DAIKIN

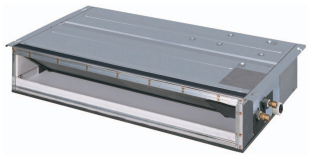
SiBE12 - 522

Service Manual

SUPER MULTi NX

D-Series





[Applied Models]
- **Inverter Multi : Cooling Only**
- **Inverter Multi : Heat Pump**

SUPER MULTI NX
D-Series

●Cooling Only

Indoor Unit

FTKS20D(2)VMW(L)(9)
FTKS25D(2)VMW(L)(9)
FTKS35D(2)VMW(L)(9)
CTKS50D(2)VMW(L)
FTKS20CVMB(9)
FTKS25CVMB(9)(8)
FTKS35CVMB(9)(8)
FTKS50BVMB
FTKS60BVMB
FTKS71BVMB
FDKS25CVMB
FDKS35CVMB
CDKS50CVMB
CDKS60CVMB
FLKS25BVMB
FLKS35BVMB
FLKS50BVMB
FLKS60BVMB
FVKS25BVMB
FVKS35BVMB
FVKS50BVMB

Outdoor Unit

3MKS50DVMB
4MKS58DVMB
4MKS75DVMB
4MKS90DVMB

●Heat Pump

Indoor Unit

FTXS20D(2)VMW(L)(9)
FTXS25D(2)VMW(L)(9)
FTXS35D(2)VMW(L)(9)
CTXS50D(2)VMW(L)
FTXS20CVMB(9)
FTXS25CVMB(9)(8)
FTXS35CVMB(9)(8)
FTXS50BVMB
FTXS60BVMB
FTXS71BVMB
ATXS20DVMB
ATXS25DVMB
ATXS35DVMB
ATXS20CVMB(9)
ATXS25CVMB(9)
ATXS35CVMB(9)
ATXS50DVMB
ATXS50CVMB
FDXS25CVMB
FDXS35CVMB
CDXS50CVMB
CDXS60CVMB
FLXS25BVMB
FLXS35BVMB
FLXS50BVMB
FLXS60BVMB
FVXS25BVMB
FVXS35BVMB
FVXS50BVMB

Outdoor Unit

2MXS52DVMB
3MXS52DVMB
4MXS68DVMB
4MXS80DVMB
2AMX52DVMB
3AMX52CVMB

1. Introduction

1.1 Safety Cautions

Cautions and Warnings

- Be sure to read the following safety cautions before conducting repair work.
- The caution items are classified into "⚠ **Warning**" and "⚠ **Caution**". The "⚠ **Warning**" items are especially important since they can lead to death or serious injury if they are not followed closely. The "⚠ **Caution**" items can also lead to serious accidents under some conditions if they are not followed. Therefore, be sure to observe all the safety caution items described below.
- About the pictograms

△ This symbol indicates an item for which caution must be exercised.
The pictogram shows the item to which attention must be paid.

◯ This symbol indicates a prohibited action.
The prohibited item or action is shown inside or near the symbol.

● This symbol indicates an action that must be taken, or an instruction.
The instruction is shown inside or near the symbol.

- After the repair work is complete, be sure to conduct a test operation to ensure that the equipment operates normally, and explain the cautions for operating the product to the customer.

1.1.1 Caution in Repair

⚠ Warning	
Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for a repair. Working on the equipment that is connected to a power supply can cause an electrical shook. If it is necessary to supply power to the equipment to conduct the repair or inspecting the circuits, do not touch any electrically charged sections of the equipment.	
If the refrigerant gas discharges during the repair work, do not touch the discharging refrigerant gas. The refrigerant gas can cause frostbite.	
When disconnecting the suction or discharge pipe of the compressor at the welded section, release the refrigerant gas completely at a well-ventilated place first. If there is a gas remaining inside the compressor, the refrigerant gas or refrigerating machine oil discharges when the pipe is disconnected, and it can cause injury.	
If the refrigerant gas leaks during the repair work, ventilate the area. The refrigerant gas can generate toxic gases when it contacts flames.	
The step-up capacitor supplies high-voltage electricity to the electrical components of the outdoor unit. Be sure to discharge the capacitor completely before conducting repair work. A charged capacitor can cause an electrical shock.	
Do not start or stop the air conditioner operation by plugging or unplugging the power cable plug. Plugging or unplugging the power cable plug to operate the equipment can cause an electrical shock or fire.	

Caution	
Do not repair the electrical components with wet hands. Working on the equipment with wet hands can cause an electrical shock.	
Do not clean the air conditioner by splashing water. Washing the unit with water can cause an electrical shock.	
Be sure to provide the grounding when repairing the equipment in a humid or wet place, to avoid electrical shocks.	
Be sure to turn off the power switch and unplug the power cable when cleaning the equipment. The internal fan rotates at a high speed, and cause injury.	
Do not tilt the unit when removing it. The water inside the unit can spill and wet the furniture and floor.	
Be sure to check that the refrigerating cycle section has cooled down sufficiently before conducting repair work. Working on the unit when the refrigerating cycle section is hot can cause burns.	
Use the welder in a well-ventilated place. Using the welder in an enclosed room can cause oxygen deficiency.	

1.1.2 Cautions Regarding Products after Repair

Warning	
Be sure to use parts listed in the service parts list of the applicable model and appropriate tools to conduct repair work. Never attempt to modify the equipment. The use of inappropriate parts or tools can cause an electrical shock, excessive heat generation or fire.	
When relocating the equipment, make sure that the new installation site has sufficient strength to withstand the weight of the equipment. If the installation site does not have sufficient strength and if the installation work is not conducted securely, the equipment can fall and cause injury.	
Be sure to install the product correctly by using the provided standard installation frame. Incorrect use of the installation frame and improper installation can cause the equipment to fall, resulting in injury.	For integral units only
Be sure to install the product securely in the installation frame mounted on a window frame. If the unit is not securely mounted, it can fall and cause injury.	For integral units only

Warning	
Be sure to use an exclusive power circuit for the equipment, and follow the technical standards related to the electrical equipment, the internal wiring regulations and the instruction manual for installation when conducting electrical work. Insufficient power circuit capacity and improper electrical work can cause an electrical shock or fire.	
Be sure to use the specified cable to connect between the indoor and outdoor units. Make the connections securely and route the cable properly so that there is no force pulling the cable at the connection terminals. Improper connections can cause excessive heat generation or fire.	
When connecting the cable between the indoor and outdoor units, make sure that the terminal cover does not lift off or dismount because of the cable. If the cover is not mounted properly, the terminal connection section can cause an electrical shock, excessive heat generation or fire.	
Do not damage or modify the power cable. Damaged or modified power cable can cause an electrical shock or fire. Placing heavy items on the power cable, and heating or pulling the power cable can damage the cable.	
Do not mix air or gas other than the specified refrigerant (R410A) in the refrigerant system. If air enters the refrigerating system, an excessively high pressure results, causing equipment damage and injury.	
If the refrigerant gas leaks, be sure to locate the leak and repair it before charging the refrigerant. After charging refrigerant, make sure that there is no refrigerant leak. If the leak cannot be located and the repair work must be stopped, be sure to perform pump-down and close the service valve, to prevent the refrigerant gas from leaking into the room. The refrigerant gas itself is harmless, but it can generate toxic gases when it contacts flames, such as fan and other heaters, stoves and ranges.	
When replacing the coin battery in the remote controller, be sure to disposed of the old battery to prevent children from swallowing it. If a child swallows the coin battery, see a doctor immediately.	

Caution	
Installation of a leakage breaker is necessary in some cases depending on the conditions of the installation site, to prevent electrical shocks.	
Do not install the equipment in a place where there is a possibility of combustible gas leaks. If a combustible gas leaks and remains around the unit, it can cause a fire.	
Be sure to install the packing and seal on the installation frame properly. If the packing and seal are not installed properly, water can enter the room and wet the furniture and floor.	For integral units only

1.1.3 Inspection after Repair

Warning	
Check to make sure that the power cable plug is not dirty or loose, then insert the plug into a power outlet all the way. If the plug has dust or loose connection, it can cause an electrical shock or fire.	
If the power cable and lead wires have scratches or deteriorated, be sure to replace them. Damaged cable and wires can cause an electrical shock, excessive heat generation or fire.	

Warning	
Do not use a joined power cable or extension cable, or share the same power outlet with other electrical appliances, since it can cause an electrical shock, excessive heat generation or fire.	

Caution	
Check to see if the parts and wires are mounted and connected properly, and if the connections at the soldered or crimped terminals are secure. Improper installation and connections can cause excessive heat generation, fire or an electrical shock.	
If the installation platform or frame has corroded, replace it. Corroded installation platform or frame can cause the unit to fall, resulting in injury.	
Check the grounding, and repair it if the equipment is not properly grounded. Improper grounding can cause an electrical shock.	
Be sure to measure the insulation resistance after the repair, and make sure that the resistance is 1 Mohm or higher. Faulty insulation can cause an electrical shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage can cause the water to enter the room and wet the furniture and floor.	

1.1.4 Using Icons

Icons are used to attract the attention of the reader to specific information. The meaning of each icon is described in the table below:

1.1.5 Using Icons List

Icon	Type of Information	Description
Note:	Note	A “note” provides information that is not indispensable, but may nevertheless be valuable to the reader, such as tips and tricks.
Caution	Caution	A “caution” is used when there is danger that the reader, through incorrect manipulation, may damage equipment, loose data, get an unexpected result or has to restart (part of) a procedure.
Warning	Warning	A “warning” is used when there is danger of personal injury.
	Reference	A “reference” guides the reader to other places in this binder or in this manual, where he/she will find additional information on a specific topic.

Part 1
List of Functions

1. List of Functions

1.1 Cooling Only Models

Category	Functions	FTKS20-35D(2)VMW(L)(9)	CTKS50D(2)VMW(L)	FTKS20-35CVMB(9)(8)	Category	Functions	FTKS20-35D(2)VMW(L)(9)	CTKS50D(2)VMW(L)	FTKS20-35CVMB(9)(8)
Basic Function	Inverter (with Inverter Power Control)	○	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic, Virustatic Functions	—	—	—
	Operation Limit for Cooling (°CDB)	—	—	—					
	Operation Limit for Heating (°CWB)	—	—	—		Photocatalytic Deodorizing Filter	—	—	—
	PAM Control	—	—	—		Air Purifying Filter with Photocatalytic Deodorizing Function	—	—	○
Compressor	Oval Scroll Compressor	—	—	—		Titanium Apatite Photocatalytic Air-Purifying Filter	○	○	—
	Swing Compressor	—	—	—					
	Rotary Compressor	—	—	—		Mold Proof Air Filter	○	○	○
	Reluctance DC Motor	—	—	—		Wipe-clean Flat Panel	○	○	○
Comfortable Airflow	Power-Airflow Flap	—	—	—		Washable Grille	—	—	—
	Power-Airflow Dual Flaps	○	○	○		Mold Proof Operation	—	—	—
	Power-Airflow Diffuser	—	—	—		Heating Dry Operation	—	—	—
	Wide-Angle Louvers	○	○	○		Good-Sleep Cooling Operation	—	—	—
	Vertical Auto-Swing (Up and Down)	○	○	○	Timer	24-Hour On/Off Timer	○	○	○
	Horizontal Auto-Swing (Right and Left)	—	—	—		Night Set Mode	○	○	○
	3-D Airflow	—	—	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○	○
	Comfort Airflow Mode	○	○	—		Self-Diagnosis (Digital, LED) Display	○ ★	○ ★	○ ★
	3-Step Airflow (H/P Only)	—	—	—		Wiring Error Check	—	—	—
Comfort Control	Auto Fan Speed	○	○	○		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—	—
	Indoor Unit Silent Operation	○	○	○					
	Night Quiet Mode (Automatic)	—	—	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	—	○
	Outdoor Unit Silent Operation (Manual)	—	—	—					
	Intelligent Eye	○	○	○		Flexible Voltage Correspondence	○	○	○
	Quick Warming Function	—	—	—		High Ceiling Application	—	—	—
	Hot-Start Function	—	—	—		Chargeless	—	—	—
	Automatic Defrosting	—	—	—		Either Side Drain (Right or Left)	○	○	○
Operation	Automatic Operation	—	—	—		Power Selection	—	—	—
	Programme Dry Function	○	○	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○	○
	Fan Only	○	○	○		Remote Control Adaptor (Normal Open-Pulse Contact)(Option)	○	○	○
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—	—					
	Inverter Powerful Operation	○	○	○		Remote Control Adaptor (Normal Open Contact)(Option)	○	○	○
	Priority-Room Setting	—	—	—					
	Cooling / Heating Mode Lock	—	—	—		DIII-NET Compatible (Adaptor)(Option)	○	○	○
	Home Leave Operation	—	—	○	Remote Controller	Wireless	○	○	○
	ECONO Mode	○	○	—		Wired	—	—	—
	Indoor Unit On/Off Switch	○	○	○					
	Signal Reception Indicator	○	○	○					
	Temperature Display	—	—	—					
	Another Room Operation	—	—	—					

Note: ○ : Holding Functions
— : No Functions
★ : Digital Only

Category	Functions	FTKS50-71BVMB	FDKS25·35CVMB	CDKS50·60CVMB	Category	Functions	FTKS50-71BVMB	FDKS25·35CVMB	CDKS50·60CVMB
Basic Function	Inverter (with Inverter Power Control)	○	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	—	—	—
	Operation Limit for Cooling (°CDB)	—	—	—		Photocatalytic Deodorizing Filter	—	—	—
	Operation Limit for Heating (°CWB)	—	—	—		Air Purifying Filter with Photocatalytic Deodorizing Function	○	—	—
	PAM Control	—	—	—		Titanium Apatite Photocatalytic Air-Purifying Filter	—	—	—
Compressor	Oval Scroll Compressor	—	—	—		Mold Proof Air Filter	○	○	○
	Swing Compressor	—	—	—		Wipe-clean Flat Panel	○	—	—
	Rotary Compressor	—	—	—		Washable Grille	—	—	—
	Reluctance DC Motor	—	—	—		Mold Proof Operation	—	—	—
Comfortable Airflow	Power-Airflow Flap	—	—	—		Heating Dry Operation	—	—	—
	Power-Airflow Dual Flaps	○	—	—		Good-Sleep Cooling Operation	—	—	—
	Power-Airflow Diffuser	—	—	—	Timer	24-Hour On/Off Timer	○	○	○
	Wide-Angle Louvers	○	—	—		Night Set Mode	○	○	○
	Vertical Auto-Swing (Up and Down)	○	—	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○	○
	Horizontal Auto-Swing (Right and Left)	○	—	—		Self-Diagnosis (Digital, LED) Display	○ ★	○ ★	○ ★
	3-D Airflow	○	—	—		Wiring-Error Check	—	—	—
	Comfort Airflow Mode	—	—	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—	—
	3-Step Airflow (H/P Only)	—	—	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○	—
Comfort Control	Auto Fan Speed	○	○	○		Flexible Voltage Correspondence	○	○	○
	Indoor Unit Silent Operation	○	○	○		High Ceiling Application	—	—	—
	Night Quiet Mode (Automatic)	—	—	—		Chargeless	—	—	—
	Outdoor Unit Silent Operation (Manual)	—	—	—		Either Side Drain (Right or Left)	○	—	—
	Intelligent Eye	○	—	—		Power-Selection	—	—	—
	Quick Warming Function	—	—	—	Remote Control	5-Rooms Centralized Controller (Option)	○	○	○
	Hot-Start Function	—	—	—		Remote Control Adaptor (Normal Open-Pulse Contact)(Option)	○	○	○
	Automatic Defrosting	—	—	—		Remote Control Adaptor (Normal Open Contact)(Option)	○	○	○
Operation	Automatic Operation	—	—	—		DIII-NET Compatible (Adaptor) (Option)	○	○	○
	Programme Dry Function	○	○	○	Remote Controller	Wireless	○	○	○
	Fan Only	○	○	○		Wired	—	—	—
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—	—					
	Inverter Powerful Operation	○	○	○					
	Priority-Room Setting	—	—	—					
	Cooling / Heating Mode Lock	—	—	—					
	Home Leave Operation	○	○	○					
	ECONO Mode	—	—	—					
	Indoor Unit On/Off Switch	○	○	○					
	Signal Reception Indicator	○	○	○					
	Temperature Display	—	—	—					
	Another Room Operation	—	—	—					

Note: ○ : Holding Functions ★ : Digital Only

— : No Functions

Category	Functions	FLKS25-60BVMB	FVKS25-50BVMB	3MKS50DVMB 4MKS58·75·90DVMB	Category	Functions	FLKS25-60BVMB	FVKS25-50BVMB	3MKS50DVMB 4MKS58·75·90DVMB
Basic Function	Inverter (with Inverter Power Control)	○	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	○	○	—
	Operation Limit for Cooling (°CDB)	—	—	–10 ~ 46		Photocatalytic Deodorizing Filter	○	○	—
	Operation Limit for Heating (°CWB)	—	—	—		Air Purifying Filter with Photocatalytic Deodorizing Function	—	—	—
	PAM Control	—	—	○		Titanium Apatite Photocatalytic Air-Purifying Filter	—	—	—
Compressor	Oval Scroll Compressor	—	—	—		Mold Proof Air Filter	○	○	—
	Swing Compressor	—	—	○		Wipe-clean Flat Panel	—	—	—
	Rotary Compressor	—	—	—		Washable Grille	—	○	—
	Reluctance DC Motor	—	—	○		Mold Proof Operation	—	—	—
Comfortable Airflow	Power-Airflow Flap	—	—	—		Heating Dry Operation	—	—	—
	Power-Airflow Dual Flaps	—	—	—		Good-Sleep Cooling Operation	—	—	—
	Power-Airflow Diffuser	—	—	—	Timer	24-Hour On/Off Timer	○	○	—
	Wide-Angle Louvers	—	○	—		Night Set Mode	○	○	—
	Vertical Auto-Swing (Up and Down)	○	○	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○	—
	Horizontal Auto-Swing (Right and Left)	—	—	—		Self-Diagnosis (Digital, LED) Display	○ ★	○ ★	○
	3-D Airflow	—	—	—		Wiring-Error Check	—	—	○
	Comfort Airflow Mode	—	—	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—	○
	3-Step Airflow (H/P Only)	—	—	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○	—
Comfort Control	Auto Fan Speed	○	○	—		Flexible Voltage Correspondence	○	○	○
	Indoor Unit Silent Operation	○	○	—		High Ceiling Application	—	—	—
	Night Quiet Mode (Automatic)	—	—	○		Chargeless	—	—	○
	Outdoor Unit Silent Operation (Manual)	—	—	○		Either Side Drain (Right or Left)	—	—	—
	Intelligent Eye	—	—	—		Power-Selection	—	—	—
	Quick Warming Function	—	—	—	Remote Control	5-Rooms Centralized Controller (Option)	○	○	—
	Hot-Start Function	—	—	—		Remote Control Adaptor (Normal Open-Pulse Contact)(Option)	○	○	—
	Automatic Defrosting	—	—	—		Remote Control Adaptor (Normal Open Contact)(Option)	○	○	—
Operation	Automatic Operation	—	—	—		DIII-NET Compatible (Adaptor) (Option)	○	○	—
	Programme Dry Function	○	○	—	Remote Controller	Wireless	○	○	—
	Fan Only	○	○	—		Wired	—	—	—
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—	—					
	Inverter Powerful Operation	○	○	—					
	Priority-Room Setting	—	—	○					
	Cooling / Heating Mode Lock	—	—	—					
	Home Leave Operation	○	○	—					
	ECONO Mode	—	—	—					
	Indoor Unit On/Off Switch	○	○	—					
	Signal Reception Indicator	○	○	—					
	Temperature Display	—	—	—					
	Another Room Operation	—	—	—					

Note: ○ : Holding Functions ★ : Digital Only
— : No Functions

1.2 Heat Pump Models

Category	Functions	FTXS20-35D(2)VMW(L)(9)	CTXS50D(2)VMW(L)	FTXS20-35CVMB(9)(8)	Category	Functions	FTXS20-35D(2)VMW(L)(9)	CTXS50D(2)VMW(L)	FTXS20-35CVMB(9)(8)
Basic Function	Inverter (with Inverter Power Control)	○	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic, Virustatic Functions	—	—	—
	Operation Limit for Cooling (°CDB)	—	—	—		Photocatalytic Deodorizing Filter	—	—	—
	Operation Limit for Heating (°CWB)	—	—	—		Air Purifying Filter with Photocatalytic Deodorizing Function	—	—	○
	PAM Control	—	—	—		Titanium Apatite Photocatalytic Air-Purifying Filter	○	○	—
Compressor	Oval Scroll Compressor	—	—	—		Mold Proof Air Filter	○	○	○
	Swing Compressor	—	—	—		Wipe-clean Flat Panel	○	○	○
	Rotary Compressor	—	—	—		Washable Grille	—	—	—
	Reluctance DC Motor	—	—	—		Mold Proof Operation	—	—	—
Comfortable Airflow	Power-Airflow Flap	—	—	—		Heating Dry Operation	—	—	—
	Power-Airflow Dual Flaps	○	○	○		Good-Sleep Cooling Operation	—	—	—
	Power-Airflow Diffuser	—	—	—	Timer	24-Hour On/Off Timer	○	○	○
	Wide-Angle Louvers	○	○	○		Night Set Mode	○	○	○
	Vertical Auto-Swing (Up and Down)	○	○	○	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○	○
	Horizontal Auto-Swing (Right and Left)	—	—	—		Self-Diagnosis (Digital, LED) Display	○ ★	○ ★	○ ★
	3-D Airflow	—	—	—		Wiring Error Check	—	—	—
	Comfort Airflow Mode	○	○	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—	—
	3-Step Airflow (H/P Only)	—	—	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	—	○
Comfort Control	Auto Fan Speed	○	○	○		Flexible Voltage Correspondence	○	○	○
	Indoor Unit Silent Operation	○	○	○		High Ceiling Application	—	—	—
	Night Quiet Mode (Automatic)	—	—	—		Chargeless	—	—	—
	Outdoor Unit Silent Operation (Manual)	—	—	—		Either Side Drain (Right or Left)	○	○	○
	Intelligent Eye	○	○	○		Power Selection	—	—	—
	Quick Warming Function	—	—	—	Remote Control	5-Rooms Centralized Controller (Option)	○	○	○
	Hot-Start Function	○	○	○		Remote Control Adaptor (Normal Open-Pulse Contact)(Option)	○	○	○
	Automatic Defrosting	—	—	—		Remote Control Adaptor (Normal Open Contact)(Option)	○	○	○
Operation	Automatic Operation	○	○	○		DIII-NET Compatible (Adaptor) (Option)	○	○	○
	Programme Dry Function	○	○	○	Remote Controller	Wireless	○	○	○
	Fan Only	○	○	○		Wired	—	—	—
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—	—					
	Inverter Powerful Operation	○	○	○					
	Priority-Room Setting	—	—	—					
	Cooling / Heating Mode Lock	—	—	—					
	Home Leave Operation	—	—	○					
	ECONO Mode	○	○	—					
	Indoor Unit On/Off Switch	○	○	○					
	Signal Reception Indicator	○	○	○					
	Temperature Display	—	—	—					
	Another Room Operation	—	—	—					

Note: ○ : Holding Functions ★ : Digital Only
— : No Functions

Category	Functions	FTXS50-71BVMB	FDXS25·35CVMB	CDXS50·60CVMB	Category	Functions	FTXS50-71BVMB	FDXS25·35CVMB	CDXS50·60CVMB
Basic Function	Inverter (with Inverter Power Control)	○	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	—	—	—
	Operation Limit for Cooling (°CDB)	—	—	—		Photocatalytic Deodorizing Filter	—	—	—
	Operation Limit for Heating (°CWB)	—	—	—		Air Purifying Filter with Photocatalytic Deodorizing Function	○	—	—
	PAM Control	—	—	—		Titanium Apatite Photocatalytic Air-Purifying Filter	—	—	—
Compressor	Oval Scroll Compressor	—	—	—		Mold Proof Air Filter	○	○	○
	Swing Compressor	—	—	—		Wipe-clean Flat Panel	○	—	—
	Rotary Compressor	—	—	—		Washable Grille	—	—	—
	Reluctance DC Motor	—	—	—		Mold Proof Operation	—	—	—
Comfortable Airflow	Power-Airflow Flap	—	—	—		Heating Dry Operation	—	—	—
	Power-Airflow Dual Flaps	○	—	—		Good-Sleep Cooling Operation	—	—	—
	Power-Airflow Diffuser	—	—	—	Timer	24-Hour On/Off Timer	○	○	○
	Wide-Angle Louvers	○	—	—		Night Set Mode	○	○	○
	Vertical Auto-Swing (Up and Down)	○	—	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○	○
	Horizontal Auto-Swing (Right and Left)	○	—	—		Self-Diagnosis (Digital, LED) Display	○ ★	○ ★	○ ★
	3-D Airflow	○	—	—		Wiring-Error Check	—	—	—
	Comfort Airflow Mode	—	—	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—	—
	3-Step Airflow (H/P Only)	—	—	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○	—
Comfort Control	Auto Fan Speed	○	○	○		Flexible Voltage Correspondence	○	○	○
	Indoor Unit Silent Operation	○	○	○		High Ceiling Application	—	—	—
	Night Quiet Mode (Automatic)	—	—	—		Chargeless	—	—	—
	Outdoor Unit Silent Operation (Manual)	—	—	—		Either Side Drain (Right or Left)	○	—	—
	Intelligent Eye	○	—	—		Power-Selection	—	—	—
	Quick Warming Function	—	—	—	Remote Control	5-Rooms Centralized Controller (Option)	○	○	○
	Hot-Start Function	○	○	○		Remote Control Adaptor (Normal Open-Pulse Contact)(Option)	○	○	○
	Automatic Defrosting	—	—	—		Remote Control Adaptor (Normal Open Contact)(Option)	○	○	○
Operation	Automatic Operation	○	○	○		DIII-NET Compatible (Adaptor) (Option)	○	○	○
	Programme Dry Function	○	○	○	Remote Controller	Wireless	○	○	○
	Fan Only	○	○	○		Wired	—	—	—
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—	—					
	Inverter Powerful Operation	○	○	○					
	Priority-Room Setting	—	—	—					
	Cooling / Heating Mode Lock	—	—	—					
	Home Leave Operation	○	○	○					
	ECONO Mode	—	—	—					
	Indoor Unit On/Off Switch	○	○	○					
	Signal Reception Indicator	○	○	○					
	Temperature Display	—	—	—					
	Another Room Operation	—	—	—					

