOARD ASSY, INTERFACE, MCC-1673	1	1	1	1		
716	43T6V627	PC BOARD ASSY, FAN IPDU, MCC-1659	1	1	1	1		
717	43T6V628	PC BOARD ASSY, COMP-IPDU, MCC-1669	2	2	2	2		
718	43T6V631	PC BOARD ASSY, NFC, MCC-1667	1	1	1	1		
719	43T50345	THERMISTOR, PTC	1	1	1	1		
720	43T96307	BUSHING	3	3	3	3		
721	43T96306	COLLAR	3	3	3	3		
722	43T55367	FILTER, LINE	1	1	1	1		
723	43T60454	LEAD ASSY, COMPRESSOR	2	2	2	2		

# For T8(J)P, T8P-SG, T8(J)P-ID, T8(J)P-T model

				Q'ty/Set MMY-			
Ref. No.	Part No.	Description	MAP1406	MAP1606	MAP18B6		
			T*(J)P	T∗(J)P	T*(J)P		
701	43T50347	SENSOR ASSY, SERVICE	8	8	8		
703	43T95303	SUPPORTER, ASSY	3	3	3		
704	43T50348	SENSOR,TD(F6)	6	6	6		
705	43T60437	TERMINAL, 4P	1	1	1		
706	43T58330	REACTOR, CH-90	2	2	2		
707	43T60453	TERMINAL, 4P	1	1	1		
708	43T52320	CONTACTOR, MAGNETIC	1	1	1		
709	43T60457	TERMINAL, 8P	1	1	1		
710	43T95301	SUPORT, SPACER	7	7	7		
711	43T95302	SPACER(EDGE)	10	10	10		
712	43T6V623	PC BOARD ASSY, NOISE FILTER, MCC-1608	1	1	1		
715	43T6V831	PC BOARD ASSY, INTERFACE, MCC-1673	1	1	1		
716	43T6V627	PC BOARD ASSY, FAN IPDU, MCC-1659	1	1	1		
717	43T6V629	PC BOARD ASSY, COMP-IPDU, MCC-1669	2	2	2		
718	43T6V631	PC BOARD ASSY, NFC, MCC-1667	1	1	1		
719	43T50345	THERMISTOR, PTC	1	1	1		
720	43T96307	BUSHING	3	3	3		
721	43T96306	COLLAR	3	3	3		
722	43T55367	FILTER, LINE	1	1	1		
723	43T60455	LEAD ASSY, COMPRESSOR	2	2	2		

			Q'ty/Set MMY-				
Ref. No.	Part No.	Description	MAP1806	MAP2006	MAP2206		
			T*(J)P	T*(J)P	T*(J)P		
701	43T50347	SENSOR ASSY, SERVICE	8	8	8		
703	43T95303	SUPPORTER, ASSY	3	3	3		
704	43T50348	SENSOR,TD(F6)	6	6	6		
705	43T60437	TERMINAL, 4P	1	1	1		
706	43T58331	REACTOR, CH-65	2	2	2		
707	43T60453	TERMINAL, 4P	1	1	1		
708	43T52320	CONTACTOR, MAGNETIC	2	2	2		
709	43T60457	TERMINAL, 8P	1	1	1		
710	43T95301	SUPORT, SPACER	10	10	10		
711	43T95302	SPACER(EDGE)	18	18	18		
713	43T6V624	PC BOARD ASSY, NOISE FILTER, MCC-1608	1	1	1		
714	43T6V625	PC BOARD ASSY, NOISE FILTER, MCC-1608	1	1	1		
715	43T6V831	PC BOARD ASSY, INTERFACE, MCC-1673	1	1	1		
716	43T6V627	PC BOARD ASSY, FAN IPDU, MCC-1659	2	2	2		
717	43T6V630	PC BOARD ASSY, COMP-IPDU, MCC-1660	2	2	2		
718	43T6V631	PC BOARD ASSY, NFC, MCC-1667	1	1	1		
719	43T50345	THERMISTOR, PTC	2	2	2		
720	43T96307	BUSHING	6	6	6		
721	43T96306	COLLAR	6	6	6		
722	43T55366	FILTER, LINE	2	2	2		
723	43T60456	LEAD ASSY, COMPRESSOR	2	2	2		

			Q'ty / Set MMY-			
Ref. No.	Part No.	Description	MAP1606 HT8P-C	MAP1806 HT8P-C	MAP2006 HT8P-C	MAP2206 HT8P-C
701	43T50347	SENSOR ASSY, SERVICE	8	8	8	8
702	43T50356	SENSOR ASSY, SERVICE	2	2	2	2
703	43T95303	SUPPORTER, ASSY	3	3	3	3
704	43T50348	SENSOR,TD(F6)	6	6	6	6
705	43T60437	TERMINAL, 4P	1	1	1	1
706	43T58331	REACTOR, CH-65		2	2	2
700	43T58330	REACTOR, CH-90	2			
707	43T60453	TERMINAL, 4P	1	1	1	1
708	43H52001	CONTACTOR, MAGNETIC	1	2	2	2
709	43T60457	TERMINAL, 8P	1	1	1	1
710	43T95301	SUPORT, SPACER	7	10	10	10
711	43T95302	SPACER(EDGE)	10	18	18	18
712	43T6V623	PC BOARD ASSY, NOISE FILTER, MCC-1608	1			
713	43T6V624	PC BOARD ASSY, NOISE FILTER, MCC-1608		1	1	1
714	43T6V625	PC BOARD ASSY, NOISE FILTER, MCC-1608		1	1	1
715	43T6V831	PC BOARD ASSY, INTERFACE, MCC-1673	1	1	1	1
716	43T6V627	PC BOARD ASSY, FAN IPDU, MCC-1659	1	2	2	2
717	43T6V629	PC BOARD ASSY, COMP-IPDU, MCC-1669	2			
717	43T6V630	PC BOARD ASSY, COMP-IPDU, MCC-1660		2	2	2
718	43T6V631	PC BOARD ASSY, NFC, MCC-1667	1	1	1	1
719	43T50345	THERMISTOR, PTC	1	2	2	2
720	43T96307	BUSHING	3	6	6	6
721	43T96306	COLLAR	3	6	6	6
722	43T55367	FILTER, LINE	1			
722	43T55366	FILTER, LINE		2	2	2
723	43T60455	LEAD ASSY, COMPRESSOR	2			
723	43T60456	LEAD ASSY, COMPRESSOR		2	2	2