Note: ○ : Holding Functions ★ : Digital Only
— : No Functions

Category	Functions	FLXS25-60BVMB	FVXS25-50BVMB	2MXS52DVMB 3MXS52DVMB 4MXS68·80DVMB	Category	Functions	FLXS25-60BVMB	FVXS25-50BVMB	2MXS52DVMB 3MXS52DVMB 4MXS68·80DVMB
Basic Function	Inverter (with Inverter Power Control)	○	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic & Virustatic Functions	○	○	—
	Operation Limit for Cooling (°CDB)	—	—	–10 ~ 46		Photocatalytic Deodorizing Filter	○	○	—
	Operation Limit for Heating (°CWB)	—	—	–15 ~ 15.5		Air Purifying Filter with Photocatalytic Deodorizing Function	—	—	—
	PAM Control	—	—	○		Titanium Apatite Photocatalytic Air-Purifying Filter	—	—	—
Compressor	Oval Scroll Compressor	—	—	—		Mold Proof Air Filter	○	○	—
	Swing Compressor	—	—	○		Wipe-clean Flat Panel	—	—	—
	Rotary Compressor	—	—	—		Washable Grille	—	○	—
	Reluctance DC Motor	—	—	○		Mold Proof Operation	—	—	—
Comfortable Airflow	Power-Airflow Flap	—	—	—		Heating Dry Operation	—	—	—
	Power-Airflow Dual Flaps	—	—	—		Good-Sleep Cooling Operation	—	—	—
	Power-Airflow Diffuser	—	—	—	Timer	24-Hour On/Off Timer	○	○	—
	Wide-Angle Louvers	—	○	—		Night Set Mode	○	○	—
	Vertical Auto-Swing (Up and Down)	○	○	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○	—
	Horizontal Auto-Swing (Right and Left)	—	—	—		Self-Diagnosis (Digital, LED) Display	○ ★1	○ ★1	○
	3-D Airflow	—	—	—		Wiring-Error Check	—	—	○
	Comfort Airflow Mode	—	—	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—	○
	3-Step Airflow (H/P Only)	—	○	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○	—
Comfort Control	Auto Fan Speed	○	○	—		Flexible Voltage Correspondence	○	○	○
	Indoor Unit Silent Operation	○	○	—		High Ceiling Application	—	—	—
	Night Quiet Mode (Automatic)	—	—	○		Chargeless	—	—	★2
	Outdoor Unit Silent Operation (Manual)	—	—	○		Either Side Drain (Right or Left)	—	—	—
	Intelligent Eye	—	—	—		Power-Selection	—	—	—
	Quick Warming Function	—	—	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○	—
	Hot-Start Function	○	○	—		Remote Control Adaptor (Normal Open-Pulse Contact)(Option)	○	○	—
	Automatic Defrosting	—	—	○		Remote Control Adaptor (Normal Open Contact)(Option)	○	○	—
Operation	Automatic Operation	○	○	—		DIII-NET Compatible (Adaptor)(Option)	○	○	—
	Programme Dry Function	○	○	—	Remote Controller	Wireless	○	○	—
	Fan Only	○	○	—		Wired	—	—	—
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—	—					
	Inverter Powerful Operation	○	○	—					
	Priority-Room Setting	—	—	○					
	Cooling / Heating Mode Lock	—	—	○					
	Home Leave Operation	○	○	—					
	ECONO Mode	—	—	—					
	Indoor Unit On/Off Switch	○	○	—					
	Signal Reception Indicator	○	○	—					
	Temperature Display	—	—	—					
	Another Room Operation	—	—	—					

Note: ○ : Holding Functions
— : No Functions

★1 : Digital Only
★2 : 52, 68 class ; 30m / 80 class ; 40m

Category	Functions	ATXS20-35DVMB	ATXS20-35CVMB(9)	Category	Functions	ATXS20-35DVMB	ATXS20-35CVMB(9)
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic, Virustatic Functions	—	—
	Operation Limit for Cooling (°CDB) ★1	—	—				
	Operation Limit for Heating (°CWB)	—	—		Photocatalytic Deodorizing Filter	—	—
	PAM Control	—	—		Air Purifying Filter with Photocatalytic Deodorizing Function	○	○
Compressor	Oval Scroll Compressor	—	—		Titanium Apatite Photocatalytic Air-Purifying Filter	—	—
	Swing Compressor	—	—				
	Rotary Compressor	—	—		Mold Proof Air Filter	○	○
	Reluctance DC Motor	—	—		Wipe-clean Flat Panel	○	—
Comfortable Airflow	Power-Airflow Flap	—	—		Washable Grille	—	○
	Power-Airflow Dual Flaps	○	○		Mold Proof Operation	—	—
					Heating Dry Operation	—	—
	Power-Airflow Diffuser	—	—		Good-Sleep Cooling Operation	—	—
	Wide-Angle Louvers	○	○	Timer	24-Hour On/Off Timer	○	○
	Vertical Auto-Swing (Up and Down)	○	○		Night Set Mode	○	○
	Horizontal Auto-Swing (Right and Left)	—	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	○
	3-D Airflow	—	—		Self-Diagnosis (Digital, LED) Display	○ ★2	○ ★2
	Comfort Airflow Mode	—	—		Wiring Error Check	—	—
	3-Step Airflow (H/P Only)	—	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—	—
Comfort Control	Auto Fan Speed	○	○				
	Indoor Unit Silent Operation	○	○	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○
	Night Quiet Mode (Automatic)	—	—				
	Outdoor Unit Silent Operation (Manual)	—	—		Flexible Voltage Correspondence	○	○
	Intelligent Eye	○	○		High Ceiling Application	—	—
	Quick Warming Function	—	—		Chargeless	—	—
	Hot-Start Function	○	○		Either Side Drain (Right or Left)	○	○
	Automatic Defrosting	—	—		Power Selection	—	—
Operation	Automatic Operation	○	○	Remote Control	5-Rooms Centralized Controller (Option)	○	○
	Programme Dry Function	○	○		Remote Control Adaptor (Normal Open-Pulse Contact)(Option)	○	○
	Fan Only	○	○				
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—		Remote Control Adaptor (Normal Open Contact)(Option)	○	○
	Inverter Powerful Operation	○	○				
	Priority-Room Setting	—	—		DIII-NET Compatible (Adaptor)(Option)	○	○
	Cooling / Heating Mode Lock	—	—	Remote Controller	Wireless	○	○
	Home Leave Operation	○	○		Wired	—	—
	ECONO Mode	—	—				
	Indoor Unit On/Off Switch	○	○				
	Signal Reception Indicator	○	○				
	Temperature Display	—	—				
	Another Room Operation	—	—				

Note: ○ : Holding Functions
— : No Functions

★1 : Lower limit can be extended to –15°C by cutting jumper. (facility use only)
★2 : Digital Only

Category	Functions	ATXS50DVMB	Category	Functions	ATXS50DVMB
Basic Function	Inverter (with Inverter Power Control)	○	Health & Clean	Air Purifying Filter with Bacteriostatic, Virustatic Functions	—
	Operation Limit for Cooling (°CDB)	—			
	Operation Limit for Heating (°CWB)	—		Photocatalytic Deodorizing Filter	—
	PAM Control	—		Air Purifying Filter with Photocatalytic Deodorizing Function	○
Compressor	Oval Scroll Compressor	—		Longlife Filter	—
	Swing Compressor	—		Ultra-Longlife Filter (Option)	—
	Rotary Compressor	—		Mold Proof Air Filter	○
	Reluctance DC Motor	—		Wipe-clean Flat Panel	○
Comfortable Airflow	Power-Airflow Flap	—		Washable Grille	—
	Power-Airflow Dual Flaps	○		Filter Cleaning Indicator	—
	Power-Airflow Diffuser	—		Good-Sleep Cooling Operation	—
	Wide-Angle Louvers	○	Timer	24-Hour On/Off Timer	○
	Vertical Auto-Swing (Up and Down)	○		Night Set Mode	○
	Horizontal Auto-Swing (Right and Left)	○	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○
	3-D Airflow	○		Self-Diagnosis (Digital, LED) Display	○★
	3-Step Airflow (H/P Only)	—		Wiring Error Check	—
Comfort Control	Auto Fan Speed	○		Anticorrosion Treatment of Outdoor Heat Exchanger	—
	Indoor Unit Silent Operation	○			
	Night Quiet Mode (Automatic)	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○
	Outdoor Unit Silent Operation (Manual)	—			
	Intelligent Eye	○		Flexible Voltage Correspondence	○
	Quick Warming Function	—		High Ceiling Application	—
	Hot-Start Function	○		Chargeless	—
	Automatic Defrosting	—		Power Selection	—
Operation	Automatic Operation	○	Remote Control	5-Rooms Centralized Controller (Option)	○
	Programme Dry Function	○		Remote Control Adaptor (Normal Open-Pulse Contact)(Option)	○
	Fan Only	○			
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—		Remote Control Adaptor (Normal Open Contact)(Option)	○
	Inverter Powerful Operation	○			
	Priority-Room Setting	—		DIII-NET Compatible (Adaptor)(Option)	○
	Cooling / Heating Mode Lock	—	Remote Controller	Wireless	○
	Home Leave Operation	○		Wired	—
	Indoor Unit On/Off Switch	○			
	Signal Reception Indicator	○			
	Temperature Display	—			
	Another Room Operation	—			

Note: ○ : Holding Functions
— : No Functions

★: Digital Only

Category	Functions	ATXS50CVMB	2AMX52DVMB 3AMX52CVMB	Category	Functions	ATXS50CVMB	2AMX52DVMB 3AMX52CVMB
Basic Function	Inverter (with Inverter Power Control)	○	○	Health & Clean	Air Purifying Filter with Bacteriostatic, Virustatic Functions	—	—
	Operation Limit for Cooling (°CDB)	—	–10~ 46		Photocatalytic Deodorizing Filter	—	—
	Operation Limit for Heating (°CWB)	—	–15~ 15.5		Air Purifying Filter with Photocatalytic Deodorizing Function	○	—
	PAM Control	—	○		Longlife Filter	—	—
Compressor	Oval Scroll Compressor	—	—		Ultra-Longlife Filter (Option)	—	—
	Swing Compressor	—	○		Mold Proof Air Filter	○	—
	Rotary Compressor	—	—		Wipe-clean Flat Panel	—	—
	Reluctance DC Motor	—	○		Washable Grille	○	—
Comfortable Airflow	Power-Airflow Flap	—	—		Filter Cleaning Indicator	—	—
	Power-Airflow Dual Flaps	○	—		Good-Sleep Cooling Operation	—	—
	Power-Airflow Diffuser	—	—	Timer	24-Hour On/Off Timer	○	—
	Wide-Angle Louvers	○	—		Night Set Mode	○	—
	Vertical Auto-Swing (Up and Down)	○	—	Worry Free “Reliability & Durability”	Auto-Restart (after Power Failure)	○	—
	Horizontal Auto-Swing (Right and Left)	○	—		Self-Diagnosis (Digital, LED) Display	○★	○
	3-D Airflow	○	—		Wiring Error Check	—	○
	3-Step Airflow (H/P Only)	—	—		Anticorrosion Treatment of Outdoor Heat Exchanger	—	○
Comfort Control	Auto Fan Speed	○	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	—
	Indoor Unit Silent Operation	○	—		Flexible Voltage Correspondence	○	○
	Night Quiet Mode (Automatic)	—	○		High Ceiling Application	—	—
	Outdoor Unit Silent Operation (Manual)	—	○		Chargeless	—	30m
	Intelligent Eye	○	—		Power Selection	—	—
	Quick Warming Function	—	○	Remote Control	5-Rooms Centralized Controller (Option)	○	—
	Hot-Start Function	○	—		Remote Control Adaptor (Normal Open-Pulse Contact)(Option)	○	—
	Automatic Defrosting	—	○		Remote Control Adaptor (Normal Open Contact)(Option)	○	—
Operation	Automatic Operation	○	—		DIII-NET Compatible (Adaptor)(Option)	○	—
	Programme Dry Function	○	—	Remote Controller	Wireless	○	—
	Fan Only	○	—		Wired	—	—
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	—	—				
	Inverter Powerful Operation	○	—				
	Priority-Room Setting	—	○				
	Cooling / Heating Mode Lock	—	○				
	Home Leave Operation	○	—				
	Indoor Unit On/Off Switch	○	—				
	Signal Reception Indicator	○	—				
	Temperature Display	—	—				
	Another Room Operation	—	—				

Note: ○ : Holding Functions
— : No Functions

★: Digital Only

Part 2
Specifications

1. Specifications

1.1 Indoor Units - Cooling Only

Wall Mounted Type

50Hz 230V

Model				FTKS20D(2)VMW(9)	FTKS20D(2)VML
Rated Capacity				2.0kW Class	2.0kW Class
Front Panel Color				White	Silver Line
Air Flow Rates		m³/min (cfm)	H	8.7 (307)	8.7 (307)
			M	6.7 (237)	6.7 (237)
			L	4.7 (166)	4.7 (166)
			SL	3.9 (138)	3.9 (138)
Fan	Type			Cross Flow Fan	Cross Flow Fan
	Motor Output		W	40	40
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Control				Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.16	0.16
Power Consumption (Rated)			W	35	35
Power Factor			%	95.1	95.1
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (HxWxD)			mm	283x800x195	283x800x195
Packaged Dimensions (HxWxD)			mm	265x855x340	265x855x340
Weight			kg	9	9
Gross Weight			kg	12	12
Operation Sound	H/L/SL		dBA	38/25/22	38/25/22
Sound Power	H		dBA	56	56
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ 9.5	ϕ 9.5
		Drain	mm	ϕ18.0	ϕ18.0
Drawing No.				3D049118A	3D049119A

Model				FTKS25D(2)VMW(9)	FTKS25D(2)VML
Rated Capacity				2.5kW Class	2.5kW Class
Front Panel Color				White	Silver Line
Air Flow Rates		m³/min (cfm)	H	8.7 (307)	8.7 (307)
			M	6.7 (237)	6.7 (237)
			L	4.7 (166)	4.7 (166)
			SL	3.9 (138)	3.9 (138)
Fan	Type			Cross Flow Fan	Cross Flow Fan
	Motor Output		W	40	40
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Control				Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.16	0.16
Power Consumption (Rated)			W	35	35
Power Factor			%	95.1	95.1
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (HxWxD)			mm	283x800x195	283x800x195
Packaged Dimensions (HxWxD)			mm	265x855x340	265x855x340
Weight			kg	9	9
Gross Weight			kg	12	12
Operation Sound	H/L/SL		dBA	38/25/22	38/25/22
Sound Power	H		dBA	56	56
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ 9.5	ϕ 9.5
		Drain	mm	ϕ18.0	ϕ18.0
Drawing No.				3D049120A	3D049121A

Conversion Formulae
kcal/h=kWx860 Btu/h=kWx3414 cfm=m³/minx35.3

50Hz 230V

Model				FTKS35D(2)VMW(9)	FTKS35D(2)VML
Rated Capacity				3.5kW Class	3.5kW Class
Front Panel Color				White	Silver Line
Air Flow Rates		m³/min (cfm)	H	8.9 (314)	8.9 (314)
			M	6.9 (244)	6.9 (244)
			L	4.8 (169)	4.8 (169)
			SL	4.0 (141)	4.0 (141)
Fan	Type			Cross Flow Fan	Cross Flow Fan
	Motor Output		W	40	40
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Control				Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.18	0.18
Power Consumption (Rated)			W	40	40
Power Factor			%	96.6	96.6
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)			mm	283×800×195	283×800×195
Packaged Dimensions (H×W×D)			mm	265×855×340	265×855×340
Weight			kg	9	9
Gross Weight			kg	12	12
Operation Sound	H/L/SL		dBA	39/26/23	39/26/23
Sound Power	H		dBA	57	57
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ 9.5	ϕ 9.5
		Drain	mm	ϕ18.0	ϕ18.0
Drawing No.				3D049122A	3D049123A

Model				CTKS50D(2)VMW	CTKS50D(2)VML
Rated Capacity				5.0kW Class	5.0kW Class
Front Panel Color				White	Silver Line
Air Flow Rates		m³/min (cfm)	H	11.4 (402)	11.4 (402)
			M	9.3 (328)	9.3 (328)
			L	7.1 (251)	7.1 (251)
			SL	6.2 (219)	6.2 (219)
Fan	Type			Cross Flow Fan	Cross Flow Fan
	Motor Output		W	40	40
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Control				Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.21	0.21
Power Consumption (Rated)			W	48	48
Power Factor			%	99.4	99.4
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)			mm	283×800×195	283×800×195
Packaged Dimensions (H×W×D)			mm	265×855×340	265×855×340
Weight			kg	9	9
Gross Weight			kg	12	12
Operation Sound	H/L/SL		dBA	46/35/32	46/35/32
Sound Power	H		dBA	64	64
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ12.7	ϕ12.7
		Drain	mm	ϕ18.0	ϕ18.0
Drawing No.				3D049124A	3D049125A

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

50Hz 230V

Model				**FTKS20CVMB(9)**	**FTKS25CVMB(9)(8)**
Rated Capacity				2.0kW Class	2.5kW Class
Front Panel Color				White	White
Air Flow Rates		m³/min (cfm)	H	7.7 (272)	7.7 (272)
			M	5.9 (208)	5.9 (208)
			L	4.2 (148)	4.2 (148)
			SL	3.6 (127)	3.6 (127)
Fan	Type			Cross Flow Fan	Cross Flow Fan
	Motor Output		W	18	18
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Control				Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.18	0.18
Power Consumption (Rated)			W	40	40
Power Factor			%	96.6	96.6
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)			mm	273×784×195	273×784×195
Packaged Dimensions (H×W×D)			mm	258×834×325	258×834×325
Weight			kg	7.5	7.5
Gross Weight			kg	11	11
Operation Sound	H/M/L/SL		dBA	38/32/25/22	38/32/25/22
Sound Power	H		dBA	56	56
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ 9.5	ϕ 9.5
		Drain	mm	ϕ18.0	ϕ18.0
Drawing No.				3D044242B	3D044243B

Model				**FTKS35CVMB(9)(8)**	**FTKS50BVMB**
Rated Capacity				3.5kW Class	5.0kW Class
Front Panel Color				White	White
Air Flow Rates		m³/min (cfm)	H	7.7 (272)	11.4 (402)
			M	6.0 (212)	9.7 (342)
			L	4.4 (155)	8.0 (282)
			SL	3.8 (134)	7.1 (251)
Fan	Type			Cross Flow Fan	Cross Flow Fan
	Motor Output		W	18	40
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Control				Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.18	0.18
Power Consumption (Rated)			W	40	40
Power Factor			%	96.6	96.6
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)			mm	273×784×195	290×795×238
Packaged Dimensions (H×W×D)			mm	258×834×325	258×834×325
Weight			kg	7.5	9
Gross Weight			kg	11	13
Operation Sound	H/M/L/SL		dBA	39/33/26/23	44/40/35/32
Sound Power	H		dBA	57	63
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ 9.5	ϕ12.7
		Drain	mm	ϕ18.0	ϕ18.0
Drawing No.				3D044244B	3D040781A

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

50Hz 230V

Model				FTKS60BVMB	FTKS71BVMB
Rated Capacity				6.0kW Class	7.1kW Class
Front Panel Color				White	White
Air Flow Rates		m³/min (cfm)	H	16.2 (572)	16.7 (590)
			M	13.6 (480)	14.2 (501)
			L	11.4 (402)	11.6 (409)
			SL	10.2 (360)	10.6 (374)
Fan	Type			Cross Flow Fan	Cross Flow Fan
	Motor Output		W	43	43
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Control				Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.18	0.20
Power Consumption (Rated)			W	40	45
Power Factor			%	96.6	96.4
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)			mm	290×1,050×238	290×1,050×238
Packaged Dimensions (H×W×D)			mm	337×1,147×366	337×1,147×366
Weight			kg	12	12
Gross Weight			kg	17	17
Operation Sound	H/M/L/SL		dBA	45/41/36/33	46/42/37/34
Sound Power	H		dBA	63	63
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ12.7	ϕ15.9
		Drain	mm	ϕ18.0	ϕ18.0
Drawing No.				3D040782A	3D040783A

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Duct Connected Type

50Hz 230V

Model				FDKS25CVMB	FDKS35CVMB
Rated Capacity				2.5kW Class	3.5kW Class
Front Panel Color				—	—
Air Flow Rates		m³/min (cfm)	H	9.5 (335)	10.0 (353)
			M	8.8 (311)	9.3 (328)
			L	8.0 (282)	8.5 (300)
			SL	6.7 (237)	7.0 (247)
Fan	Type			Sirocco Fan	Sirocco Fan
	Motor Output		W	62	62
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.47	0.47
Power Consumption (Rated)			W	100	100
Power Factor			%	92.5	92.5
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)			mm	200×900×620	200×900×620
Packaged Dimensions (H×W×D)			mm	266×1,106×751	266×1,106×751
Weight			kg	25	25
Gross Weight			kg	31	31
Operation Sound	H/M/L/SL		dBA	35/33/31/29	35/33/31/29
External Static Pressure			Pa	40	40
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ 9.5	ϕ 9.5
		Drain	mm	VP20 (O.D. ϕ 26 / I.D. ϕ 20)	VP20 (O.D. ϕ 26 / I.D. ϕ 20)
Drawing No.				3D048947B	3D048948B

Model				CDKS50CVMB	CDKS60CVMB
Rated Capacity				5.0kW Class	6.0kW Class
Front Panel Color				—	—
Air Flow Rates		m³/min (cfm)	H	12.0 (424)	16.0 (565)
			M	11.0 (388)	14.8 (523)
			L	10.0 (353)	13.5 (477)
			SL	8.4 (297)	11.2 (395)
Fan	Type			Sirocco Fan	Sirocco Fan
	Motor Output		W	130	130
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.64	0.74
Power Consumption (Rated)			W	140	160
Power Factor			%	95.1	94.0
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)			mm	200×900×620	200×1,100×620
Packaged Dimensions (H×W×D)			mm	266×1,106×751	266×1,306×751
Weight			kg	27	30
Gross Weight			kg	34	37
Operation Sound	H/M/L/SL		dBA	37/35/33/31	38/36/34/32
External Static Pressure			Pa	40	40
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ12.7	ϕ12.7
		Drain	mm	VP20 (O.D. ϕ 26 / I.D. ϕ 20)	VP20 (O.D. ϕ 26 / I.D. ϕ 20)
Drawing No.				3D046067A	3D046068A

Note: 1. The operating sound is based on the rear side suction inlet and the external static pressure 40 Pa.
Operating sound for under side suction inlet:[operating sound for rear side suction inlet]+5 dB.
However, when installation to which the external static pressure becomes low is carried out,
5 dB or more may go up.

Conversion Formulae
kcal/h=kW×860
Btu/h=kW×3414
cfm=m³/min×35.3

Floor / Ceiling Suspended Dual Type

50Hz 230V

Model				FLKS25BVMB	FLKS35BVMB
Rated Capacity				2.5kW Class	3.5kW Class
Front Panel Color				Almond White	Almond White
Air Flow Rates		m³/min (cfm)	H	7.6 (268)	8.6 (304)
			M	6.8 (240)	7.6 (268)
			L	6.0 (212)	6.6 (233)
			SL	5.2 (184)	5.6 (198)
Fan	Type			Sirocco Fan	Sirocco Fan
	Motor Output		W	34	34
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Control				Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.34	0.36
Power Consumption (Rated)			W	74	78
Power Factor			%	94.6	94.2
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (HxWxD)			mm	490×1,050×200	490×1,050×200
Packaged Dimensions (HxWxD)			mm	280×1,100×566	280×1,100×566
Weight			kg	16	16
Gross Weight			kg	22	22
Operation Sound	H/M/L/SL		dBA	37/34/31/28	38/35/32/29
Sound Power	H		dBA	53	54
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ 9.5	ϕ 9.5
		Drain	mm	ϕ18.0	ϕ18.0
Drawing No.				3D040166A	3D040167A

Model				FLKS50BVMB	FLKS60BVMB
Rated Capacity				5.0W Class	5.7kW Class
Front Panel Color				Almond White	Almond White
Air Flow Rates		m³/min (cfm)	H	11.4 (402)	12.0 (424)
			M	10.0 (353)	10.7 (378)
			L	8.5 (300)	9.3 (328)
			SL	7.5 (265)	8.3 (293)
Fan	Type			Sirocco Fan	Sirocco Fan
	Motor Output		W	34	34
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Control				Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.45	0.45
Power Consumption (Rated)			W	96	98
Power Factor			%	92.8	94.7
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (HxWxD)			mm	490×1,050×200	490×1,050×200
Packaged Dimensions (HxWxD)			mm	280×1,100×566	280×1,100×566
Weight			kg	17	17
Gross Weight			kg	24	24
Operation Sound	H/M/L/SL		dBA	47/43/39/36	48/45/41/39
Sound Power	H		dBA	63	64
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ12.7	ϕ12.7
		Drain	mm	ϕ18.0	ϕ18.0
Drawing No.				3D040828	3D040830

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Floor Standing Type

50Hz 230V

Model				FVKS25BVMB	FVKS35BVMB
Rated Capacity				2.5kW Class	3.5kW Class
Front Panel Color				Almond White	Almond White
Air Flow Rates		m³/min (cfm)	H	8.1 (286)	8.3 (293)
			M	6.2 (219)	6.3 (222)
			L	4.3 (152)	4.3 (152)
			SL	3.4 (120)	3.4 (120)
Fan	Type			Cross Flow Fan	Cross Flow Fan
	Motor Output		W	14+14	14+14
	Speed		Steps	5 Steps, Silent, Auto	5 Steps, Silent, Auto
Air Direction Control				Right, Left, Horizontal, Upward	Right, Left, Horizontal, Upward
Air Filter				Removable-Washable-Mildew Proof	Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.14	0.14
Power Consumption (Rated)			W	32	32
Power Factor			%	99.4	99.4
Temperature Control				Microcomputer Control	Microcomputer Control
Dimensions (H×W×D)			mm	600×650×195	600×650×195
Packaged Dimensions (H×W×D)			mm	714×770×294	714×770×294
Weight			kg	13	13
Gross Weight			kg	19	19
Operation Sound	H/M/L/SL		dBA	38/32/26/23	39/33/27/24
Sound Power	H		dBA	54	55
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4	ϕ 6.4
		Gas	mm	ϕ 9.5	ϕ 9.5
		Drain	mm	ϕ18.0	ϕ18.0
Drawing No.				3D040164A	3D040165A

Model				FVKS50BVMB
Rated Capacity				5.0kW Class
Front Panel Color				Almond White
Air Flow Rates		m³/min (cfm)	H	10.8 (381)
			M	9.2 (325)
			L	7.7 (272)
			SL	6.7 (237)
Fan	Type			Cross Flow Fan
	Motor Output		W	14+14
	Speed		Steps	5 Steps, Silent, Auto
Air Direction Control				Right, Left, Horizontal, Upward
Air Filter				Removable-Washable-Mildew Proof
Running Current (Rated)			A	0.26
Power Consumption (Rated)			W	55
Power Factor			%	92.0
Temperature Control				Microcomputer Control
Dimensions (H×W×D)			mm	600×650×195
Packaged Dimensions (H×W×D)			mm	714×770×294
Weight			kg	13
Gross Weight			kg	19
Operation Sound	H/M/L/SL		dBA	44/40/36/33
Sound Power	H		dBA	56
Heat Insulation				Both Liquid and Gas Pipes
Piping Connection		Liquid	mm	ϕ 6.4
		Gas	mm	ϕ12.7
		Drain	mm	ϕ20.0
Drawing No.				3D040833

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

1.2 Outdoor Units - Cooling Only

50Hz 230V

Model				3MKS50DVMB	4MKS58DVMB
Cooling Capacity			kW	—	—
Power Consumption			W	—	—
Running Current			A	—	—
Casing Color				Ivory White	Ivory White
Compressor	Type			Hermetically Sealed Swing Type	Hermetically Sealed Swing Type
	Model			2YC32HXD	2YC32HXD
	Motor Output		W	980	980
Refrigerant Oil	Model			FVC50K	FVC50K
	Charge		L	0.65	0.65
Refrigerant	Type			R410A	R410A
	Charge		kg	2.0	2.0
Air Flow Rates		m³/min	H	44	44
			L	37	37
		cfm	H	1,554	1,554
			L	1,306	1,306
Fan	Type			Propeller	Propeller
	Motor Output		W	53	53
	Running Current		A	H: 0.24 / L: 0.17	H: 0.24 / L: 0.17
	Power Consumption		W	H: 44 / L: 27	H: 44 / L: 27
Starting Current			A	7.7	7.7
Dimensions (H×W×D)			mm	735×936×300	735×936×300
Packaged Dimensions (H×W×D)			mm	784×992×390	784×992×390
Weight			kg	55	55
Gross Weight			kg	60	61
Operation Sound			dBA	46	46
Sound Power			dBA	59	59
Piping Connection		Liquid	mm	ϕ 6.4×3	ϕ 6.4×4
		Gas	mm	ϕ 9.5×3	ϕ 9.5×2, ϕ 12.7×2
		Drain	mm	ϕ18.0	ϕ18.0
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
No. of Wiring Connection				3 for Power Supply, 4 for Interunit Wiring	3 for Power Supply, 4 for Interunit Wiring
Max. Interunit Piping Length			m	45 (for Total of Each Room)	45 (for Total of Each Room)
			m	25 (for One Room)	25 (for One Room)
Amount of Additional Charge			g/m	Chargeless	Chargeless
Max. Installation Height Difference			m	15 (between Indoor Unit and Outdoor Unit)	15 (between Indoor Unit and Outdoor Unit)
			m	7.5 (between Indoor Units)	7.5 (between Indoor Units)
Drawing No.				3D049744#1	3D049745#1

Note: 1. The data are based on the conditions shown in the table below.

Cooling	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	7.5m

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

50Hz 230V

Model				**4MKS75DVMB**	**4MKS90DVMB**
Cooling Capacity			kW	—	—
Power Consumption			W	—	—
Running Current			A	—	—
Casing Color				Ivory White	Ivory White
Compressor	Type			Hermetically Sealed Swing Type	Hermetically Sealed Swing Type
	Model			2YC45BXD	2YC45BXD
	Motor Output		W	1,380	1,380
Refrigerant Oil	Model			FVC50K	FVC50K
	Charge		L	0.75	0.75
Refrigerant	Type			R410A	R410A
	Charge		kg	2.3	3.1
Air Flow Rates		m^3/min	H	51	48.5
			L	45	42
		cfm	H	1,801	1,713
			L	1,589	1,483
Fan	Type			Propeller	Propeller
	Motor Output		W	53	51
	Running Current		A	H: 0.33 / L: 0.25	H: 0.44 / L: 0.34
	Power Consumption		W	H: 68 / L: 46	H: 60 / L: 41
Starting Current			A	8.7	9.1
Dimensions (H×W×D)			mm	735×936×300	908×900×320
Packaged Dimensions (H×W×D)			mm	784×992×390	1,025×926×402
Weight			kg	58	66
Gross Weight			kg	64	79
Operation Sound			dBA	48	48
Sound Power			dBA	61	61
Piping Connection		Liquid	mm	ϕ 6.4×4	ϕ 6.4×4
		Gas	mm	ϕ9.5×2, ϕ12.7×1, ϕ15.9×1	ϕ9.5×1, ϕ12.7×1, ϕ15.9×2
		Drain	mm	ϕ18.0	ϕ 25.0
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
No. of Wiring Connection				3 for Power Supply, 4 for Interunit Wiring	3 for Power Supply, 4 for Interunit Wiring
Max. Interunit Piping Length			m	60 (for Total of Each Room)	70 (for Total of Each Room)
			m	25 (for One Room)	25 (for One Room)
Amount of Additional Charge			g/m	Chargeless	Chargeless
Max. Installation Height Difference			m	15 (between Indoor Unit and Outdoor Unit)	15 (between Indoor Unit and Outdoor Unit)
			m	7.5 (between Indoor Units)	7.5 (between Indoor Units)
Drawing No.				3D049746#1	3D049747#1

Note: 1. The data are based on the conditions shown in the table below.

Cooling	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	7.5m

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

1.3 Indoor Units - Heat Pump

Wall Mounted Type

50Hz 230V

Model				FTXS20D(2)VMW(9)		FTXS20D(2)VML	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.0kW Class		2.0kW Class	
Front Panel Color				White		Silver Line	
Air Flow Rates		m³/min (cfm)	H	8.7 (307)	9.4 (332)	8.7 (307)	9.4 (332)
			M	6.7 (237)	7.6 (268)	6.7 (237)	7.6 (268)
			L	4.7 (166)	5.8 (205)	4.7 (166)	5.8 (205)
			SL	3.9 (138)	5.0 (177)	3.9 (138)	5.0 (177)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	40		40	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.16	0.16	0.16	0.16
Power Consumption (Rated)			W	35	35	35	35
Power Factor			%	95.1	95.1	95.1	95.1
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	283×800×195		283×800×195	
Packaged Dimensions (H×W×D)			mm	265×855×340		265×855×340	
Weight			kg	9		9	
Gross Weight			kg	12		12	
Operation Sound	H/L/SL		dBA	38/25/22	38/28/25	38/25/22	38/28/25
Sound Power	H		dBA	56	56	56	56
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ 9.5	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D049110A		3D049111A	

Model				FTXS25D(2)VMW(9)		FTXS25D(2)VML	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.5kW Class		2.5kW Class	
Front Panel Color				White		Silver Line	
Air Flow Rates		m³/min (cfm)	H	8.7 (307)	9.4 (332)	8.7 (307)	9.4 (332)
			M	6.7 (237)	7.6 (268)	6.7 (237)	7.6 (268)
			L	4.7 (166)	5.8 (205)	4.7 (166)	5.8 (205)
			SL	3.9 (138)	5.0 (177)	3.9 (138)	5.0 (177)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	40		40	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.16	0.16	0.16	0.16
Power Consumption (Rated)			W	35	35	35	35
Power Factor			%	95.1	95.1	95.1	95.1
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	283×800×195		283×800×195	
Packaged Dimensions (H×W×D)			mm	265×855×340		265×855×340	
Weight			kg	9		9	
Gross Weight			kg	12		12	
Operation Sound	H/L/SL		dBA	38/25/22	38/28/25	38/25/22	38/28/25
Sound Power	H		dBA	56	56	56	56
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ 9.5	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D049112A		3D049113A	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

50Hz 230V

Model				FTXS35D(2)VMW(9)		FTXS35D(2)VML	
				Cooling	Heating	Cooling	Heating
Rated Capacity				3.5kW Class		3.5kW Class	
Front Panel Color				White		Silver Line	
Air Flow Rates		m³/min (cfm)	H	8.9 (314)	9.7 (342)	8.9 (314)	9.7 (342)
			M	6.9 (244)	7.9 (279)	6.9 (244)	7.9 (279)
			L	4.8 (169)	6.0 (212)	4.8 (169)	6.0 (212)
			SL	4.0 (141)	5.2 (184)	4.0 (141)	5.2 (184)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	40		40	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.18	0.18	0.18	0.18
Power Consumption (Rated)			W	40	40	40	40
Power Factor			%	96.6	96.6	96.6	96.6
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	283×800×195		283×800×195	
Packaged Dimensions (HxWxD)			mm	265×855×340		265×855×340	
Weight			kg	9		9	
Gross Weight			kg	12		12	
Operation Sound	H/L/SL		dBA	39/26/23	39/29/26	39/26/23	39/29/26
Sound Power	H		dBA	57	57	57	57
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ 9.5	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D048875A		3D049114A	

Model				CTXS50D(2)VMW		CTXS50D(2)VML	
				Cooling	Heating	Cooling	Heating
Rated Capacity				5.0kW Class		5.0kW Class	
Front Panel Color				White		Silver Line	
Air Flow Rates		m³/min (cfm)	H	11.4 (402)	11.4 (402)	11.4 (402)	11.4 (402)
			M	9.3 (328)	9.4 (332)	9.3 (328)	9.4 (332)
			L	7.1 (251)	7.4 (261)	7.1 (251)	7.4 (261)
			SL	6.2 (219)	6.3 (222)	6.2 (219)	6.3 (222)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	40		40	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.21	0.21	0.21	0.21
Power Consumption (Rated)			W	48	48	48	48
Power Factor			%	99.4	99.4	99.4	99.4
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	283×800×195		283×800×195	
Packaged Dimensions (HxWxD)			mm	265×855×340		265×855×340	
Weight			kg	9		9	
Gross Weight			kg	12		12	
Operation Sound	H/L/SL		dBA	46/35/32	44/33/30	46/35/32	44/33/30
Sound Power	H		dBA	64	62	64	62
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ12.7		ϕ12.7	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D049115A		3D049116A	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

50Hz 230V

Model				FTXS20CVMB(9)		FTXS25CVMB(9)(8)	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.5kW Class		2.5kW Class	
Front Panel Color				White		White	
Air Flow Rates		m³/min (cfm)	H	7.7 (272)	7.8 (275)	7.7 (272)	7.8 (275)
			M	5.9 (208)	6.5 (230)	5.9 (208)	6.5 (230)
			L	4.2 (148)	5.3 (187)	4.2 (148)	5.3 (187)
			SL	3.6 (127)	4.6 (162)	3.6 (127)	4.6 (162)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	18		18	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.18	0.18	0.18	0.18
Power Consumption (Rated)			W	40	40	40	40
Power Factor			%	96.6	96.6	96.6	96.6
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	273x784x195		273x784x195	
Packaged Dimensions (HxWxD)			mm	258x834x325		258x834x325	
Weight			kg	7.5		7.5	
Gross Weight			kg	11		11	
Operation Sound	H/M/L/SL		dBA	38/32/25/22	38/33/28/25	38/32/25/22	38/33/28/25
Sound Power	H		dBA	56	56	56	56
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ 9.5	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D044245B		3D044246B	

Model				FTXS35CVMB(9)(8)		FTXS50BVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				3.5kW Class		5.0kW Class	
Front Panel Color				White		White	
Air Flow Rates		m³/min (cfm)	H	7.7 (272)	8.1 (286)	11.4 (402)	12.6 (445)
			M	6.0 (212)	6.7 (237)	9.7 (342)	10.8 (381)
			L	4.4 (155)	5.3 (187)	8.0 (282)	8.9 (314)
			SL	3.8 (134)	4.6 (162)	7.1 (251)	7.7 (272)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	18		40	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.18	0.18	0.18	0.20
Power Consumption (Rated)			W	40	40	40	45
Power Factor			%	96.6	96.6	96.6	97.8
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (HxWxD)			mm	273x784x195		290x795x238	
Packaged Dimensions (HxWxD)			mm	258x834x325		280x840x338	
Weight			kg	7.5		9	
Gross Weight			kg	11		13	
Operation Sound	H/M/L/SL		dBA	39/33/26/23	39/34/29/26	44/40/35/32	42/38/33/30
Sound Power	H		dBA	57	57	63	60
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ12.7	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D044247B		3D040778A	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

50Hz 230V

Model				FTXS60BVMB		FTXS71BVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				6.0kW Class		7.1kW Class	
Front Panel Color				White		White	
Air Flow Rates		m³/min (cfm)	H	16.2 (572)	17.4 (614)	16.7 (590)	18.5 (653)
			M	13.6 (480)	15.1 (533)	14.2 (501)	15.1 (533)
			L	11.4 (402)	12.7 (448)	11.6 (409)	13.5 (477)
			SL	10.2 (360)	11.4 (402)	10.6 (374)	12.1 (427)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	43		43	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.18	0.20	0.20	0.22
Power Consumption (Rated)			W	40	45	45	50
Power Factor			%	96.6	97.8	96.4	97.6
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	290×1,050×238		290×1,050×238	
Packaged Dimensions (H×W×D)			mm	337×1,147×366		337×1,147×366	
Weight			kg	12		12	
Gross Weight			kg	17		17	
Operation Sound	H/M/L/SL		dBA	45/41/36/33	44/40/35/32	46/42/37/34	46/42/37/34
Sound Power	H		dBA	63	62	63	63
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ12.7		ϕ15.9	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D040779		3D040780A	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

230V 50Hz

Model				ATXS20DVMB		ATXS25DVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.0kW Class		2.5kW Class	
Front Panel Color				White		White	
Air Flow Rates		m³/min (cfm)	H	7.7 (272)	7.8 (275)	7.7 (272)	7.8 (275)
			M	5.9 (208)	6.5 (230)	5.9 (208)	6.5 (230)
			L	4.2 (148)	5.3 (187)	4.2 (148)	5.3 (187)
			SL	3.6 (127)	4.6 (162)	3.6 (127)	4.6 (162)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	18		18	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.18	0.18	0.18	0.18
Power Consumption (Rated)			W	40	40	40	40
Power Factor			%	96.6	96.6	96.6	96.6
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	273×784×195		273×784×195	
Packaged Dimension (H×W×D)			mm	258×834×325		258×834×325	
Weight			kg	7.5		7.5	
Gross Weight			kg	11		11	
Operation Sound		dBA	H	38	38	38	38
			M	32	33	32	33
			L	25	28	25	28
			SL	22	25	22	25
Sound Power		dBA	H	56	56	56	56
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ 9.5	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D048474		3D048475	

Model				ATXS35DVMB		ATXS50DVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				3.5kW Class		5.0kW Class	
Front Panel Color				White		White	
Air Flow Rates		m³/min (cfm)	H	7.7 (272)	8.1 (286)	11.4 (402)	12.6 (445)
			M	6.0 (212)	6.7 (237)	9.7 (342)	10.8 (381)
			L	4.4 (155)	5.3 (187)	8.0 (282)	8.9 (314)
			SL	3.8 (134)	4.6 (162)	7.1 (251)	7.7 (272)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	18		40	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable / Washable / Mildew Proof	
Running Current (Rated)			A	0.18	0.18	0.18	0.20
Power Consumption (Rated)			W	40	40	40	45
Power Factor			%	96.6	96.6	96.6	97.8
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	273×784×195		290×795×238	
Packaged Dimension (H×W×D)			mm	258×834×325		280×840×338	
Weight			kg	7.5		9	
Gross Weight			kg	11		13	
Operation Sound		dBA	H	39	39	44	42
			M	33	34	40	38
			L	26	29	35	33
			SL	23	26	32	30
Sound Power		dBA	H	57	57	63	60
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ12.7	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D048476		3D047938	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

230V 50Hz

Model				ATXS20CVMB(9)		ATXS25CVMB(9)	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.0kW Class		2.5kW Class	
Front Panel Color				White		White	
Air Flow Rates		m³/min (cfm)	H	7.7 (272)	7.8 (275)	7.7 (272)	7.8 (275)
			M	5.9 (208)	6.5 (230)	5.9 (208)	6.5 (230)
			L	4.2 (148)	5.3 (187)	4.2 (148)	5.3 (187)
			SL	3.6 (127)	4.6 (162)	3.6 (127)	4.6 (162)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	18		18	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.18	0.18	0.18	0.18
Power Consumption (Rated)			W	40	40	40	40
Power Factor			%	96.6	96.6	96.6	96.6
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	273×784×185		273×784×185	
Packaged Dimension (H×W×D)			mm	258×834×325		258×834×325	
Weight			kg	7.5		7.5	
Gross Weight			kg	11		11	
Operation Sound		dBA	H	38	38	38	38
			M	32	33	32	33
			L	25	28	25	28
			SL	22	25	22	25
Sound Power		dBA	H	56	56	56	56
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ 9.5	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D044251B		3D044252B	

Model				ATXS35CVMB(9)		ATXS50CVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				3.5kW Class		5.0kW Class	
Front Panel Color				White		White	
Air Flow Rates		m³/min (cfm)	H	7.7 (272)	8.1 (286)	11.4 (402)	12.6 (445)
			M	6.1 (215)	6.7 (237)	9.7 (342)	10.8 (381)
			L	4.4 (155)	5.3 (187)	8.0 (282)	8.9 (314)
			SL	3.8 (134)	4.6 (162)	7.1 (251)	7.7 (272)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	18		40	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable / Washable / Mildew Proof	
Running Current (Rated)			A	0.18	0.18	0.18	0.20
Power Consumption (Rated)			W	40	40	40	45
Power Factor			%	96.6	96.6	96.6	97.8
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	273×784×185		290×795×230	
Packaged Dimension (H×W×D)			mm	258×834×325		280×840×338	
Weight			kg	7.5		9	
Gross Weight			kg	11		13	
Operation Sound		dBA	H	39	39	44	42
			M	33	34	40	38
			L	26	29	35	33
			SL	23	26	32	30
Sound Power		dBA	H	57	57	63	60
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ12.7	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D044253B		C:3D044869	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Duct Connected Type

50Hz 230V

Model				FDXS25CVMB		FDXS35CVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.5kW Class		3.5kW Class	
Front Panel Color				—		—	
Air Flow Rates		m³/min (cfm)	H	9.5 (335)	9.5 (335)	10.0 (353)	10.0 (353)
			M	8.8 (311)	8.8 (311)	9.3 (328)	9.3 (328)
			L	8.0 (282)	8.0 (282)	8.5 (300)	8.5 (300)
			SL	6.7 (237)	6.7 (237)	7.0 (247)	7.0 (247)
Fan	Type			Sirocco Fan		Sirocco Fan	
	Motor Output		W	62		62	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.47	0.47	0.47	0.47
Power Consumption (Rated)			W	100	100	100	100
Power Factor			%	92.5	92.5	92.5	92.5
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	200×900×620		200×900×620	
Packaged Dimensions (H×W×D)			mm	266×1,106×751		266×1,106×751	
Weight			kg	25		25	
Gross Weight			kg	31		31	
Operation Sound	H/M/L/SL		dBA	35/33/31/29	35/33/31/29	35/33/31/29	35/33/31/29
External Static Pressure			Pa	40		40	
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ 9.5	
		Drain	mm	VP20 (O.D. ϕ 26 / I.D. ϕ 20)		VP20 (O.D. ϕ 26 / I.D. ϕ 20)	
Drawing No.				3D048945B		3D048946B	

Model				CDXS50CVMB		CDXS60CVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				5.0kW Class		6.0kW Class	
Front Panel Color				—		—	
Air Flow Rates		m³/min (cfm)	H	12.0 (424)	12.0 (424)	16.0 (565)	16.0 (565)
			M	11.0 (388)	11.0 (388)	14.8 (523)	14.8 (523)
			L	10.0 (353)	10.0 (353)	13.5 (477)	13.5 (477)
			SL	8.4 (297)	8.4 (297)	11.2 (395)	11.2 (395)
Fan	Type			Sirocco Fan		Sirocco Fan	
	Motor Output		W	130		130	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.64	0.64	0.74	0.74
Power Consumption (Rated)			W	140	140	160	160
Power Factor			%	95.1	95.1	94.0	94.0
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	200×900×620		200×1,100×620	
Packaged Dimensions (H×W×D)			mm	266×1,106×751		266×1,306×751	
Weight			kg	27		30	
Gross Weight			kg	34		37	
Operation Sound	H/M/L/SL		dBA	37/35/33/31	37/35/33/31	38/36/34/32	38/36/34/32
External Static Pressure			Pa	40		40	
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ12.7		ϕ12.7	
		Drain	mm	VP20 (O.D. ϕ 26 / I.D. ϕ 20)		VP20 (O.D. ϕ 26 / I.D. ϕ 20)	
Drawing No.				3D046063A		3D046064A	

Note: 1. The operating sound is based on the rear side suction inlet and the external static pressure 40 Pa.
Operating sound for under side suction inlet:[operating sound for rear side suction inlet]+5 dB.
However, when installation to which the external static pressure becomes low is carried out,
5 dB or more may go up.

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Floor / Ceiling Suspended Dual Type

50Hz 230V

Model				FLXS25BVMB		FLXS35BVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.5kW Class		3.5kW Class	
Front Panel Color				Almond White		Almond White	
Air Flow Rates		m³/min (cfm)	H	7.6 (268)	9.2 (325)	8.6 (304)	9.8 (346)
			M	6.8 (240)	8.3 (293)	7.6 (268)	8.9 (314)
			L	6.0 (212)	7.4 (261)	6.6 (233)	8.0 (282)
			SL	5.2 (184)	6.6 (233)	5.6 (198)	7.2 (254)
Fan	Type			Sirocco Fan		Sirocco Fan	
	Motor Output		W	34		34	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.32	0.34	0.36	0.36
Power Consumption (Rated)			W	70	74	78	78
Power Factor			%	95.1	94.6	94.2	94.2
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	490×1,050×200		490×1,050×200	
Packaged Dimensions (H×W×D)			mm	280×1,100×566		280×1,100×566	
Weight			kg	16		16	
Gross Weight			kg	22		22	
Operation Sound	H/M/L/SL		dBA	37/34/31/28	37/34/31/29	38/35/32/29	39/36/33/30
Sound Power	H		dBA	53	—	54	—
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ 9.5	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D040174A		3D040175A	

Model				FLXS50BVMB		FLXS60BVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				5.0kW Class		5.7kW Class	
Front Panel Color				Almond White		Almond White	
Air Flow Rates		m³/min (cfm)	H	11.4 (402)	12.1 (427)	12.0 (424)	12.8 (452)
			M	10.0 (353)	9.8 (346)	10.7 (378)	10.6 (374)
			L	8.5 (300)	7.5 (265)	9.3 (328)	8.4 (297)
			SL	7.5 (265)	6.8 (240)	8.3 (293)	7.5 (265)
Fan	Type			Sirocco Fan		Sirocco Fan	
	Motor Output		W	34		34	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Downward		Right, Left, Horizontal, Downward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.45	0.45	0.47	0.45
Power Consumption (Rated)			W	96	96	98	96
Power Factor			%	92.8	92.8	90.7	92.8
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	490×1,050×200		490×1,050×200	
Packaged Dimensions (H×W×D)			mm	280×1,100×566		280×1,100×566	
Weight			kg	17		17	
Gross Weight			kg	24		24	
Operation Sound	H/M/L/SL		dBA	47/43/39/36	46/41/35/33	48/45/41/39	47/42/37/34
Sound Power	H		dBA	63	32	64	63
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ12.7		ϕ12.7	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D040826		3D040827A	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

Floor Standing Type

50Hz 230V

Model				FVXS25BVMB		FVXS35BVMB	
				Cooling	Heating	Cooling	Heating
Rated Capacity				2.5kW Class		3.5kW Class	
Front Panel Color				Almond White		Almond White	
Air Flow Rates		m³/min (cfm)	H	8.1 (286)	9.2 (325)	8.3 (293)	9.2 (325)
			M	6.2 (219)	7.0 (247)	6.3 (222)	7.1 (251)
			L	4.3 (152)	4.8 (169)	4.3 (152)	5.0 (177)
			SL	3.4 (120)	3.5 (124)	3.4 (120)	3.6 (127)
Fan	Type			Cross Flow Fan		Cross Flow Fan	
	Motor Output		W	14+14		14+14	
	Speed		Steps	5 Steps, Silent, Auto		5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Upward		Right, Left, Horizontal, Upward	
Air Filter				Removable-Washable-Mildew Proof		Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.14	0.14	0.14	0.14
Power Consumption (Rated)			W	32	32	32	32
Power Factor			%	99.4	99.4	99.4	99.4
Temperature Control				Microcomputer Control		Microcomputer Control	
Dimensions (H×W×D)			mm	600×650×195		600×650×195	
Packaged Dimensions (H×W×D)			mm	714×770×294		714×770×294	
Weight			kg	13		13	
Gross Weight			kg	19		19	
Operation Sound	H/M/L/SL		dBA	38/32/26/23	38/32/26/23	39/33/27/24	39/34/29/26
Sound Power	H		dBA	54	—	55	—
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4		ϕ 6.4	
		Gas	mm	ϕ 9.5		ϕ 9.5	
		Drain	mm	ϕ18.0		ϕ18.0	
Drawing No.				3D040172A		3D040173A	

Model				FVXS50BVMB	
				Cooling	Heating
Rated Capacity				5.0kW Class	
Front Panel Color				Almond White	
Air Flow Rates		m³/min (cfm)	H	10.8 (381)	13.2 (466)
			M	9.2 (325)	11.3 (399)
			L	7.7 (272)	9.4 (332)
			SL	6.7 (237)	8.3 (293)
Fan	Type			Cross Flow Fan	
	Motor Output		W	14+14	
	Speed		Steps	5 Steps, Silent, Auto	
Air Direction Control				Right, Left, Horizontal, Upward	
Air Filter				Removable-Washable-Mildew Proof	
Running Current (Rated)			A	0.26	0.32
Power Consumption (Rated)			W	55	70
Power Factor			%	92.0	95.1
Temperature Control				Microcomputer Control	
Dimensions (H×W×D)			mm	600×650×195	
Packaged Dimensions (H×W×D)			mm	714×770×294	
Weight			kg	13	
Gross Weight			kg	19	
Operation Sound	H/M/L/SL		dBA	44/40/36/33	45/40/36/33
Sound Power	H		dBA	56	57
Heat Insulation				Both Liquid and Gas Pipes	
Piping Connection		Liquid	mm	ϕ 6.4	
		Gas	mm	ϕ12.7	
		Drain	mm	ϕ20.0	
Drawing No.				3D040831	

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m³/min×35.3

1.4 Outdoor Units - Heat Pump

50Hz 230V

Model				2MXS52DVMB		3MXS52DVMB	
				Cooling	Heating	Cooling	Heating
Cooling Capacity			kW	—		—	
Power Consumption			W	—		—	
Running Current			A	—		—	
Casing Color				Ivory White		Ivory White	
Compressor	Type			Hermetically Sealed Swing Type		Hermetically Sealed Swing Type	
	Model			2YC32HXD		2YC32HXD	
	Motor Output		W	980		980	
Refrigerant Oil	Model			FVC50K		FVC50K	
	Charge		L	0.65		0.65	
Refrigerant	Type			R410A		R410A	
	Charge		kg	2.0		2.0	
Air Flow Rates		m^3/min	H	44	44	44	44
			L	37	37	37	37
		cfm	H	1,554	1,554	1,554	1,554
			L	1,306	1,306	1,306	1,306
Fan	Type			Propeller		Propeller	
	Motor Output		W	53		53	
	Running Current		A	H: 0.24 / L: 0.17		H: 0.24 / L: 0.17	
	Power Consumption		W	H: 44 / L: 27		H: 44 / L: 27	
Starting Current			A	6.9		6.9	
Dimensions (H×W×D)			mm	735×936×300		735×936×300	
Packaged Dimensions (H×W×D)			mm	784×992×390		784×992×390	
Weight			kg	55		55	
Gross Weight			kg	60		61	
Operation Sound			dBA	46	47	46	47
Sound Power			dBA	59	60	59	60
Piping Connection		Liquid	mm	ϕ 6.4×2		ϕ 6.4×3	
		Gas	mm	ϕ12.7×2		ϕ9.5×2, ϕ12.7×1	
		Drain	mm	ϕ18.0		ϕ18.0	
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
No. of Wiring Connection				3 for Power Supply, 4 for Interunit Wiring		3 for Power Supply, 4 for Interunit Wiring	
Max. Interunit Piping Length			m	45 (for Total of Each Room)		45 (for Total of Each Room)	
			m	25 (for One Room)		25 (for One Room)	
Amount of Additional Charge			g/m	20 (30m or more)		20 (30m or more)	
Max. Installation Height Difference			m	15 (between Indoor Unit and Outdoor Unit)		15 (between Indoor Unit and Outdoor Unit)	
			m	7.5 (between Indoor Units)		7.5 (between Indoor Units)	
Drawing No.				3D049741#1		3D049740#1	

Note: 1. The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	Indoor ; 20°CDB Outdoor ; 7°CDB/6°CWB	7.5m

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

50Hz 230V

Model				2AMX52DVMB		3AMX52CVMB	
				Cooling	Heating	Cooling	Heating
Cooling Capacity			kW	—		—	
Power Consumption			W	—		—	
Running Current			A	—		—	
Casing Color				Ivory White		Ivory White	
Compressor	Type			Hermetically Sealed Swing Type		Hermetically Sealed Swing Type	
	Model			2YC32HXD		2YC32HXD	
	Motor Output		W	980		980	
Refrigerant Oil	Model			FVC50K		FVC50K	
	Charge		L	0.65		0.65	
Refrigerant	Type			R410A		R410A	
	Charge		kg	2.0		2.0	
Air Flow Rates		m^3/min	H	44	44	44	44
			L	37	37	37	37
		cfm	H	1,554	1,554	1,270	1,270
			L	1,306	1,306	1,068	1,068
Fan	Type			Propeller		Propeller	
	Motor Output		W	53		53	
	Running Current		A	H: 0.24 / L: 0.17		H: 0.24 / L: 0.17	
	Power Consumption		W	H: 44 / L: 27		H: 44 / L: 27	
Starting Current			A	6.9		6.9	
Dimensions (H×W×D)			mm	735×936×300		735×936×300	
Packaged Dimensions (H×W×D)			mm	784×992×390		784×960×357	
Weight			kg	55		55	
Gross Weight			kg	60		59	
Operation Sound			dBA	46	47	46	47
Sound Power			dBA	59	60	59	60
Piping Connection		Liquid	mm	ϕ 6.4×2		ϕ 6.4×3	
		Gas	mm	ϕ12.7×2		ϕ9.5×2, ϕ12.7×1	
		Drain	mm	ϕ18.0		ϕ18.0	
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
No. of Wiring Connection				3 for Power Supply, 4 for Interunit Wiring		3 for Power Supply, 4 for Interunit Wiring	
Max. Interunit Piping Length			m	45 (for Total of Each Room)		45 (for Total of Each Room)	
			m	25 (for One Room)		25 (for One Room)	
Amount of Additional Charge			g/m	20 (30m or more)		20 (30m or more)	
Max. Installation Height Difference			m	15 (between Indoor Unit and Outdoor Unit)		15 (between Indoor Unit and Outdoor Unit)	
			m	7.5 (between Indoor Units)		7.5 (between Indoor Units)	
Drawing No.				3D049741#1		C:3D039603#1	

Note: 1. The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	Indoor ; 20°CDB Outdoor ; 7°CDB/6°CWB	7.5m

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

50Hz 230V

Model				4MXS68DVMB		4MXS80DVMB	
				Cooling	Heating	Cooling	Heating
Cooling Capacity			kW	—		—	
Power Consumption			W	—		—	
Running Current			A	—		—	
Casing Color				Ivory White		Ivory White	
Compressor	Type			Hermetically Sealed Swing Type		Hermetically Sealed Swing Type	
	Model			2YC45BXD		2YC45BXD	
	Motor Output		W	1,380		1,380	
Refrigerant Oil	Model			FVC50K		FVC50K	
	Charge		L	0.75		0.75	
Refrigerant	Type			R410A		R410A	
	Charge		kg	2.6		3.1	
Air Flow Rates		m^3/min	H	51	47.6	48.5	45
			L	45	45	42	42
		cfm	H	1,801	1,681	1,713	1,589
			L	1,589	1,589	1,483	1,483
Fan	Type			Propeller		Propeller	
	Motor Output		W	53		51	
	Running Current		A	H: 0.33 / L: 0.25		H: 0.44 / L: 0.34	
	Power Consumption		W	H: 68 / L: 46		H: 60 / L: 41	
Starting Current			A	8.5		8.7	
Dimensions (H×W×D)			mm	735×936×300		908×900×320	
Packaged Dimensions (H×W×D)			mm	784×992×390		1,025×926×402	
Weight			kg	59		73	
Gross Weight			kg	65		82	
Operation Sound			dBA	48	49	48	49
Sound Power			dBA	61	62	61	62
Piping Connection		Liquid	mm	ϕ 6.4×4		ϕ 6.4×4	
		Gas	mm	ϕ9.5×2, ϕ12.7×2		ϕ 9.5×2, ϕ12.7×1, ϕ15.9×1	
		Drain	mm	ϕ18.0		ϕ 25.0	
Heat Insulation				Both Liquid and Gas Pipes		Both Liquid and Gas Pipes	
No. of Wiring Connection				3 for Power Supply, 4 for Interunit Wiring		3 for Power Supply, 4 for Interunit Wiring	
Max. Interunit Piping Length			m	60 (for Total of Each Room)		70 (for Total of Each Room)	
			m	25 (for One Room)		25 (for One Room)	
Amount of Additional Charge			g/m	20 (30m or more)		20 (40m or more)	
Max. Installation Height Difference			m	15 (between Indoor Unit and Outdoor Unit)		15 (between Indoor Unit and Outdoor Unit)	
			m	7.5 (between Indoor Units)		7.5 (between Indoor Units)	
Drawing No.				3D049742#1		3D049743#1	

Note: 1. The data are based on the conditions shown in the table below.

Cooling	Heating	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB	Indoor ; 20°CDB Outdoor ; 7°CDB/6°CWB	7.5m

Conversion Formulae
kcal/h=kW×860 Btu/h=kW×3414 cfm=m^3/min×35.3

Part 3
Printed Circuit Board Connector Wiring Diagram

1. Printed Circuit Board Connector Wiring Diagram

1.1 Wall Mounted Type

1.1.1 FTK(X)S20~35D, CTK(X)S50D

Connectors

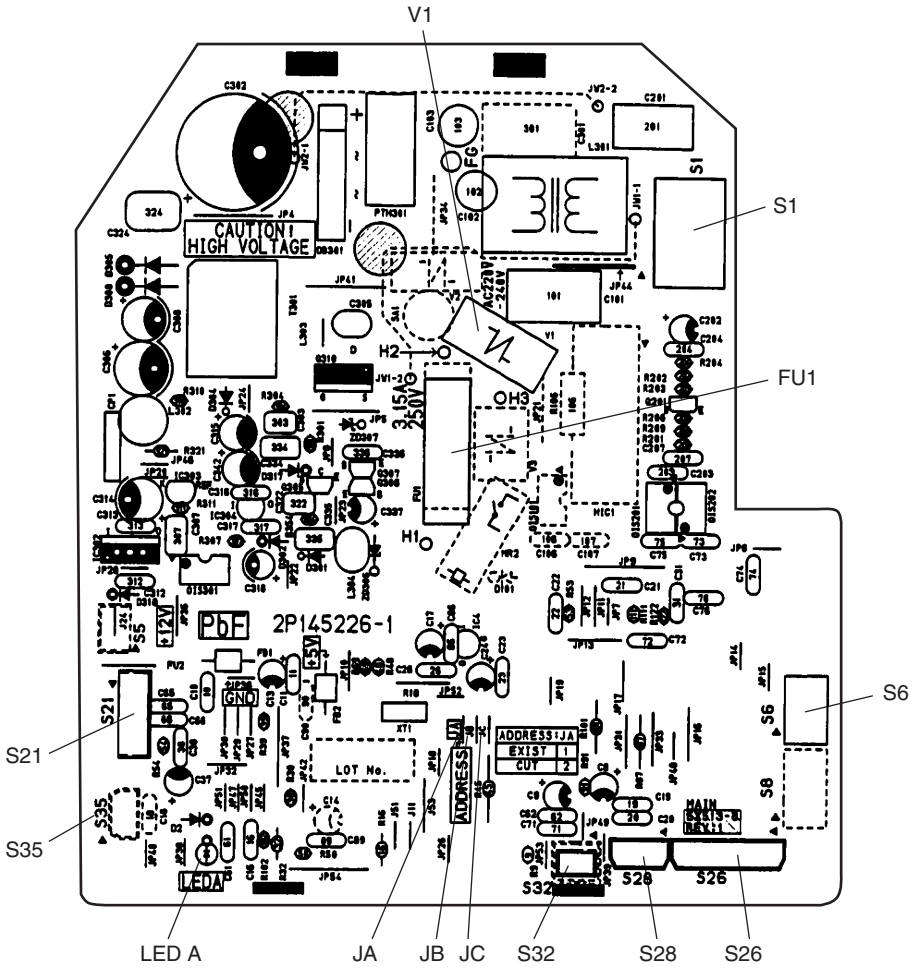
1)	S1	Connector for fan motor
2)	S6	Connector for swing motor (horizontal blades)
3)	S21	Connector for centralized control (HA)
4)	S26	Connector for display PCB
5)	S27, S29, S36	Connector for control PCB
6)	S28	Connector for signal receiver PCB
7)	S32	Connector for heat exchanger thermistor
8)	S35	Connector for INTELLIGENT EYE sensor PCB

Note: Other designations

1)	V1	Varistor
2)	JA	Address setting jumper
	JB	Fan speed setting when compressor is OFF on thermostat
	JC	Power failure recovery function (auto-restart)
		∗ Refer to page 265 for detail.
3)	SW1	Forced operation ON / OFF switch
4)	LED1	LED for operation (green)
5)	LED2	LED for timer (yellow)
6)	LED3	LED for INTELLIGENT EYE (green)
7)	LED A	LED A for service monitor (green)
8)	FU1	Fuse (3.15A)
9)	RTH1	Room temperature thermistor

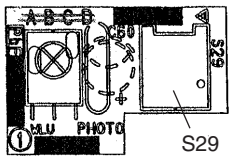
PCB Detail

PCB(1): Control PCB



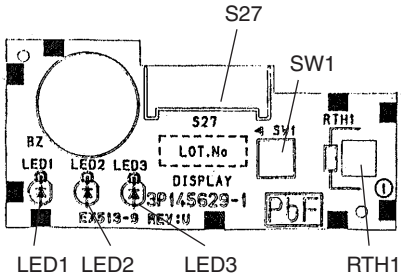
(R4288)

PCB(2): Signal Receiver PCB



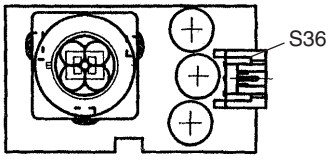
(R4289)

PCB(3): Display PCB



(R4290)

PCB(4): INTELLIGENT EYE sensor PCB



(R4291)

1.1.2 FTK(X)S20~35C, ATXS20~35D, ATXS20~35C

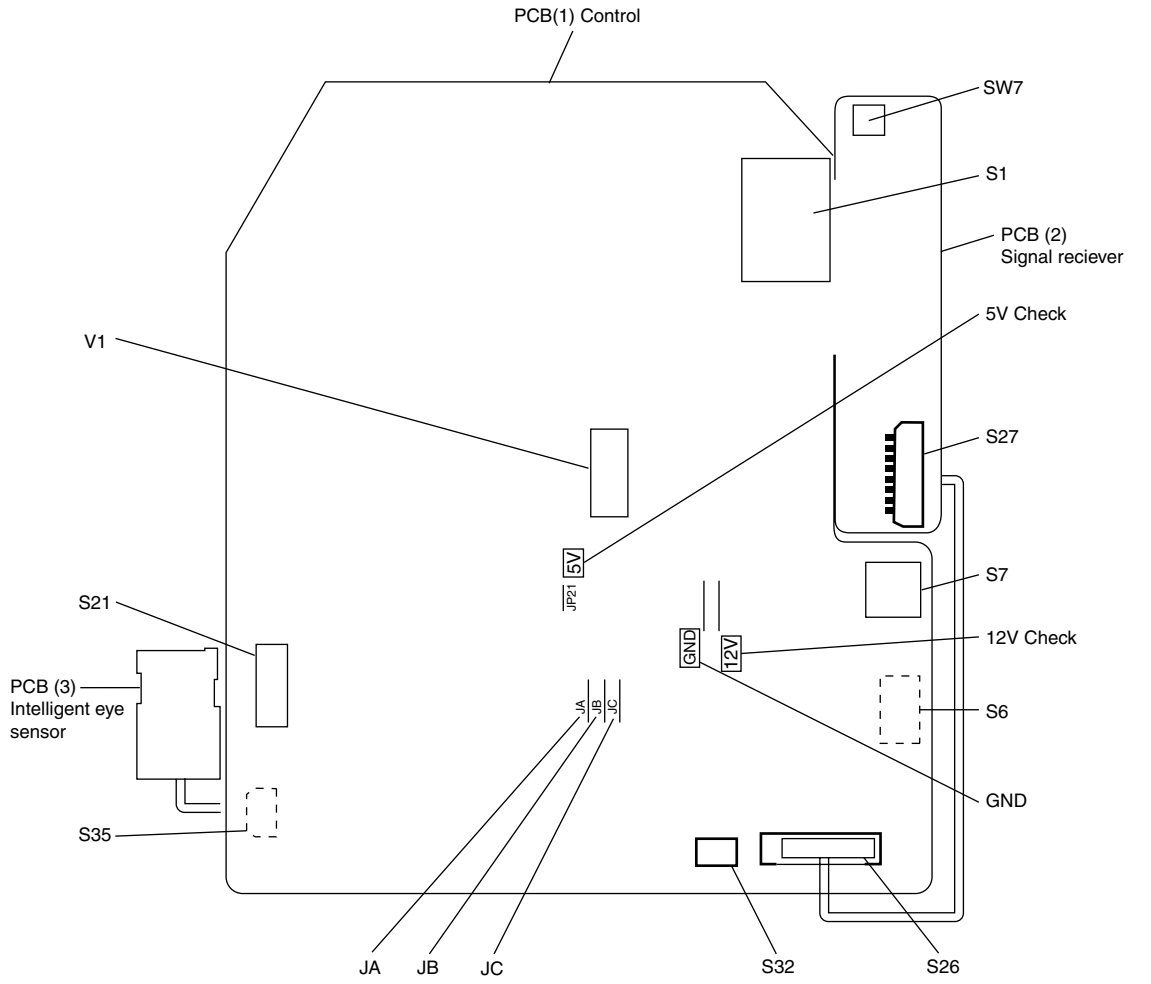
Connectors

1) S1 Connector for fan motor
2) S6 Connector for swing motor (Horizontal Flap)
3) S7 Connector for fan motor
4) S21 Connector for centralized control to 5 rooms
5) S26 Connector for signal receiver PCB
6) S27 Connector for control PCB
7) S32 Connector for heat exchanger thermistor
8) S35 Connector for INTELLIGENT EYE Sensor PCB

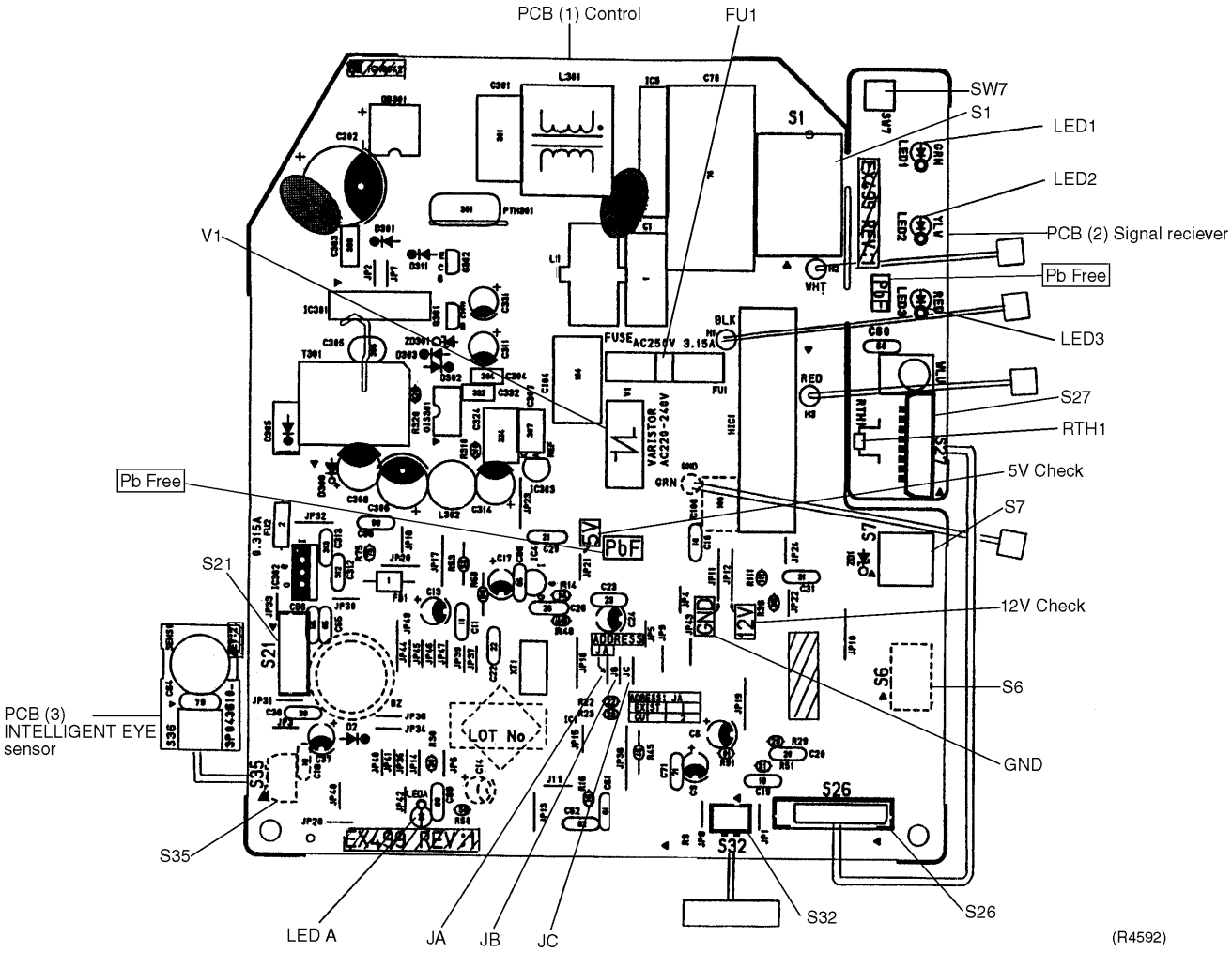
Note: Other designations

1) V1 Varistor
2) JA Address setting jumper
   JB Fan speed setting when compressor is OFF on thermostat
   JC Power failure recovery function
   ∗ Refer to page 265 for more detail.
3) SW7 Forced operation ON/OFF switch
4) LED1 LED for operation (green)
5) LED2 LED for timer (yellow)
6) LED3 LED for HOME LEAVE operation (red)
7) LED A LED for service monitor (green)
8) FU1 Fuse (3.15A)
9) RTH1 Room temperature thermistor

PCB


PCB(1) Control
SW7
S1
PCB (2)
Signal reciever
5V Check
V1
S27
5V
JP21
S7
S21
GND
12V
12V Check
PCB (3)
Intelligent eye
sensor
JA
JB
JC
S6
GND
S35
JA
JB
JC
S32
S26
(R2413)

PCB Detail


PCB (1) Control
FU1
SW7
S1
LED1
LED2
PCB (2) Signal reciever
Pb Free
LED3
S27
RTH1
5V Check
S7
12V Check
S6
GND
S26
S32
JC
JB
JA
LED A
S35
PCB (3)
INTELLIGENT EYE
sensor
S21
Pb Free
V1
(R4592)

1.1.3 FTK(X)S50~71B, ATXS50D, ATXS50C

Connectors

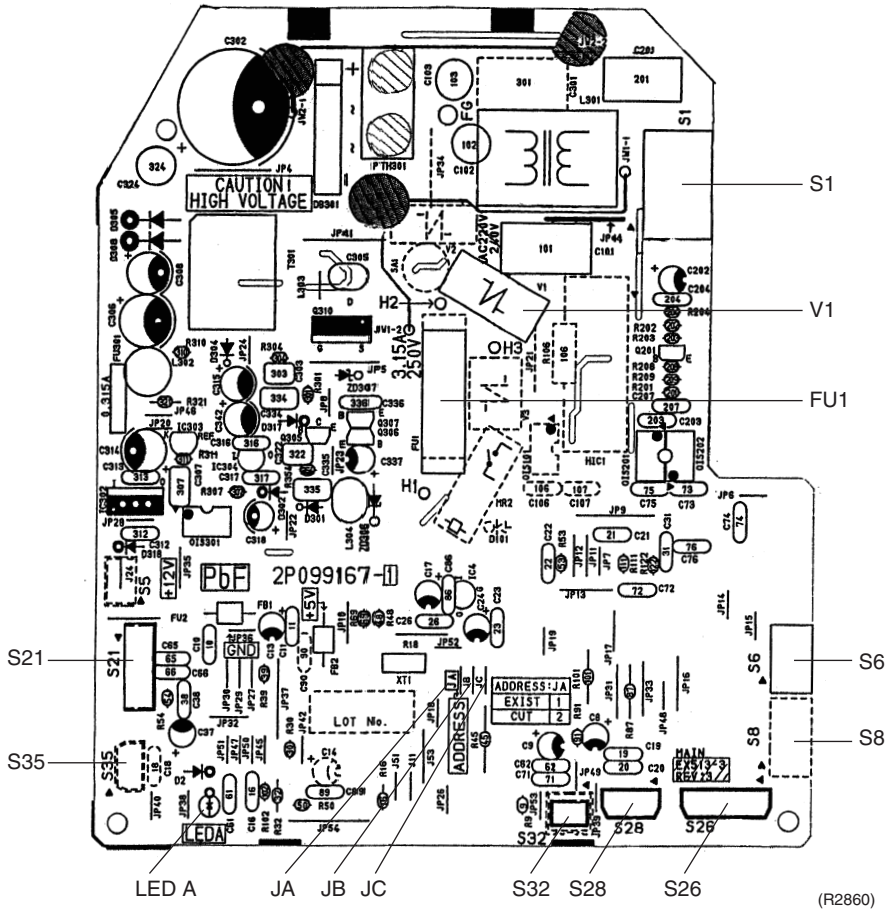
1)	S1	Connector for fan motor
2)	S6	Connector for swing motor (horizontal blades)
3)	S8	Connector for swing motor (vertical blades)
4)	S21	Connector for centralized control (HA)
5)	S26, S37	Connector for buzzer PCB
6)	S27, S29, S36	Connector for control PCB
7)	S28	Connector for signal receiver PCB
8)	S32	Connector for heat exchanger thermistor
9)	S35	Connector for Intelligent Eye sensor PCB
10)	S38	Connector for display PCB

Note: Other designations

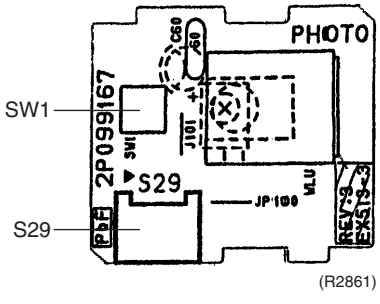
1)	V1	Varistor
2)	JA	Address setting jumper
	JB	Fan speed setting when compressor is OFF on thermostat
	JC	Power failure recovery function
		∗ Refer to page 265 for detail.
3)	SW1	Forced operation ON/OFF switch
4)	LED1	LED for operation (green)
5)	LED2	LED for timer (yellow)
6)	LED3	LED for HOME LEAVE operation (red)
7)	LED A	LED A for service monitor (green)
8)	FU1	Fuse (3.15A)
9)	RTH1	Room temperature thermistor

PCB Detail

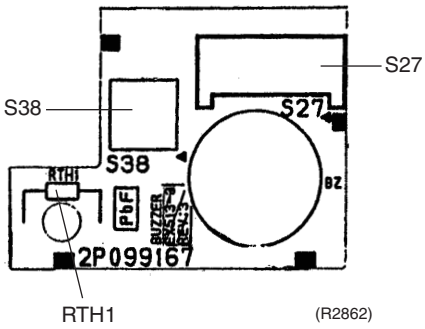
PCB(1): Control PCB (indoor unit)



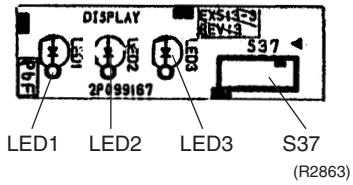
PCB(2): Signal Receiver PCB



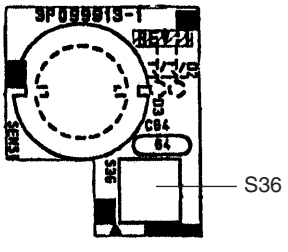
PCB(3): Buzzer PCB



PCB(4): Display PCB



PCB(5): Intelligent Eye sensor PCB



1.2 Duct Connected Type

Connectors

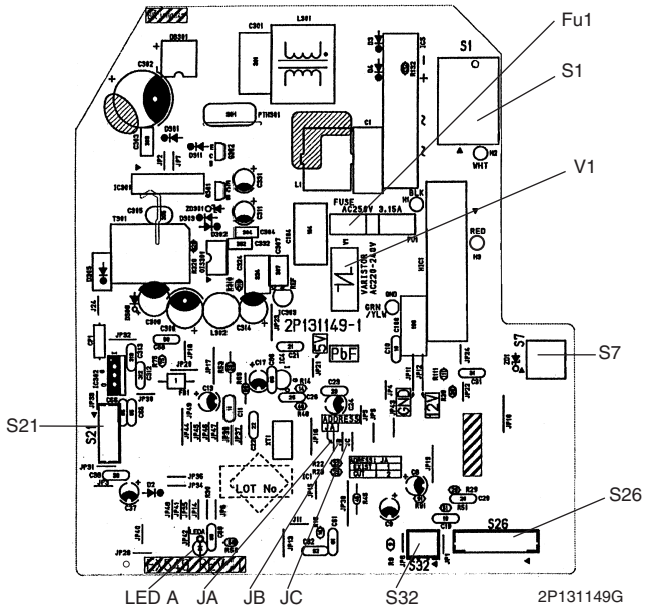
1) S1 (on PCB 1) Connector for fan motor
2) S1 (on PCB 2) Connector for control PCB
3) S7 Connector for fan motor
4) S21 Connector for centralized control to 5 rooms
5) S26 Connector for display PCB
6) S32 Connector for room temp / heat exchanger thermistor

Note: Other designations

1) V1 Varistor
2) JA Address setting jumper
   JB Fan speed setting when compressor is OFF on thermostat
   JC Power failure recovery function
   ∗ Refer to page 265 for more detail.
3) SW1 Forced operation ON/OFF switch
4) LED1 LED for operation (green)
5) LED2 LED for timer (yellow)
6) LED3 LED for HOME LEAVE operation (red)
7) LED A LED for service monitor (green)
8) FU1 Fuse (3.15A)
9) RTH1 Room temperature thermistor

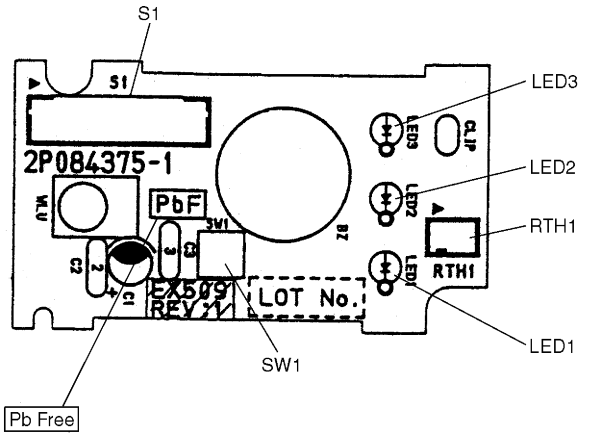
PCB Detail

PCB (1): Control PCB



PCB Detail

PCB (2): Display PCB



1.3 Floor / Ceiling Suspended Dual Type

Connectors

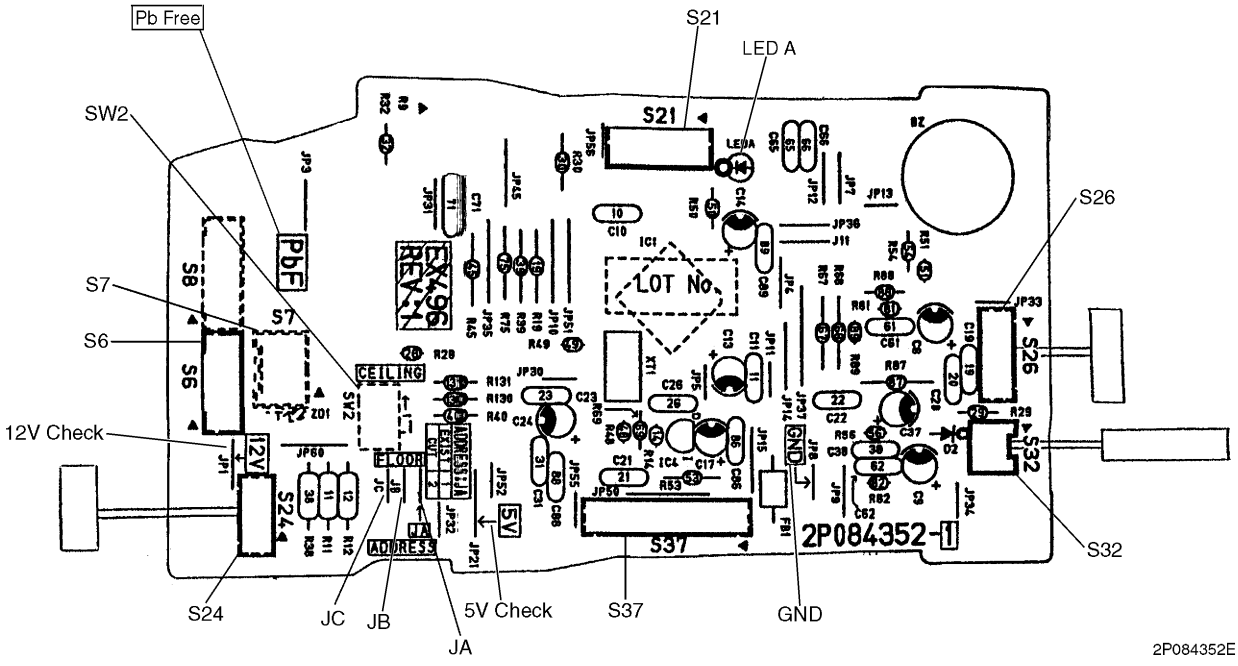
1) S6	Connector for swing motor (horizontal swing)
2) S7	Connector for fan motor
3) S21	Connector for centralized control
4) S24	Connector for display PCB
5) S25, S27, S36	Connector for control PCB
6) S26	Connector for signal receiver PCB
7) S31	Connector for room temperature thermistor
8) S32	Connector for heat exchanger thermistor
9) S37	Connector for power supply PCB

Note: Other designations

1) V1	Varistor
2) JA	Address setting jumper
JB	Fan speed setting when compressor is OFF on thermostat
JC	Power failure recovery function
	∗ Refer to page 265 for detail.
3) SW1	Forced operation ON/OFF switch
4) SW2	Select switch ceiling or floor
5) LED1	LED for operation (green)
6) LED2	LED for timer (yellow)
7) LED3	LED for HOME LEAVE operation (red)
8) LED A	LED for service monitor (green)
9) FU1	Fuse (3.15A)

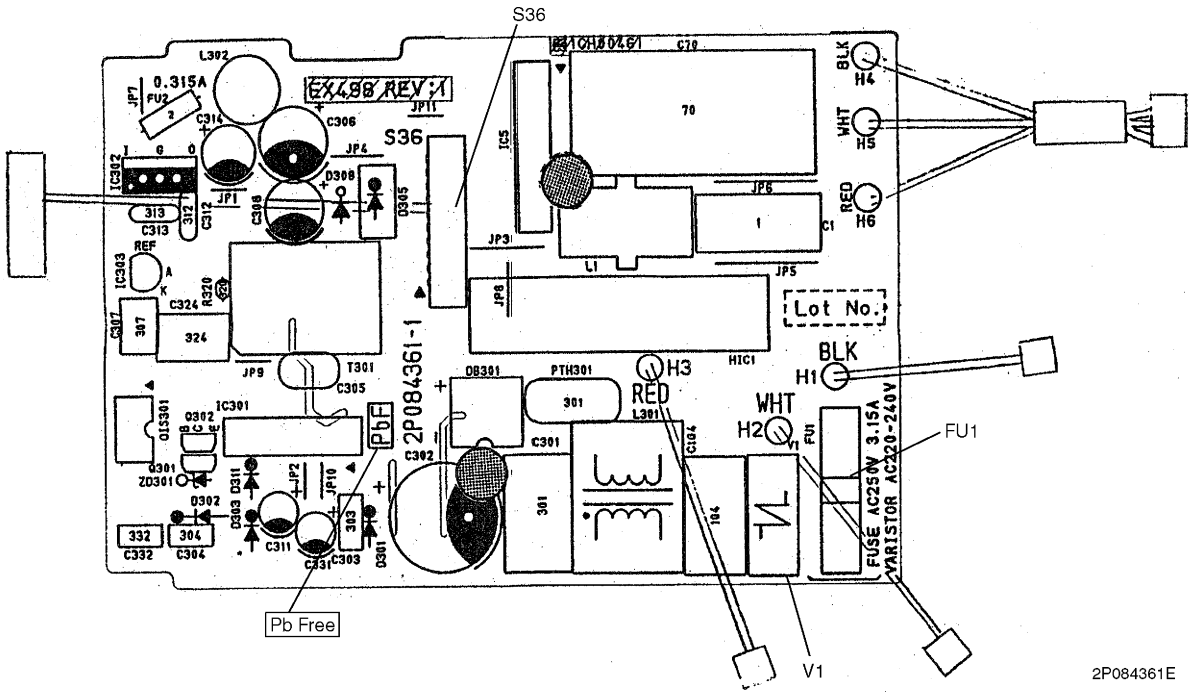
PCB Detail

PCB (1): Control PCB

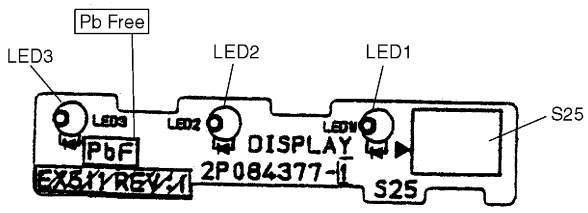


PCB Detail

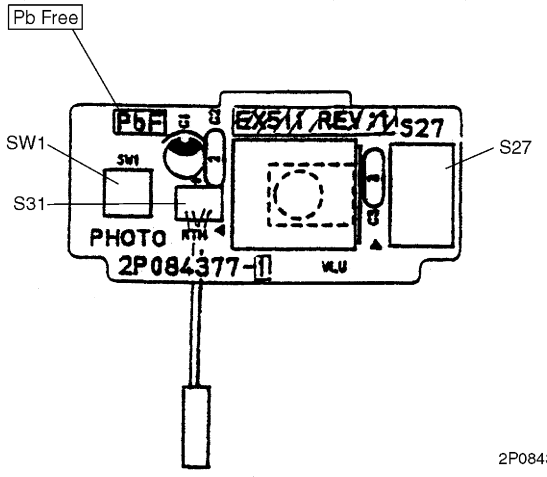
PCB (2): Power Supply PCB



PCB (3): Display PCB



PCB (4): Signal Receiver PCB



1.4 Floor Standing Type

Connectors

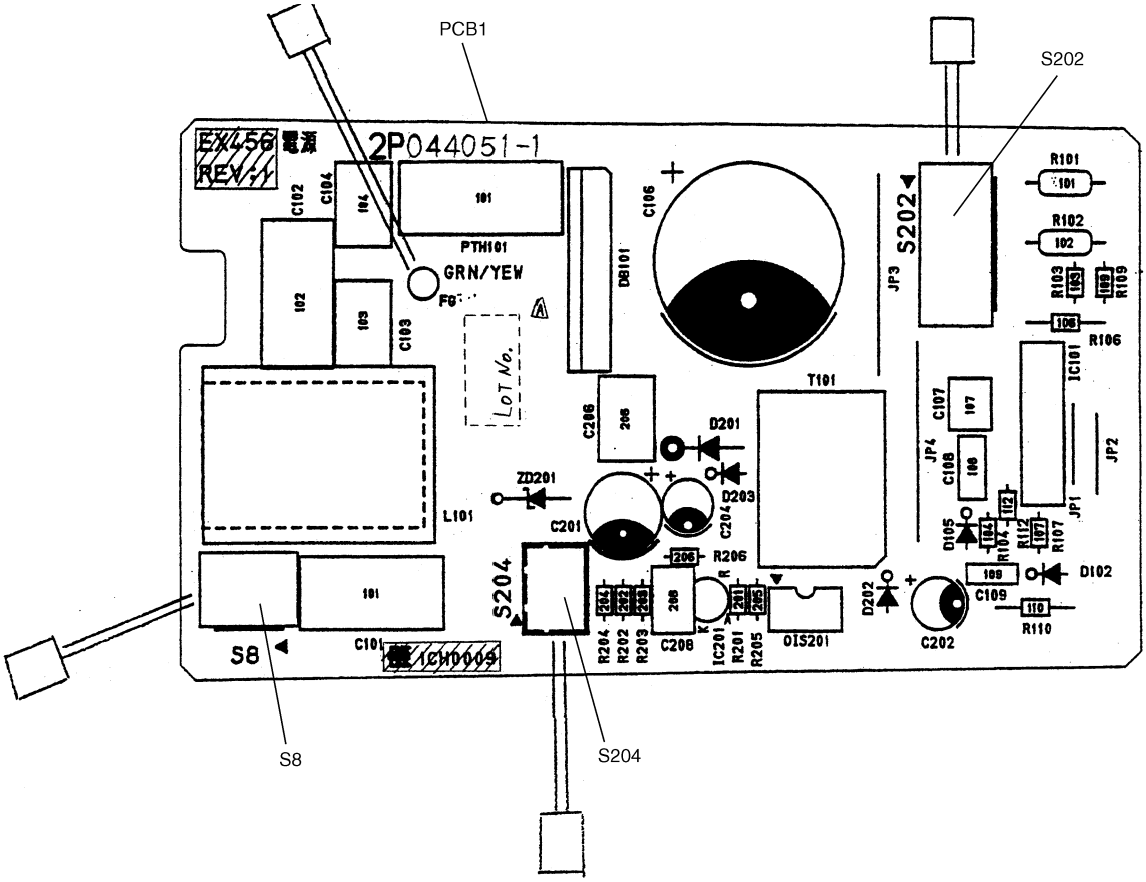
1) S6	Connector for swing motor and lower air outlet motor
2) S21	Connector for centralized control
3) S23	Connector for signal receiver
4) S31, S32	Connector for room temperature / heat exchanger thermistor
5) S201, S203, S7, S24, S26	Connector for power supply PCB (1)
6) S202, S204, S8	Connector for control PCB (2)
7) S25	Connector for display PCB (3)
8) S301, S302	Connector for fan motors

Note: Other Designations

1) V1	Varistor
2) JA	Address setting jumper
JB	Fan speed setting when compressor is OFF on thermostat
JC	Power failure recovery function
	∗ Refer to page 265 for detail.
3) SW1	Forced operation ON/OFF switch
4) SW2	Changing upward air flow limit switch
5) SW4	Discharge changeover switch
6) FU	Fuse (3.15A)
7) LED11	LED for operation (green)
8) LED12	LED for timer (yellow)
9) LED14	LED for HOME LEAVE operation (red)
10)LED A	LED for service monitor (green)

PCB Detail

PCB (1): Power Supply PCB



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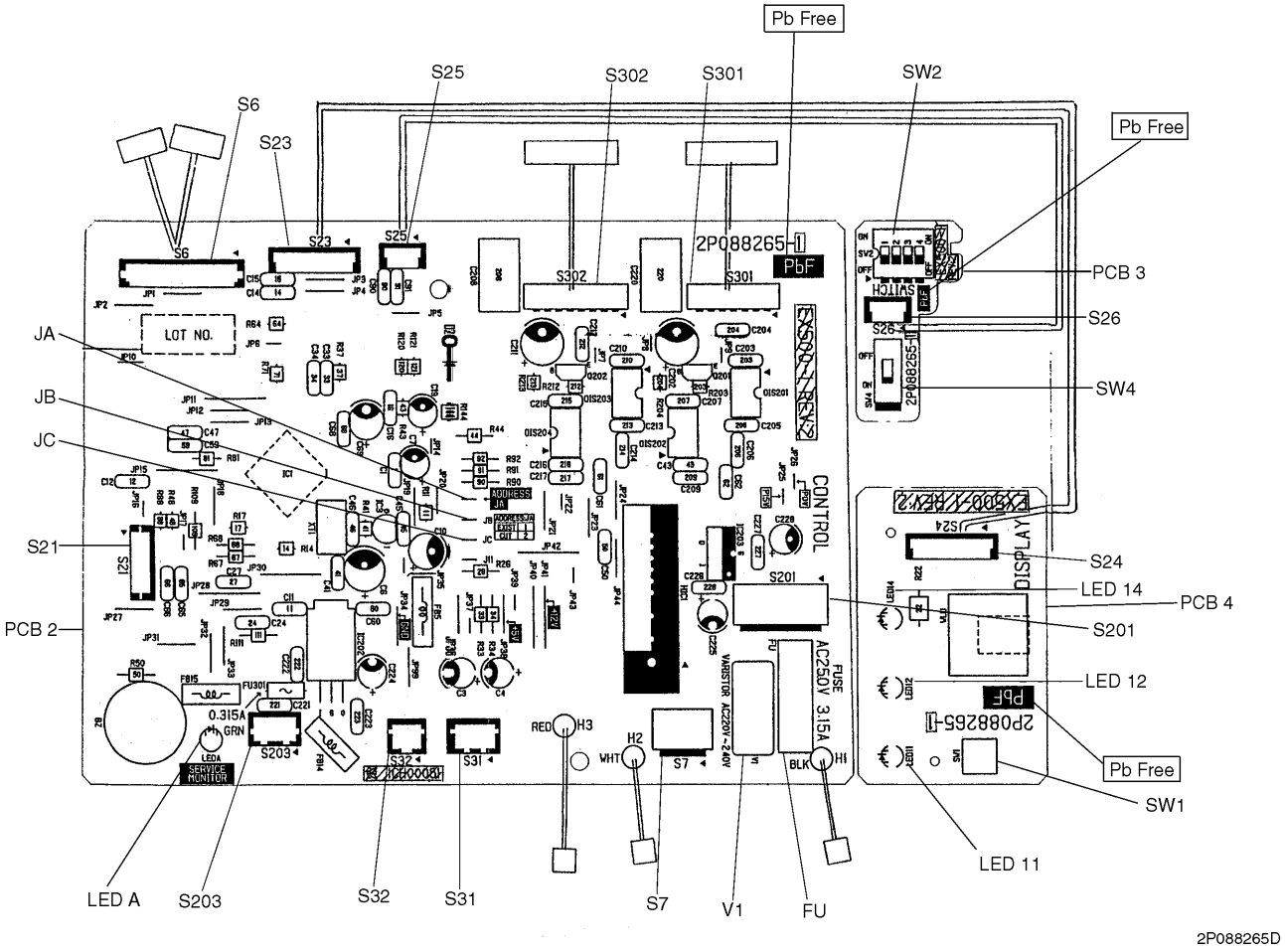
PCB Detail

PCB (2): Control PCB
PCB (3): Display PCB
PCB (4): Signal Receiver PCB



1.5 Outdoor Units

Connectors

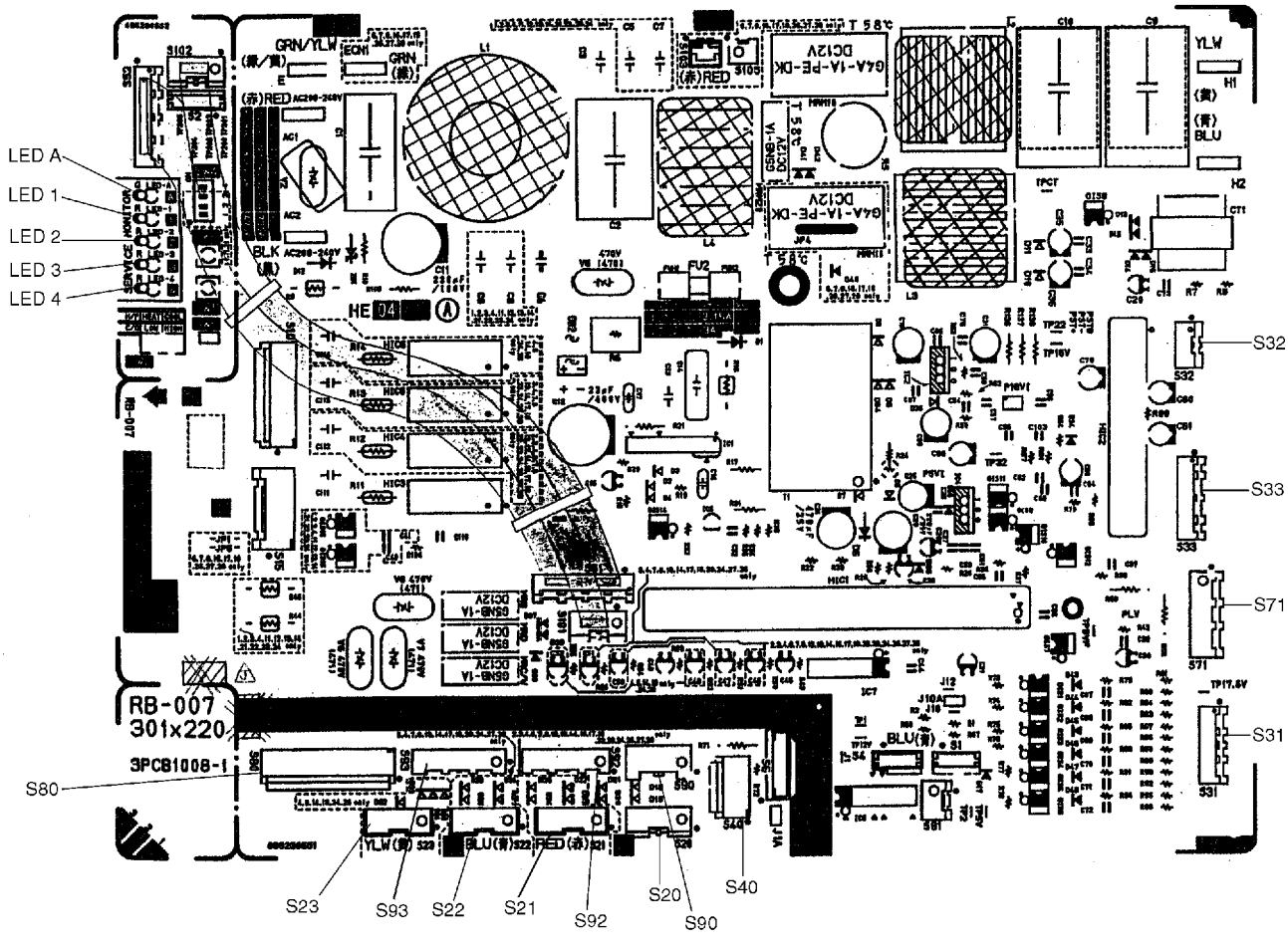
1) S20	Connector for electronic expansion valve coil A port
2) S21	Connector for electronic expansion valve coil B port
3) S22	Connector for electronic expansion valve coil C port
4) S23	Connector for electronic expansion valve coil D port
5) S31	Connector for CN14
6) S32	Connector for CN11
7) S33	Connector for S34
8) S40	Connector for overload relay
9) S71	Connector for S72
10)S80	Connector for four way valve coil
11)S90	Connector for thermistor (outdoor air, heat exchanger, and discharge pipe)
12)S92	Connector for gas pipe thermistor
13)S93	Connector for liquid pipe thermistor

Note: Other Designations

1) LED A, LED 1 to 4 Service Monitor LED

PCB Detail

PCB (1): Control PCB



2P138922A

Part 4
Function and Control

1. Main Functions

Note: See the list of functions for the functions applicable to different models.

1.1 Frequency Principle

Main Control Parameters

The compressor is frequency-controlled during normal operation. The target frequency is set by the following 2 parameters coming from the operating indoor unit:

- The load condition of the operating indoor unit
- The difference between the room temperature and the set temperature

Additional Control Parameters

The target frequency is adapted by additional parameters in the following cases:

- Frequency restrictions
- Initial settings
- Forced cooling / heating operation

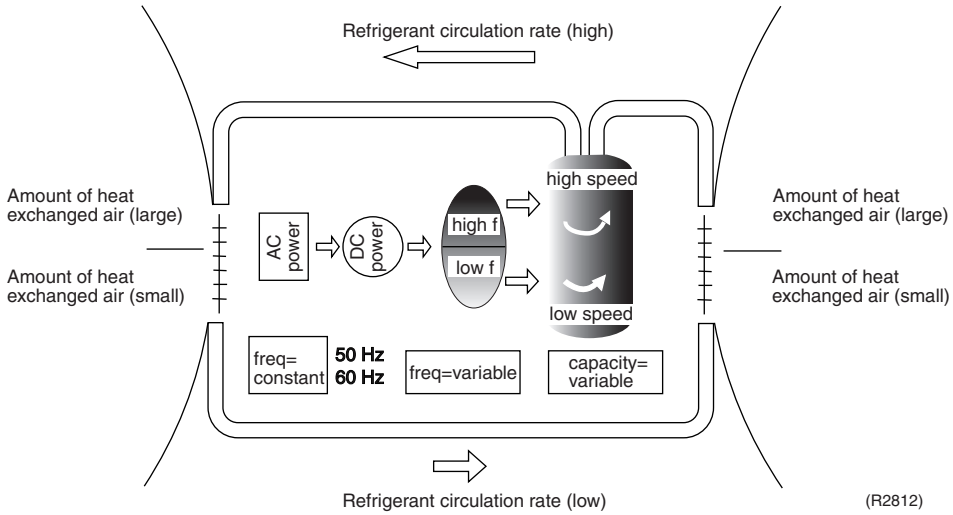
Inverter Principle

To regulate the capacity, a frequency control is needed. The inverter makes it possible to vary the rotation speed of the compressor. The following table explains the conversion principle:

Phase	Description
1	The supplied AC power source is converted into the DC power source for the present.
2	The DC power source is reconverted into the three phase AC power source with variable frequency. ■ When the frequency increases, the rotation speed of the compressor increases resulting in an increased refrigerant circulation. This leads to a higher amount of the heat exchange per unit. ■ When the frequency decreases, the rotation speed of the compressor decreases resulting in a decreased refrigerant circulation. This leads to a lower amount of the heat exchange per unit.

Drawing of Inverter

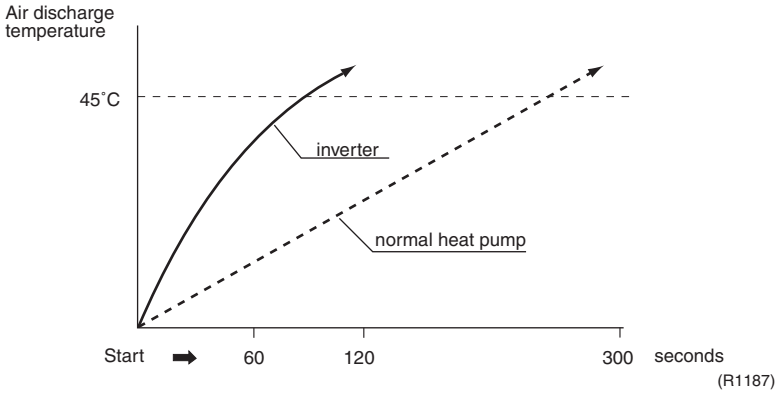
The following drawing shows a schematic view of the inverter principle:



Inverter Features

The inverter provides the following features:

- The regulating capacity can be changed according to the changes in the outdoor air temperature and cooling / heating load.
- Quick heating and quick cooling
  The compressor rotational speed is increased when starting the heating (or cooling). This enables a quick set temperature.



- Even during extreme cold weather, the high capacity is achieved. It is maintained even when the outdoor air temperature is 2°C.
- Comfortable air conditioning
  A detailed adjustment is integrated to ensure a fixed room temperature. It is possible to air condition with a small room temperature variation.
- Energy saving heating and cooling
  Once the set temperature is reached, the energy saving operation enables to maintain the room temperature at low power.

Frequency Limits

The following table shows the functions that define the minimum and maximum frequency:

Frequency limits	Limited during the activation of following functions
Low	■ Four way valve operation compensation. Refer to page 73.
High	■ Input current control. Refer to page 74. ■ Compressor protection function. Refer to page 73. ■ Heating Peak-cut control. Refer to page 75. ■ Freeze-up protection. Refer to page 75. ■ Defrost control. Refer to page 77.

Forced Cooling / Heating Operation

For more information, refer to “Forced operation mode” on page 83.

1.2 Power-Airflow Dual Flaps, Wide Angle Louvers and Auto-Swing

Power-airflow Dual Flaps

The large flaps send a large volume of air downwards to the floor. The flap provides an optimum control area in cooling, heating and dry mode.

Heating Mode
During heating mode, the large flap enables direct warm air straight downwards. The flap presses the warm air above the floor to reach the entire room.

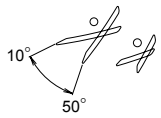
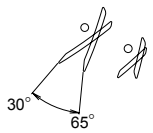
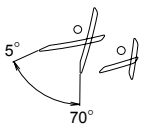
Cooling Mode
During cooling mode, the flap retracts into the indoor unit. Then, cool air can be blown far and pervaded all over the room.

Wide-Angle Louvers

The louvres, made of elastic synthetic resin, provide a wide range of airflow that guarantees a comfortable air distribution.

Auto-Swing

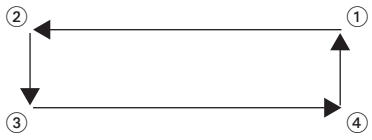
In case of FTK(X)S20-35D, CTK(X)S50D
The following table explains the auto swing process for heating, cooling, dry and fan :

Vertical Swing (up and down)			Horizontal Swing (right and left: manual)
Cooling / Dry	Heating	Fan	
 (R4281)	 (R4282)	 (R4283)	 (R4284)

3-D Airflow

FTK(X)S50-71B, ATXS50D, ATXS50C

- Alternative repetition of vertical and horizontal swing motions enables uniform air-conditioning of the entire room. This function is effective for starting the air conditioner.
- When the horizontal swing and vertical swing are both set to auto mode, the airflow become 3-D airflow and the horizontal swing and vertical swing motions are alternated. The order of swing motion is such that it turns counterclockwise, starting from the right upper point as viewed to the front side of the indoor unit.

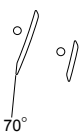
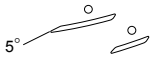


(R1024)

COMFORT AIRFLOW Mode

FTK(X)S20-35D, CTK(X)S50D
The vertical swing flap is controlled not to blow the air directly on the person in the room.

- The airflow rate is controlled automatically within the following steps.
  Cooling: L tap – MH tap (same as AUTOMATIC)
  Heating: ML tap – M tap
- The latest command has the priority between POWERFUL and COMFORT AIRFLOW.

Heating	Cooling
 (R4303)	 (R4302)

1.3 Fan Speed Control for Indoor Units

Control Mode

The airflow rate can be automatically controlled depending on the difference between the set temperature and the room temperature. This is done through phase control and Hall IC control.

For more information about Hall IC, refer to the troubleshooting for fan motor on page 178.

Phase Steps

Phase control and fan speed control contains 9 steps: LLL, LL, SL, L, ML, M, MH, H and HH.

Step	Cooling	Heating	Dry mode
LLL	 (R2818)	 (R2818)	20 · 25 · 35kW class : 670 - 880 rpm (During powerful operation : 720 - 930 rpm) 50 · 60 · 71kW class : 750 - 1000 rpm (During powerful operation : 1050 rpm)
LL			
SL (Silent)			
L			
ML			
M			
MH			
H			
HH (Powerful)			

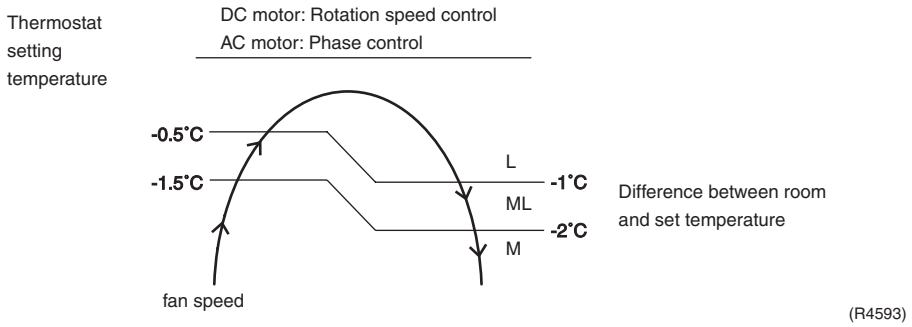
= Within this range the airflow rate is automatically controlled when the FAN setting button is set to automatic.

Note:

1. During powerful operation, fan rotates at H tap + 50 - 90 rpm.
2. Fan stops during defrost operation.

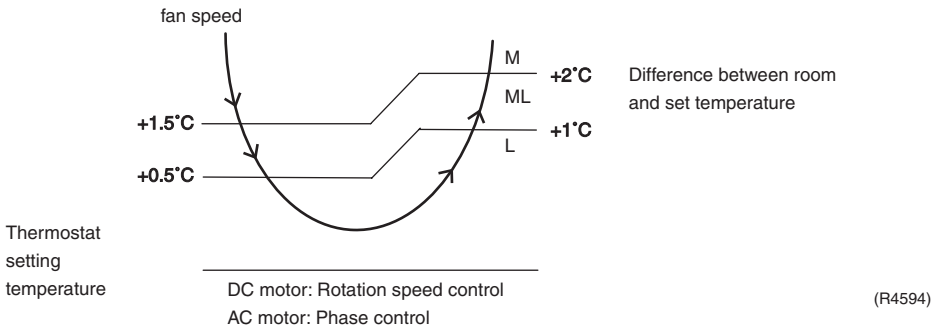
Automatic Air Flow Control for Heating

The following drawing explains the principle for fan speed control for heating:



Automatic Air Flow Control for Cooling

The following drawing explains the principle of fan speed control for cooling:



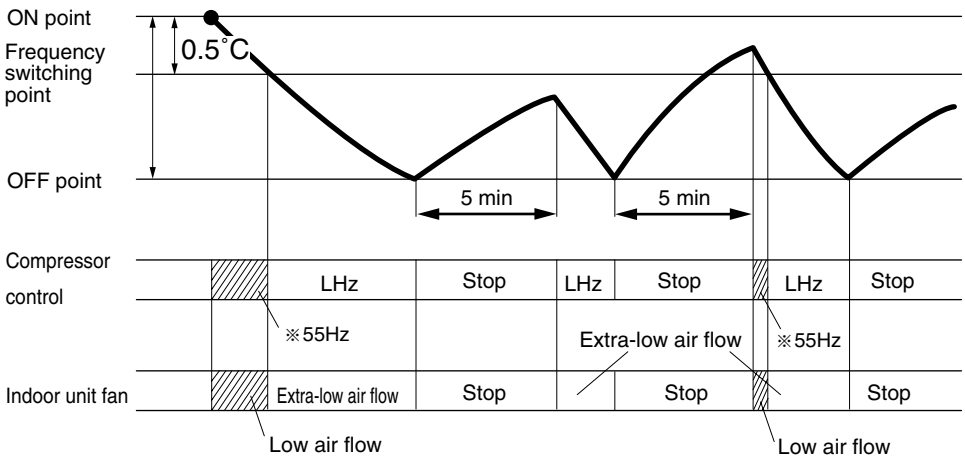
1.4 Programme Dry Function

Programme dry function removes humidity while preventing the room temperature from lowering.
Since the microcomputer controls both the temperature and air flow volume, the temperature adjustment and fan adjustment buttons are inoperable in this mode.

In Case of Inverter Units

The microcomputer automatically sets the temperature and fan settings. The difference between the room temperature at startup and the temperature set by the microcomputer is divided into two zones. Then, the unit operates in the dry mode with an appropriate capacity for each zone to maintain the temperature and humidity at a comfortable level.

Room temperature at startup	Temperature (ON point) at which operation starts	Frequency switching point	Temperature difference for operation stop
24°C	Room temperature at startup	0.5°C	1.5°C
18°C	18°C		1.0°C
17°C		—	



LHz indicates low frequency. Item marked with varies depending on models.

(R1359)

1.5 Automatic Operation

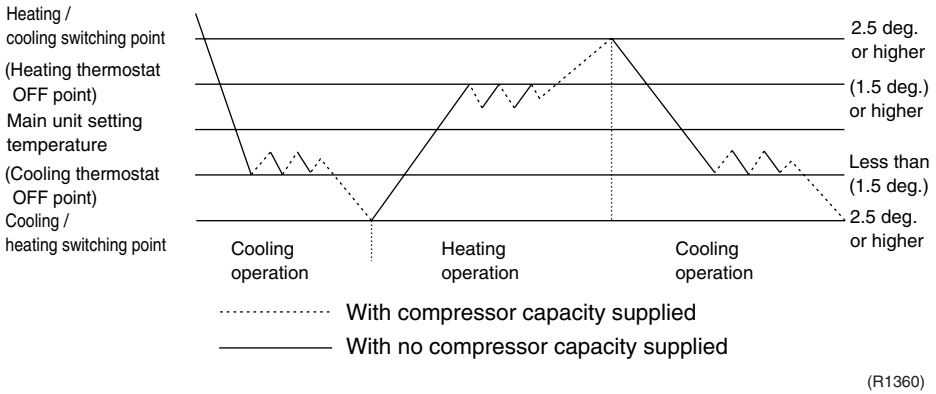
Automatic Cooling / Heating Function (Heat Pump Only)

When the AUTO mode is selected with the remote controller, the microcomputer automatically determines the operation mode from cooling and heating according to the room temperature and setting temperature at the time of the operation startup, and automatically operates in that mode.

The unit automatically switches the operation mode to cooling or heating to maintain the room temperature at the main unit setting temperature.

Detailed Explanation of the Function

1. Remote controller setting temperature is set as automatic cooling / heating setting temperature (18 to 30°C).
2. Main unit setting temperature equals remote controller setting temperature plus correction value (correction value / cooling: 0 deg, heating: 2 deg.).
3. Operation ON / OFF point and mode switching point are as follows.
   ① Heating → Cooling switching point:
   Room temperature ≥ Main unit setting temperature +2.5 deg.
   ② Cooling → Heating switching point:
   Room temperature < Main unit setting temperature –2.5 deg.
   ③ Thermostat ON / OFF point is the same as the ON / OFF point of cooling or heating operation.
4. During initial operation
   Room temperature ≥ Remote controller setting temperature: Cooling operation
   Room temperature < Remote controller setting temperature: Heating operation



(R1360)

1.6 Thermostat Control

Thermostat control is based on the difference between the room temperature and the setpoint.

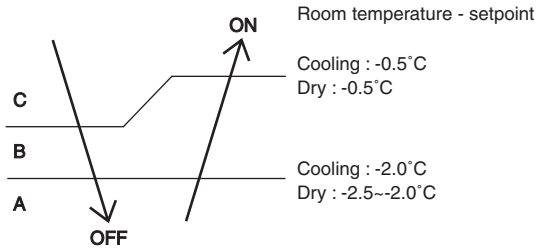
Thermostat OFF Condition

- The temperature difference is in the zone A.

Thermostat ON Condition

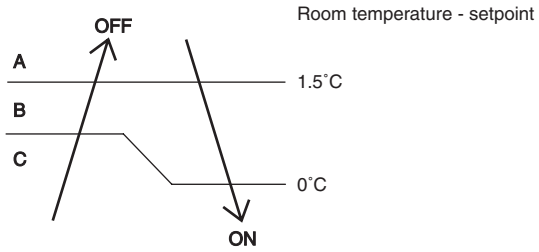
- The temperature difference is above the zone C after being in the zone A.
- The system resumes from defrost control in any zones except A.
- The operation turns on in any zones except A.
- The monitoring time has passed while the temperature difference is in the zone B. (Cooling / Dry : 10 minutes, Heating : 10 seconds)

Cooling / Dry



(R4668)

Heating



(R4669)

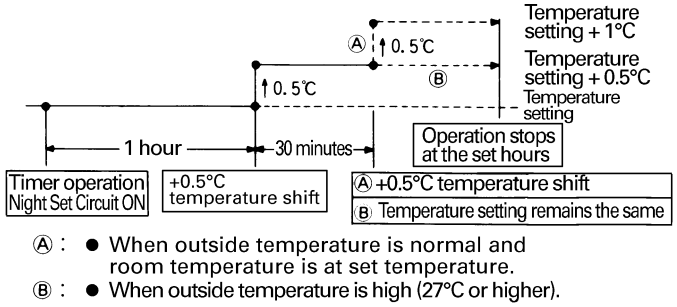
1.7 Night Set Mode

When the OFF timer is set, the Night Set circuit automatically activates.
The Night Set circuit maintains the airflow setting made by users.

The Night Set Circuit

The Night Set circuit continues heating or cooling the room at the set temperature for the first one hour, then automatically raises the temperature setting slightly in the case of cooling, or lowers it slightly in the case of heating, for economical operations. This prevents excessive heating in winter and excessive cooling in summer to ensure comfortable sleeping conditions, and also conserves electricity.

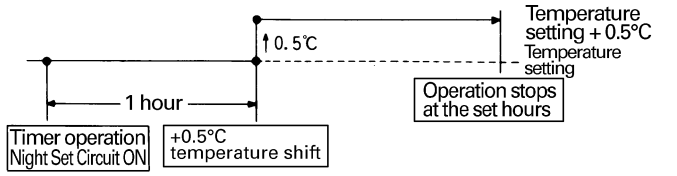
Cooling Operation



Ⓐ : ● When outside temperature is normal and room temperature is at set temperature.
Ⓑ : ● When outside temperature is high (27°C or higher).

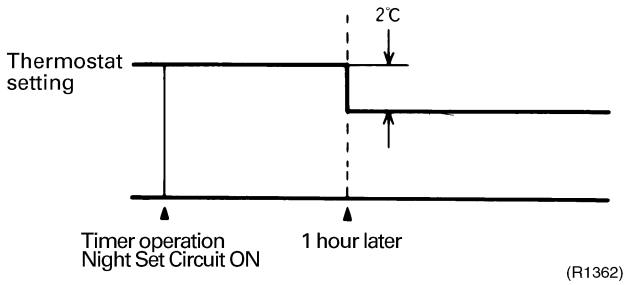
(R1361)

In case of FTK(X)S20-35D and CTK(X)S50D, the temperature rises once.



(R4421)

Heating Operation



(R1362)

1.8 ECONO Mode

Outline

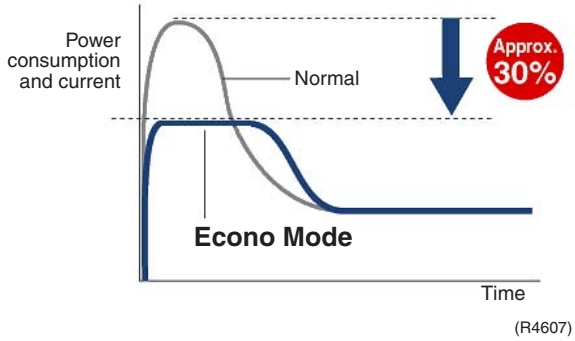
FTK(X)S20-35D, CTK(X)S50D

The "ECONO mode" reduces the maximum operating current and power consumption by approx. 30% during start up etc..

This mode is particularly convenient for energy-saving-oriented users. It is also a major bonus for those whose breaker capacities do not allow the use of multiple electrical devices and air conditioners.

It is easily activated from the wireless remote controller by pushing the ECONO button.

- When this function is ON, the maximum capacity is also down. (Approx. 20%)
- This function can only be set when the unit is running. Pressing the operation stop button causes the settings to be canceled.
- This function and POWERFUL operation cannot be used at the same time. The latest command has the priority.



Details

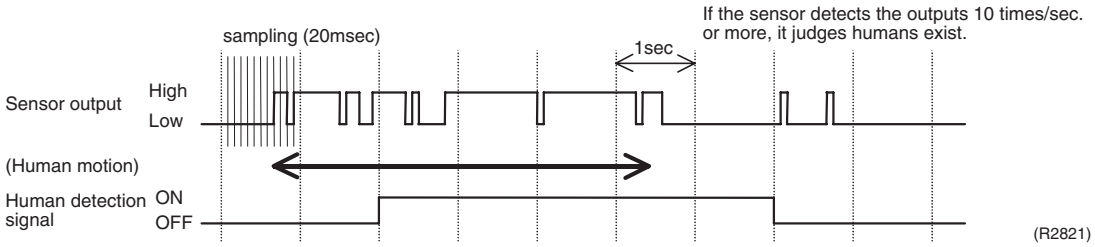
- ECONO mode can be activated while the unit is running. The remote controller can send the ECONO command when the unit is in COOL, HEAT, DRY, or AUTO operation.
- When the ECONO command is valid, the upper limit of frequency is restricted.

1.9 INTELLIGENT EYE

This is the function that detects existence of humans in the room by a human motion sensor (INTELLIGENT EYE) and reduces the capacity when there is no human in the room in order to save electricity.

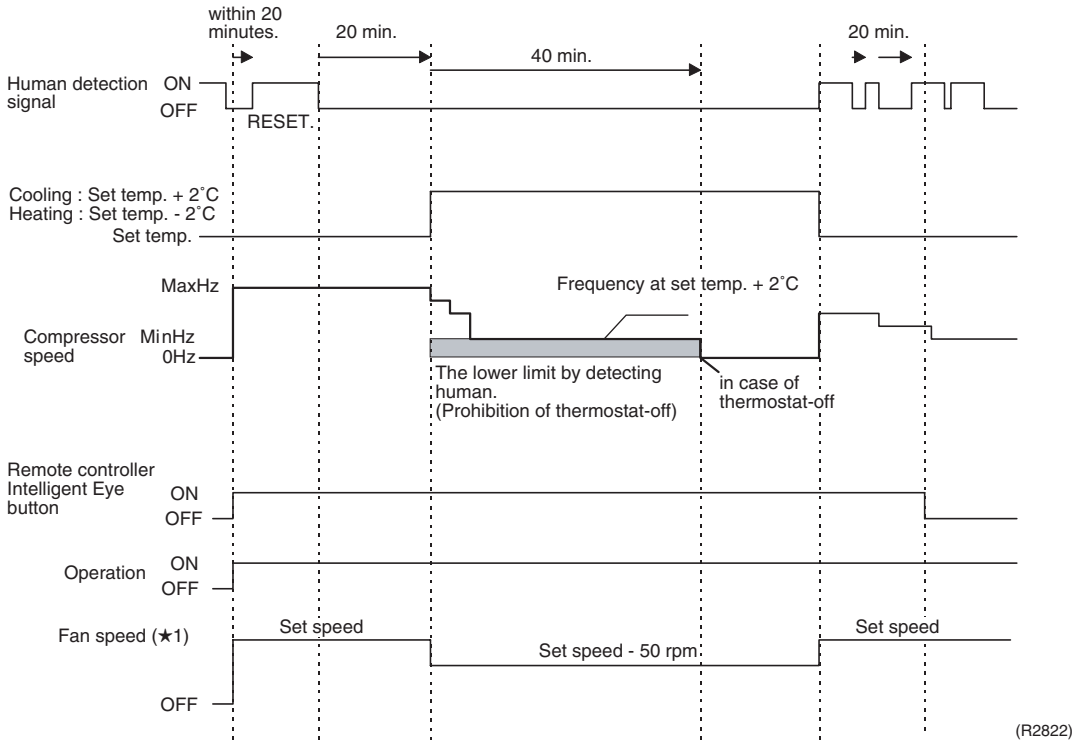
Processing

1. Detection method by Intelligent Eye



- This sensor detects human motion by receiving infrared rays and displays the pulse wave output.
- A microcomputer in an indoor unit carries out a sampling every 20 msec. and if it detects 10 cycles of the wave in one second in total (corresponding to 20msec.× 10 = 100msec.), it judges human is in the room as the motion signal is ON.

2. The motions (for example: in cooling)



- When a microcomputer doesn't have a signal from the sensor in 20 minutes, it judges that nobody is in the room and operates the unit in temperature sifted 2°C from the set temperature. (Cooling : 2°C higher, Dry: 1°C higher and Auto : according to the operation mode at that time.)

★1 In case of Fan mode, the fan speed reduces by 50 rpm.

- Since the set temperature is shifted by 2°C higher for 40 minutes, compressor speed becomes low and can realize energy saving operation. But as thermostat is prone to be off by the fact that the set temperature has been shifted, the thermostat-off action is prohibited in 40 minutes so as to prevent this phenomena.
  After this 40 minutes, the prohibition of the thermostat-off is cancelled and it can realize the conditions to conduct thermostat-off depending on the room temperature. In or after this forty minutes, if the sensor detects human motion detection signal, it let the set temperature and the fan speed return to the original set point, keeping a normal operation.

Others

- The dry operation can't command the setting temperature with a remote controller, but internally the set temperature is shifted by 1°C.

1.10 HOME LEAVE Operation

Outline

In order to respond to the customer's need for immediate heating and cooling of the room after returning home or for house care, a measure to switch the temperature and air volume from that for normal time over to outing time by one touch is provided. (This function responds also to the need for keeping up with weak cooling or heating.)
This time, we seek for simplicity of operation by providing the special temperature and air volume control for outing to be set by the exclusive button.

Detail of the Control

1. Start of Function

The function starts when the [HOME LEAVE] button is pressed in cooling mode or heating mode (including stopping and powerful operation). If this button is pressed while the operation is stopped, the function becomes effective when the operation is started. If this button is pressed in powerful operation, the powerful operation is reset and this function becomes effective.

- The [HOME LEAVE] button is ineffective in dry mode and fan mode.

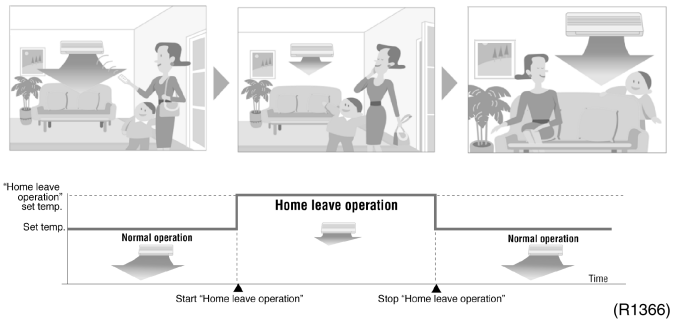
2. Details of Function

A mark representing [HOME LEAVE] is indicated on the liquid crystal display of the remote controller. The indoor unit is operated according to the set temperature and air volume for HOME LEAVE which were pre-set in the memory of the remote controller.
The LED (Red) of indoor unit representing [HOME LEAVE] lights up. (It goes out when the operation is stopped.)

3. End of Function

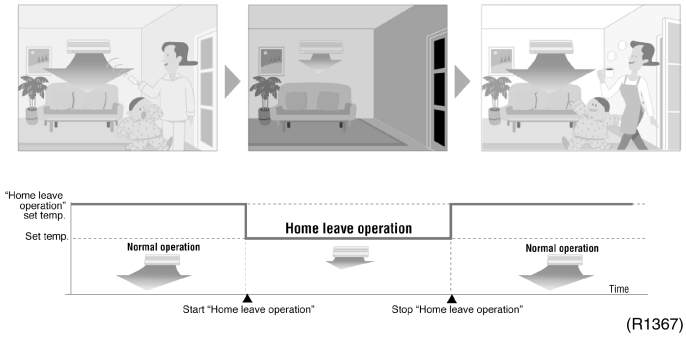
The function ends when the [HOME LEAVE] button is pressed again during [HOME LEAVE] operation or when the powerful operation button is pressed.

Scene <cooling>



(R1366)

Scene <Heating>



(R1367)

Others

The set temperature and set air volume are memorized in the remote controller. When the remote controller is reset due to replacement of battery, it is necessary to set the temperature and air volume again for [HOME LEAVE].

1.11 Inverter POWERFUL Operation

Outline

In order to exploit the cooling and heating capacity to full extent, operate the air conditioner by increasing the indoor fan rotating speed and the compressor frequency.

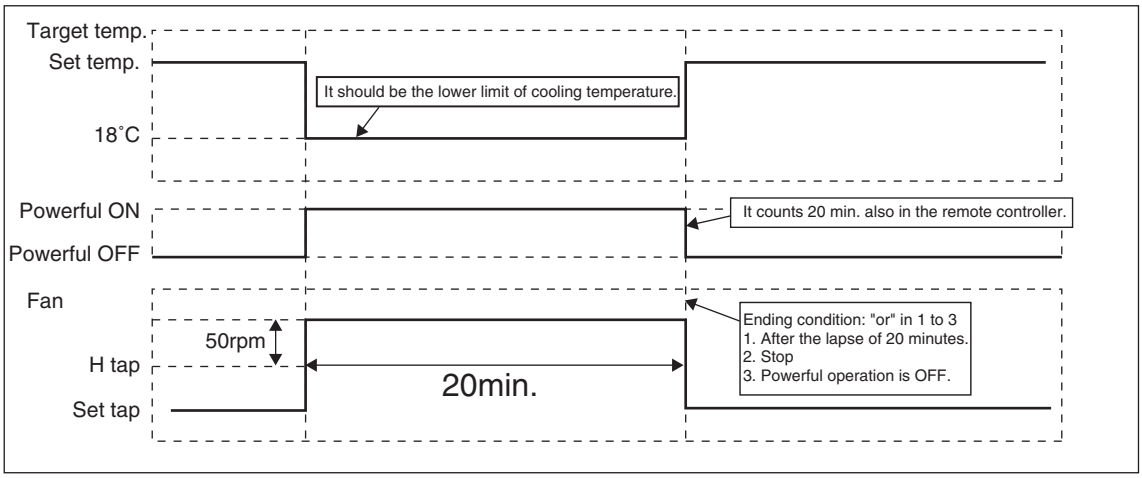
Details of the Control

When POWERFUL button is pushed in each operation mode, the fan speed / setting temperature will be converted to the following states in a period of twenty minutes.

In case of FTK(X)S20-35D, CTK(X)S50D

Operation mode	Fan speed	Target set temperature
COOL	H tap + 50 rpm	18°C
DRY	Dry rotating speed + 50 rpm	Normally targeted temperature in dry operation; Approx. –2°C
HEAT	H tap + 50 rpm	30°C
FAN	H tap + 50 rpm	—
AUTO	Same as cooling / heating in Powerful operation	The target is kept unchanged

Ex.) : Powerful operation in cooling mode.



(R4560)

1.12 Other Functions

1.12.1 Hot Start Function

Heat Pump Only

In order to prevent the cold air blast that normally comes when heating is started, the temperature of the heat exchanger of the indoor unit is detected, and either the air flow is stopped or is made very weak thereby carrying out comfortable heating of the room.
*The cold air blast is also prevented using a similar control when the defrosting operation is started or when the thermostat gets turned ON.

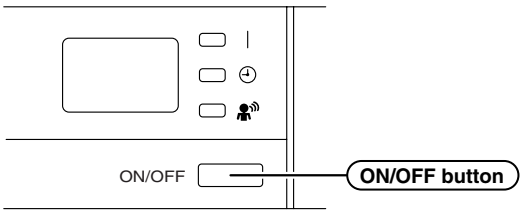
1.12.2 Signal Receiving Sign

When the indoor unit receives a signal from the remote controller, the unit emits a signal receiving sound.

1.12.3 ON/OFF Button on Indoor Unit

An ON/OFF button is provided on the front panel of the unit. Use this button when the remote controller is missing or if its battery has run out.
Every press of the button switches from ON to OFF or from OFF to ON.

In case of FTK(X)S20-35D, CTK(X)S50D



- Push this button once to start operation. Push once again to stop it.
- This button is useful when the remote controller is missing.
- The operation mode refers to the following table.

	Mode	Temperature setting	Air flow rate
Cooling Only	COOL	22°C	AUTO
Heat Pump	AUTO	25°C	AUTO

- In the case of multi system operation, there are times when the unit does not activate with this button.

1.12.4 Titanium Apatite Photocatalytic Air-Purifying Filter

This filter combines the Air Purifying Filter and Titanium Apatite Photocatalytic Deodorizing Filter in a single highly effective unit. The filter traps microscopic particles, decompose odours and even deactivates bacteria and viruses. It lasts for three years without replacement if washed about once every six months.

1.12.5 Photocatalytic Deodorizing Filter

Photocatalytic Deodorizing Filter demonstrates powerful oxidation characteristics when subjected to harmless ultraviolet light. Photocatalytic deodorizing power is recovered simply by exposing the filter to the sun for 6 hours once every 6 months.

1.12.6 Air-Purifying Filter

A double structure made up of a bacteriostatic filter and an Air-Purifying Filter traps dust, mildew, mites, tobacco smoke, and allergy-causing pollen. Replace the Air-Purifying Filter once every 3 months.

1.12.7 Air Purifying Filter with Photocatalytic Deodorizing Function

This filter incorporates the benefits the Air Purifying Filter and Photocatalytic Deodorizing Filter in a single unit. Combining the two filters in this way increases the active surface area of the new filter. This larger surface area allows the filter to effectively trap microscopic particles, decompose odours and deactivate bacteria and viruses even for the high volume of air required to air-condition large living rooms. The filter can be used for approximately 3 years if periodic maintenance is performed.

1.12.8 Mold Proof Air Filter

The filter net is treated with mold resisting agent TBZ (harmless, colorless, and odorless). Due to this treatment, the amount of mold growth is much smaller than that of normal filters.

1.12.9 Self-Diagnosis Digital Display

The microcomputer continuously monitors main operating conditions of the indoor unit, outdoor unit and the entire system. When an abnormality occur, the LCD remote controller displays error code. These indications allow prompt maintenance operations.

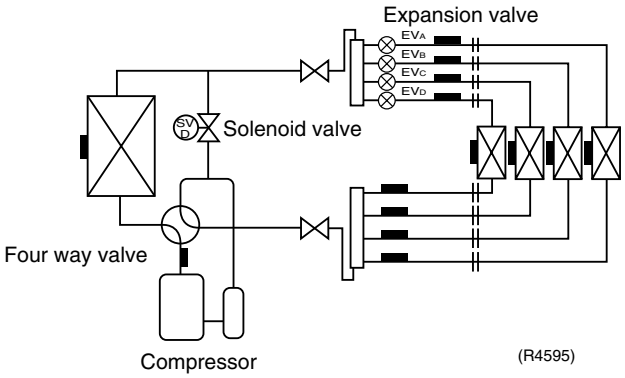
1.12.10 Auto-restart Function

Even if a power failure (including one for just a moment) occurs during the operation, the operation restarts in the condition before power failure automatically when power is restored. (Note) It takes 3 minutes to restart the operation because the 3 minute stand-by function is activated.

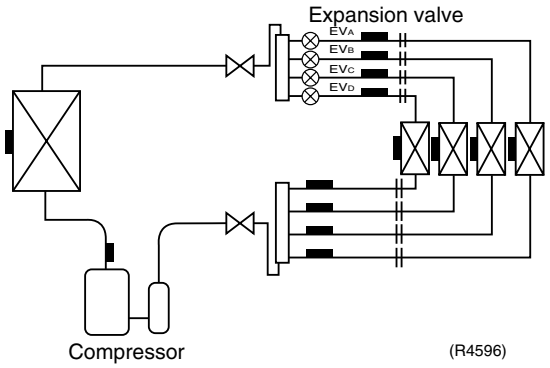
2. Function of Main Structural Parts

2.1 Main Structural Parts

Heat Pump Model



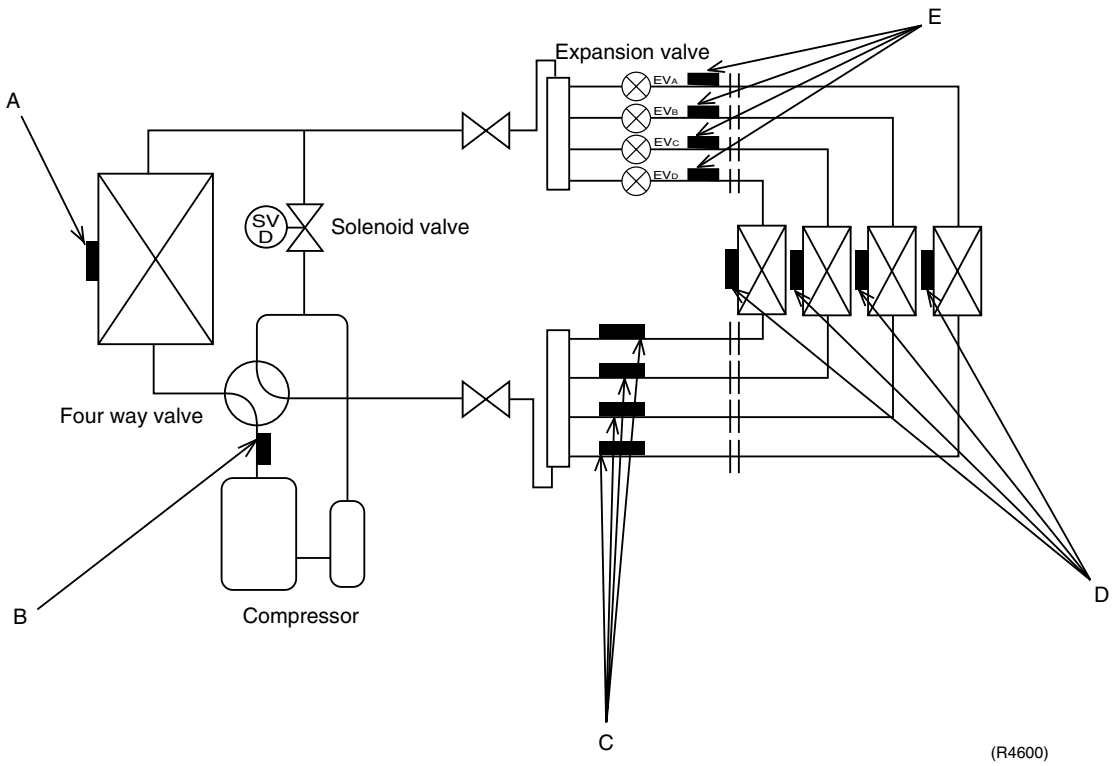
Cooling Only Model



Note: Expansion Valve : In Case of 2MK(X).....EVA-B, 3MK(X).....EVA-C, 4MK(X).....EVA-D

2.2 Function of Thermistor

2.2.1 Heat Pump Model



A Outdoor Heat Exchanger Thermistor (DCB)

1. The outdoor heat exchanger thermistor is used for controlling target discharge temperature. The system sets a target discharge temperature according to the outdoor and indoor heat exchanger temperature, and controls the electronic expansion valve opening so that the target discharge temperature can be obtained.
2. The outdoor heat exchanger thermistor is used for detecting disconnection of the discharge thermistor when cooling.
   When the discharge pipe temperature becomes lower than the outdoor heat exchanger temperature, the discharge pipe thermistor is judged as disconnected.

B Discharge Pipe Thermistor (DOT)

1. The discharge pipe thermistor is used for controlling temperature of the discharge pipe. If the temperature of discharge pipe (used in place of the inner temperature of the compressor) rises abnormally, the operating frequency drops or the operation halts.
2. The discharge pipe thermistor is used for detecting disconnection of the discharge thermistor.

C Gas Pipe Thermistor (DGN)

1. In cooling, the gas pipe thermistors are used for gas pipe isothermal control.
   The system controls electronic expansion valve opening so that gas pipe temperature in each room becomes equal.

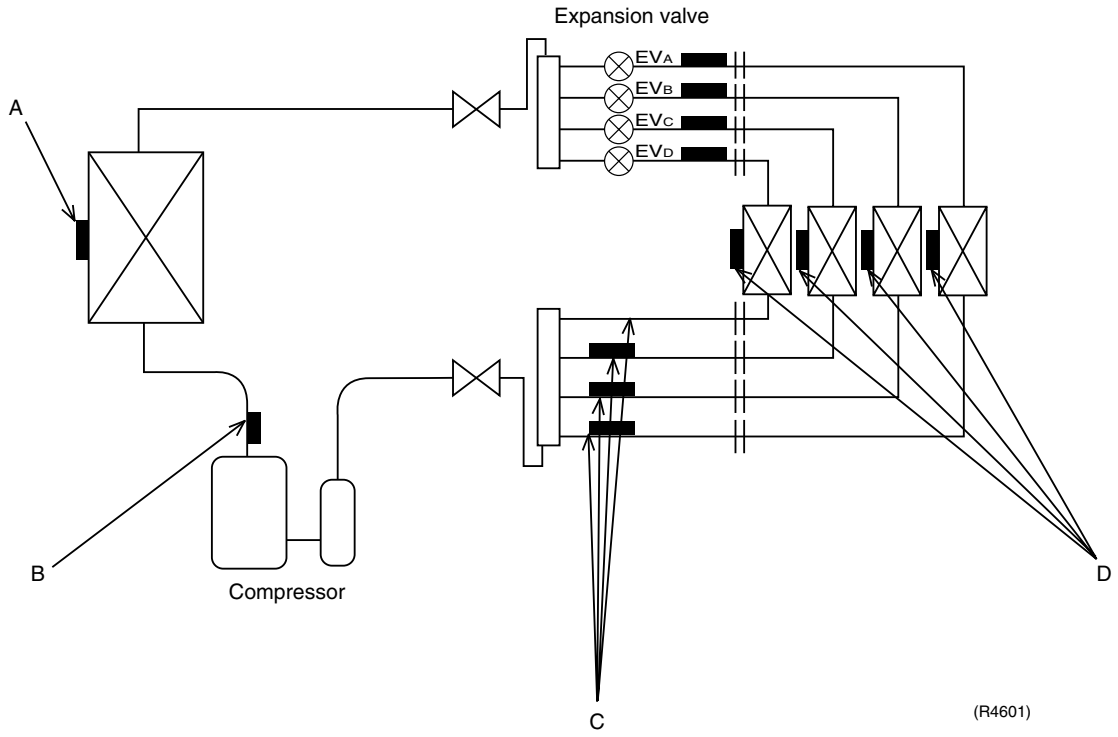
D Indoor Heat Exchanger Thermistor (DCN)

1. The indoor heat exchanger thermistors are used for controlling target discharge temperature.
   The system sets a target discharge pipe temperature according to the outdoor and indoor heat exchanger temperature, and controls the electronic expansion valve opening so that the target discharge temperature can be obtained.
2. The indoor heat exchanger thermistors are used for preventing freezing.
   During the cooling operation, if the temperature drops abnormally, the operating frequency becomes lower, then the operation halts.
3. The indoor heat exchanger thermistors are used for anti-icing control.
   During the cooling operation, if the heat exchanger temperature in the room where operation is halted becomes -1°C, or if the room temperature - heat exchanger temperature in the room where operation is halted becomes ≥10°C, it is assumed as icing.
4. During heating: the indoor heat exchanger thermistors are used for detecting disconnection of the discharge pipe thermistor.
   When the discharge pipe temperature becomes lower than the indoor heat exchanger temperature, the discharge pipe thermistor is judged as disconnected.
5. The indoor heat exchanger thermistors are used for detecting incorrect wiring.
   During checking incorrect wiring, refrigerant is passed in order from the port A to detect a heat exchanger temperature, and then wiring and piping will be checked.
6. The indoor heat exchanger thermistors are used for sub-cooling control.
   The actual sub-cooling is calculated from the liquid pipe temperature and the heat exchanger temperature. The system controls the electronic expansion valve opening to reach the target sub-cooling.
7. The indoor heat exchanger thermistors are used for heating isothermal control of heat exchanger.
   When heating: if the difference in temperature of each room is greater than 8°C, the electronic expansion valve of the room in which the temperature is higher is opened.

E Liquid Pipe Thermistor (DLN)

1. In heating, the liquid pipe thermistors are used for sub-cooling control.
   The system calculates the actual sub-cooling with the liquid pipe temperature and the maximum heat exchanger temperature among all rooms, and controls the opening of the electronic expansion valve to reach the target sub-cooling.

2.2.2 Cooling Only Model



A Outdoor Heat Exchanger Thermistor (DCB)

1. The outdoor heat exchanger thermistor is used for controlling target discharge temperature. The system sets a target discharge temperature according to the outdoor and indoor heat exchanger temperature, and controls the electronic expansion valve opening so that the target discharge temperature can be obtained.
2. The outdoor heat exchanger thermistor is used for detecting disconnection of the discharge thermistor when cooling.
   When the discharge pipe temperature becomes lower than the outdoor heat exchanger temperature, the discharge pipe thermistor is judged as disconnected.

B Discharge Pipe Thermistor (DOT)

1. The discharge pipe thermistor is used for controlling temperature of the discharge pipe. If the temperature of discharge pipe (used in place of the inner temperature of the compressor) rises abnormally, the operating frequency drops or the operation halts.
2. The discharge pipe thermistor is used for detecting disconnection of the discharge thermistor.

C Gas Pipe Thermistor (DGN)

1. In cooling, the gas pipe thermistors are used for gas pipe isothermal control. The system controls electronic expansion valve opening so that gas pipe temperature in each room becomes equal.

D Indoor Heat Exchanger Thermistor (DCN)

1. The indoor heat exchanger thermistors are used for controlling target discharge temperature.
   The system sets a target discharge pipe temperature according to the outdoor and indoor heat exchanger temperature, and controls the electronic expansion valve opening so that the target discharge temperature can be obtained.
2. The indoor heat exchanger thermistors are used for preventing freezing.
   During the cooling operation, if the temperature drops abnormally, the operating frequency becomes lower, then the operation halts.
3. The indoor heat exchanger thermistors are used for anti-icing control.
   During the cooling operation, if the heat exchanger temperature in the room where operation is halted becomes -1°C, or if the room temperature - heat exchanger temperature in the room where operation is halted becomes ≥10°C, it is assumed as icing.
4. The indoor heat exchanger thermistors are used for detecting incorrect wiring.
   During checking incorrect wiring, refrigerant is passed in order from the port A to detect a heat exchanger temperature, and then wiring and piping will be checked.

3. Control Specification

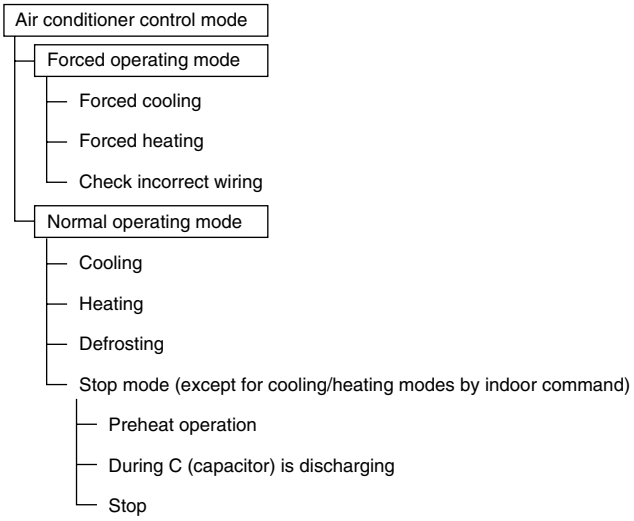
3.1 Mode Hierarchy

Outline

There are two modes; the mode selected in user's place (normal air conditioning mode) and forced operation mode for installation and providing service.

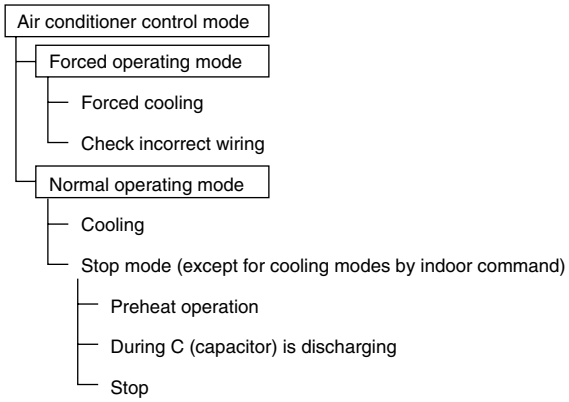
Detail

1. **For heat pump model**
   There are following modes; stop, cooling (includes drying), heating (include defrosting)



(R1373)

2. **For cooling only model**
   There are following models; stop and cooling (including drying).



(R1374)

Note: Unless specified otherwise, an indoor dry operation command must be regarded as cooling operation. An indoor fan operation command cannot be made in a multiple indoor unit. (A forced fan command to the indoor unit from the outdoor unit must be made during forced operation.)

Determine Operating Mode

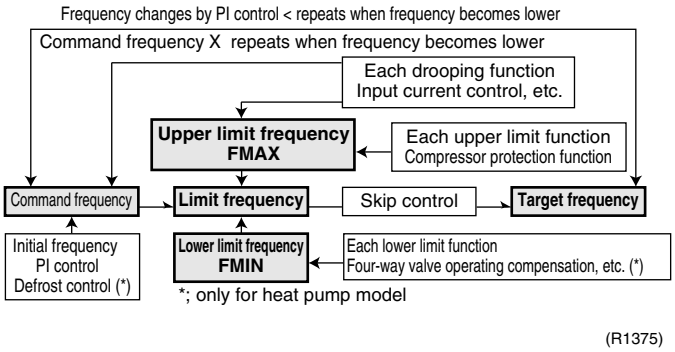
Judge the operating mode command set by each room in accordance with the instructing procedure, and determine the operating mode of the system.
The following procedure will be taken as the modes conflict with each other.
*1.The system will follow the mode determined first. (First-push, first-set)
*2.For the rooms set with different mode, select stand-by mode. (Operation lamp flashes)

3.2 Frequency Control

Outline

Frequency that corresponds to each room's capacity will be determined according to the difference in the temperature of each room and the temperature that is set by the remote controller.
The function is explained as follows.

1. How to determine frequency.
2. Frequency command from an indoor unit. (The difference between a room temperature and the temperature set by the remote controller.)
3. Frequency command from an indoor unit. (The ranked capacity of the operating room).
4. Frequency initial setting.
5. PI control.



(R1375)

Detail

How to Determine Frequency
The compressor's frequency will finally be determined by taking the following steps.

For Heat Pump Model

1. Determine command frequency

- Command frequency will be determined in the following order of priority.

1.1 Limiting frequency by drooping function

- Input current, discharge pipes, low Hz high pressure limit, peak cutting, freeze-up protection, dew prevention, fin thermistor temperature.

1.2 Limiting defrost control time
1.3 Forced cooling / heating
1.4 Indoor frequency command

2. Determine upper limit frequency

- Set a minimum value as an upper limit frequency among the frequency upper limits of the following functions:
  Compressor protection, input current, discharge pipes, Low Hz high pressure, peak cutting, freeze-up protection, defrost.

3. Determine lower limit frequency

- Set a maximum value as an lower limit frequency among the frequency lower limits of the following functions:
  Four way valve operating compensation, draft prevention, pressure difference upkeep.

4. Determine prohibited frequency

- There is a certain prohibited frequency such as a power supply frequency.

For Cooling Only Model

1. Determine command frequency

- Command frequency will be determined in the following order of priority.

1.1 Limiting frequency by drooping function
Input current, discharge pipes, freeze-up protection, dew prevention, fin thermistor temperature.
1.2 Indoor frequency command

2. Determine upper limit frequency

- Set a minimum value as an upper limit frequency among the frequency upper limits of the following functions:
  Compressor protection, input current, discharge pipes, freeze-up protection, dew prevention, fin thermistor temperature.

3. Determine lower limit frequency

- Set a maximum value as an lower limit frequency among the frequency lower limits of the following functions:
  Pressure difference upkeep.

4. Determine prohibited frequency

- There is a certain prohibited frequency such as a power supply frequency.

Indoor Frequency Command (ΔD signal)

The difference between a room temperature and the temperature set by the remote controller will be taken as the "ΔD signal" and is used for frequency command.

Temperature difference	ΔD signal	Temperature difference	ΔD signal	Temperature difference	ΔD signal	Temperature difference	ΔD signal
0	∗Th OFF	2.0	4	4.0	8	6.0	C
0.5	1	2.5	5	4.5	9	6.5	D
1.0	2	3.0	6	5.0	A	7.0	E
1.5	3	3.5	7	5.5	B	7.5	F

∗Th OFF = Thermostat OFF

Indoor Unit Capacity (S value)

The capacity of the indoor unit is a "S" value and is used for frequency command.

Capacity	S value	Capacity	S value
2.5 kW	25	5.0 kW	50
3.5 kW	35	6.0 kW	60

Frequency Initial Setting

<Outline>

When starting the compressor, or when conditions are varied due to the change of the operating room, the frequency must be initialized according to the total of a maximum ΔD value of each room and a total value of Q (ΣQ) of the operating room (the room in which the thermostat is set to ON).
Q value: Indoor unit output determined from indoor unit volume, air flow rate and other factors.

PI Control (Determine Frequency Up / Down by ΔD Signal)

1. P control
Calculate a total of the ΔD value in each sampling time (20 seconds), and adjust the frequency according to its difference from the frequency previously calculated.

2. I control
If the operating frequency is not change more than a certain fixed time, adjust the frequency up and down according to the ΣΔD value, obtaining the fixed ΣΔD value.
When the ΣΔD value is small...lower the frequency.
When the ΣΔD value is large...increase the frequency.

3. Limit of frequency variation width
When the difference between input current and input current drooping value is less than 1.5 A, the frequency increase width must be limited.

4. Frequency management when other controls are functioning

- When each frequency is drooping;
  Frequency management is carried out only when the frequency droops.
- For limiting lower limit
  Frequency management is carried out only when the frequency rises.

5. Upper and lower limit of frequency by PI control
The frequency upper and lower limits are set depending on the total of S values of a room. When low noise commands come from the indoor unit more than one room or when outdoor unit low noise or quiet commands come from all the rooms, the upper limit frequency must be lowered than the usual setting.

3.3 Controls at Mode Changing / Start-up

3.3.1 Preheating Operation

Outline

Operate the inverter in the open phase operation with the conditions including the preheating command from the indoor, the outdoor air temperature and discharge pipe temperature.

Detail

Preheating ON Condition

- When outdoor air temperature is below 10.5°C and discharge pipe temperature is below 10.5°C, inverter in open phase operation starts.

OFF Condition

- When outdoor air temperature is higher than 12°C or discharge pipe temperature is higher than 12°C, inverter in open phase operation stops.

3.3.2 Four Way Valve Switching

Outline of heating operation

Heat Pump Only

During the heating operation current must be conducted and during cooling and defrosting current must not be conducted. In order to eliminate the switching sound (as the four way valve coil switches from ON to OFF) when the heating is stopped, the delay switch of the four way valve must be carried out after the operation stopped.

Detail

The OFF delay of four way valve
Energize the coil for 150 sec after unit operation is stopped.

3.3.3 Four Way Valve Operation Compensation

Outline

Heat Pump Only

At the beginning of the operation as the four way valve is switched, acquire the differential pressure required for activating the four way valve by having output the operating frequency, which is more than a certain fixed frequency, for a certain fixed time.

Detail

Staring Conditions

1. When starting compressor for heating.
2. When the operating mode changes from the previous time.
3. When starting compressor for rushing defrosting or resetting.
4. When starting compressor for the first time after the reset with the power is ON.
   Set the lower limit frequency to 55 (model by model) Hz for 70 seconds with the OR conditions with 1 through 4 above.

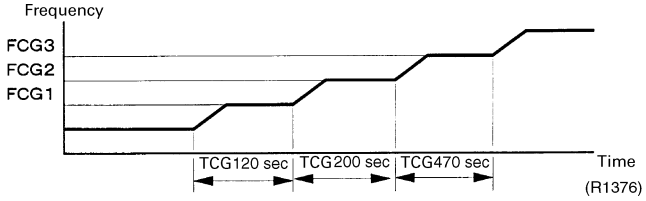
3.3.4 3 Minutes Stand-by

Prohibit to turn ON the compressor for 3 minutes after turning it off.
(Except when defrosting. (Only for Heat Pump Model).)

3.3.5 Compressor Protection Function

When turning the compressor from OFF to ON, the upper limit of frequency must be set as follows. (The function must not be used when defrosting (only for heat pump model).)

	2YC32	2YC45
FCG 3	85	80
FCG 2	70	65
FCG 1	55	55



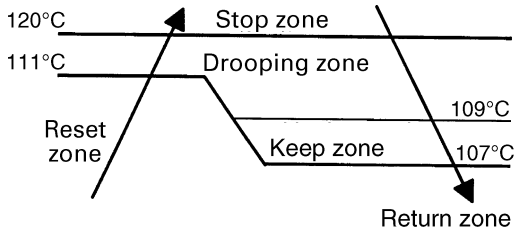
3.4 Discharge Pipe Control

Outline

The discharge pipe temperature is used as the compressor's internal temperature. If the discharge pipe temperature rises above a certain level, the operating frequency upper limit is set to keep this temperature from going up further.

Detail

Zones (typical value)



(R4597)

Management within the Zone

Zone	Control contents
Stop zone	When the temperature reaches the stop zone, stop the compressor and correct abnormality.
Drooping zone	Start the timer, and the frequency will be drooping.
Keep zone	Keep the frequency upper limit.
Return / Reset zone	Cancel the frequency upper limit.

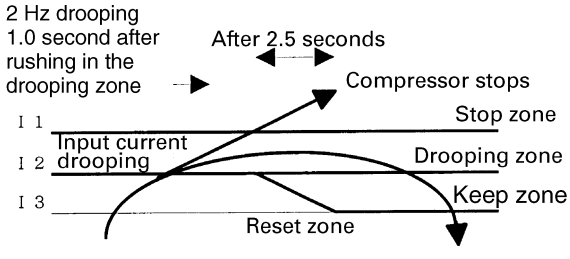
3.5 Input Current Control

Outline

Detect an input current by the CT during the compressor is running, and set the frequency upper limit from such input current.
In case of heat pump model, this control is the upper limit control function of the frequency which takes priority of the lower limit of four way valve activating compensation.

Detail

The frequency control will be made within the following zones.



(R4598)

When a “stop current” continues for 2.5 seconds after rushing on the stop zone, the compressor operation stops.
If a “drooping current” is continues for 1.0 second after rushing on the drooping zone, the frequency will be 2 Hz drooping.
Repeating the above drooping continues until the current rushes on the drooping zone without change.
In the unchanged zone, the frequency limit will remain.
In the return / reset zone, the frequency limit will be cancelled.

Limitation of current drooping and stop value according to the outdoor air temperature

1. In case the operation mode is cooling
- The current droops when outdoor air temperature becomes higher than a certain level (model by model).
2. In case the operation mode is heating (only for heat pump model)
- The current droops when outdoor air temperature becomes higher than a certain level (model by model).

3.6 Freeze-up Protection Control

Outline

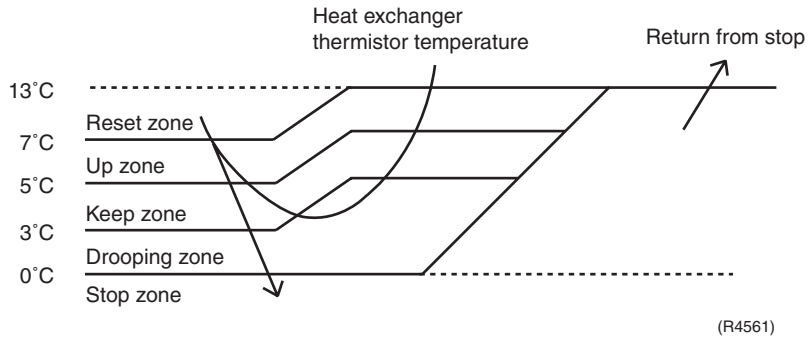
During cooling operation, the signals being sent from the indoor unit allow the operating frequency limitation and then prevent freezing of the indoor heat exchanger. (The signal from the indoor unit must be divided into the zones as the followings.

Detail

Conditions for Start Controlling

Judge the controlling start with the indoor heat exchanger temperature after 2 sec from operation start and after 30 sec from changing number of operation room.

Control in Each Zone



3.7 Heating Peak-cut Control

Outline

Heat Pump Only

During heating operation, the signals being sent form the indoor unit allow the operating frequency limitation and prevent abnormal high pressure. (The signal from the indoor unit must be divided as follows.)

Detail

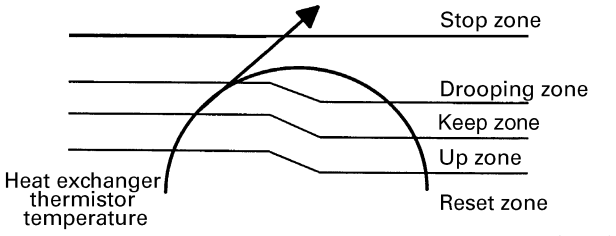
Conditions for Start Controlling

Judge the controlling start with the indoor heat exchanger temperature after 2 min from operation start and after A sec from changing number of operation room.

Control in Each Zone

The maximum value of heat exchange intermediate temperature of each indoor unit controls the following (excluding stopped rooms).

	A
When increase	30
When decrease	2



3.8 Fan Control

Outline

Fan control is carried out with following functions.

1. Fan ON control for electric component cooling fan
2. Fan control when defrosting
3. Fan OFF delay when stopped
4. ON/OFF control when cooling operation
5. Fan control when the number of heating rooms decreases
6. Fan control when forced operation
7. Fan control in indoor / outdoor silent operation
8. Fan control for pressure difference upkeep

Detail

Fan OFF Control when Stopped

- Fan OFF delay for 60 seconds must be made when the compressor is stopped.

Fan control when the number of heating room decreases (Only for Heat Pump Model)

When the outdoor air temperature is more than 10°C, the fan must be turned OFF for 30 seconds.

Tap Control in Indoor / Outdoor Unit Silent Operation

1. When Cooling Operation
   When the outdoor air temperature is less than 37°C, the fan tap must be set to L.
2. When Heating Operation
   When the outdoor air temperature is more than 4°C, the fan tap must be turned to L (only for heat pump model).

3.9 Liquid Compression Protection Function 2

Outline

In order to obtain the dependability of the compressor, the compressor must be stopped according to the conditions of the temperature of the outdoor air and outdoor heat exchanger.

Detail

Heat Pump Model

- Operation stop depending on the outdoor air temperature

Compressor operation turns OFF under the conditions that the system is in cooling operation and outdoor air temperature is below –10°C.

Cooling Only Model

- Operation stops depending on the outdoor air temperature.

Compressor operation turns OFF under the condition that outdoor air temperature is below –10°C.

3.10 Defrost Control

Outline

Heat Pump Only

Defrosting is carried out by the cooling cycle (reverse cycle). The defrosting time or outdoor heat exchanger temperature must be more than its fixed value when finishing.

Detail

Conditions for Starting Defrost

The starting conditions must be made with the outdoor air temperature and heat exchanger temperature. Under the conditions that the system is in heating operation, 6 minutes after the compressor is started and more than 47 minutes of accumulated time pass since the start of the operation or ending the defrosting.

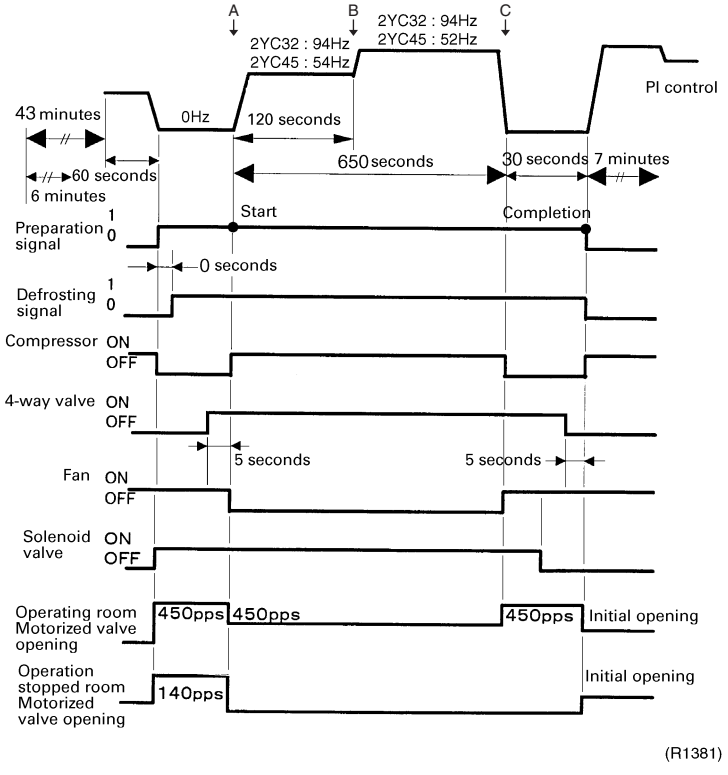
Conditions for Canceling Defrost

The target heat exchanger temperature as the canceling condition is selected in the range of 4°C<Te<12°C according to the air temperature as the following formula.

The target heat exchanger temperature=–(45/65)×(ambient temperature)+14

The defrost operation surely operates in 120 seconds after the start. (A→B)
After then the defrost operation stops at the following conditions.

1. When the heat exchanger temperature reaches the target heat exchanger temperature. (B→C)
2. When 650 seconds have passed after the start even if the heat exchanger temperature does not reaches the target heat exchanger temperature. (C)



3.11 Low Hz High Pressure Limit

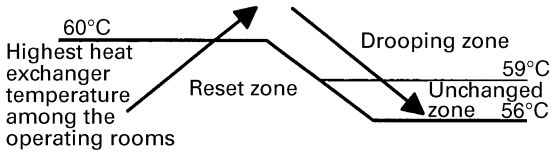
Outline

Heat Pump Only

Set the upper limit of high pressure in a low Hz zone. Set the upper limit of the indoor heat exchanger temperature by its operating frequency of Hz. Separate into three zones, reset zone, unchanged zone and drooping zone and the frequency control must be carried out in such zones.

Detail

Separate into Zones



(R1382)

Note: Drooping: The system stops 2 minutes after staying in the drooping zone.

3.12 Electronic Expansion Valve Control

Outline

The following items are included in the electronic expansion valve control.

Electronic expansion valve is fully closed

1. Electronic expansion valve is fully closed when turning on the power.
2. Pressure equalizing control

Room Distribution Control

1. Gas pipe isothermal control (distribution control in cooling)
2. SC control (only for heat pump model, distribution control in heating)

Open Control

1. Electronic expansion valve control when starting operation
2. Control when frequency changed
3. Control for defrosting (only for heat pump model)
4. Oil recover control
5. Control when a discharge pipe temperature is abnormally high
6. Control when the discharge pipe thermistor is disconnected
7. Control for indoor unit freeze-up protection

Feedback Control

1. Discharge pipe temperature control

Distribution control for each room

1. Liquid pipe temperature control (with all ports connected and all rooms being air-conditioned)
2. Liquid pipe temperature control for stopped rooms
3. Dew prevention function for indoor rotor

Detail

The followings are the examples of control which function in each mode by the electronic expansion valve control.

Operation pattern	○ : function × : not function	Gas pipe isothermal control	SC control (only for heat pump model)	Control when frequency changed	Control for abnormally high discharge pipe temperature	Oil recovery control	Indoor freeze-up protection control	Liquid pipe temperature control	Liquid pipe temperature control for stopped rooms	Dew prevention control for indoor rotor
When power is turned ON	Fully closed when power is turned ON	×	×	×	×	×	×	×	×	×
Cooling, 1 room operation	Open control when starting	×	×	×	○	○	○	×	×	×
	(Control of target discharge pipe temperature)	×	×	○	○	○	○	×	×	○
Cooling, 2 rooms operation to Cooling, 4 rooms operation	Control when the operating room is changed	×	×	×	○	○	○	×	×	○
	(Control of target discharge pipe temperature)	○	×	○	○	○	○	×	×	○
Stop	Pressure equalizing control	×	×	×	×	×	×	×	×	×
Heating, 1 room operation (only for heat pump model)	Open control when starting	×	×	×	○	×	×	×	×	×
	(Control of target discharge pipe temperature)	×	○ All rooms ×	○	○	×	×	○ All rooms ○	○ All rooms ×	×
Heating, 2 rooms operation to Heating, 4 rooms operation (only for heat pump model)	Control when the operating room is changed	×	×	×	○	×	×	×	×	×
	(Control of target discharge pipe temperature)	×	○ All rooms ×	○	○	×	×	○ All rooms ○	○ All rooms ×	×
Stop	(Defrost control FD=1) (only for heat pump model)	×	×	×	×	×	×	×	×	×
	Pressure equalizing control	×	×	×	×	×	×	×	×	×
Heating operation (only for heat pump model)	Open control when starting	×	×	×	○	×	×	×	×	×
Control of discharge pipe thermistor disconnection	Continue	×	○ All rooms ×	×	×	×	×	○ All rooms ○	○ All rooms ×	×
Stop	Pressure equalizing control	×	×	×	×	×	×	×	×	×

(R3056)

3.12.1 Fully Closing with Power ON

Initialize the electronic expansion valve when turning on the power, set the opening position and develop pressure equalizing.

3.12.2 Pressure Equalization Control

When the compressor is stopped, open and close the electronic expansion valve and develop pressure equalization.

3.12.3 Opening Limit

Outline

Limit a maximum and minimum opening of the electronic expansion valve in the operating room.

Detail

- A maximum electronic expansion valve opening in the operating room: 450 pulses
- A minimum electronic expansion valve opening in the operating room: 75 pulses

The electronic expansion valve is fully closed in the room where cooling is stopped and is opened with fixed opening during defrosting.

3.12.4 Gas Pipe Isothermal Control During Cooling

When the units are operating in multiple rooms, detect the gas piping temperature and correct the electronic expansion valve opening so that the temperature of the gas pipe in each room becomes identical.

- When the gas pipe temperature > the average gas pipe temperature,
  → open the electronic expansion valve in that room
- When the gas pipe temperature < the average gas pipe temperature,
  → close the electronic expansion valve in that room

3.12.5 SC Control

Outline

Heat Pump Only

Detect the temperature of liquid pipe and heat exchanger of the rooms and compensate the electronic expansion valve opening so that the SC of each room becomes the target SC.

- When the actual SC is > target SC, open the electronic expansion valve of the room.
- When the actual SC is < target SC, close the electronic expansion valve of the room.

Detail

Start Functioning Conditions

After finishing the open control (660 seconds after the beginning of the operation), control all the electronic expansion valve in the operating room.

Determine Electronic Expansion Valve Opening

Adjust the electronic expansion valve so that the temperature difference between the maximum heat exchanger temperature of connected room and the temperature of liquid pipe thermistor becomes constant.

3.12.6 Starting Operation Control / Changing Operation Room

Control the electronic expansion valve opening when the system is starting or the operating room is changed, and prevent the system to be super heated or moistened.

3.12.7 Disconnection of the Discharge Pipe Thermistor

Outline

Detect a disconnected discharge pipe thermistor by comparing the discharge pipe temperature with the condensation temperature. If any is disconnected, open the electronic expansion valve according to the outdoor air temperature and the operating frequency and operate for a specified time, and then stop.
After 3 minutes of waiting, restart the unit and check if any is disconnected. If any is disconnected stop the system after operating for a specified time. If the disconnection is detected 4 times in succession, then the system will be down.

Detail

Detect Disconnection
If a 630-second timer for open control becomes over, and a 9-minute timer for the compressor operation continuation is not counting time, the following adjustment must be made.

1. When the operation mode is cooling
   When the discharge pipe temperature is lower than the outdoor heat exchanger temperature, the discharge pipe thermistor disconnection must be ascertained.
2. When the operation mode is heating (only for heat pump model)
   When the discharge pipe temperature is lower than the max temperature of operating room heat exchanger, the discharge pipe thermistor disconnection must be ascertained.

Adjustment when the thermistor is disconnected
When compressor stop repeats specified time, the system should be down.

3.12.8 Control when frequency is changed

When the target pipe temperature control is active, if the target frequency is changed for a specified value in a certain time period, cancel the target discharge pipe temperature control and change the opening of the target electronic expansion valve according to the shift.

3.12.9 High Temperature of the Discharge Pipe

When the compressor is operating, if the discharge pipe temperature exceeds a certain value, open the electronic expansion valve and remove the refrigerant to the low pressure side and lower discharge temperature.

3.12.10 Oil Recovery Function

Outline

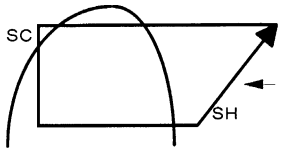
The electronic expansion valve opening in the cooling stopped room must be set as to open for a certain time at a specified interval so that the oil in the cooling stopped room may not be accumulated.

Detail

During cooling operation, every 1 hour continuous operation, the electronic expansion valves in the operation stopped room must be opened by 80 pulses for specified time.

3.12.11 Target Discharge Pipe Temperature Control

Obtain the target discharge pipe temperature from the indoor and outdoor heat exchange temperature, and adjust the electronic expansion valve opening so that the actual discharge pipe temperature become close to that temperature. (Indirect SH control using the discharge pipe temperature)



Set the target discharge pipe temperature as to become an aiming SH.
Regard that the inclination cannot be changed due to the operating condition.

(R1389)

Determine a correction value of the electronic expansion valve compensation and drive it according to the deflection of the target discharge temperature and actual discharge temperature, and the discharge temperature variation by the 20 sec.

3.13 Malfunctions

3.13.1 Sensor Malfunction Detection

Sensor malfunction may occur either in the thermistor or current transformer (CT) system.

Relating to Thermistor Malfunction

1. Outdoor heat exchanger thermistor
2. Discharge pipe thermistor
3. Fin thermistor
4. Gas pipe thermistor
5. Outdoor air temperature thermistor
6. Liquid pipe thermistor

Relating to CT Malfunction

When the output frequency is more than 55 Hz and the input current is less than 1.25A, carry out abnormal adjustment.

3.13.2 Detection of Overload and Over Current

Outline

In order to protect the inverter, detect an excessive output current, and for protecting compressor, monitor the OL operation.

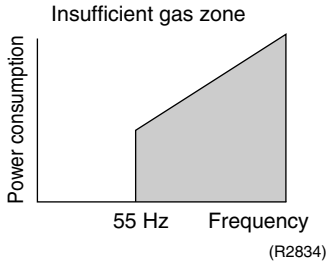
Detail

- **If the OL (compressor head) temperature exceeds 130°C (for the 2YC32) (120°C for 52 class) or 130°C (for the 2YC45), the compressor gets interrupted.**
- **If the inverter current exceeds 30 A, the compressor gets interrupted too.**

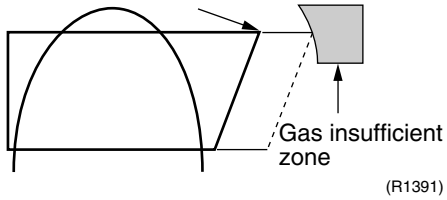
3.13.3 Insufficient Gas Control

Outline

If a power consumption is below the specified value in which the frequency is higher than the specified frequency, it must be regarded as gas insufficient.
In addition to such conventional function, if the discharge temperature is higher than the target discharge pipe temperature, and more than the specified temperature, and the electronic expansion valve is fully open (450 pulses) more than the specified time, it is considered as an insufficient gas.



With the conventional function, a power consumption is weak comparing with that in the normal operation when gas is insufficient, and gas insufficiency is detected by checking a power consumption.



When operating with insufficient gas, although the rise of discharge pipe temperature is great and the electronic expansion valve is open, it is presumed as an insufficient gas if the discharge pipe temperature is higher than the target discharge pipe temperature.

Detail

Judgment by Input Current
When an output frequency is exceeds 55 Hz and the input current is less than specified value, the adjustment is made for insufficient gas.
Judgment by Discharge Pipe Temperature
When discharge pipe temperature is 20°C higher than target value and the electronic expansion value opening is 450 plus (max.), the adjustment is made for insufficient gas.

3.13.4 Preventing Indoor Freezing

During cooling, if the heat exchanger temperature in the operation stopped room becomes below the specified temperature for the specified time, open the electronic expansion valve in the operation stopped room as specified, and carry out the fully closed operation. After this, if freezing abnormality occurs more than specified time, the system shall be down as the system abnormality.

3.14 Forced Operation Mode

Outline

Forced operating mode includes functions such as; forced cooling, forced heating, incorrect wiring, incorrect piping check.
Operating mode must be selected by operating the forced operation switch.

Detail

Forced Cooling, Forced Heating (Only for Heat Pump Model)

Item	Forced Cooling	Forced Heating
Forced operation allowing conditions	1) The indoor unit is not abnormal, but the indoor unit which is not in the freezing prohibiting zone is present in more than 1 room.	1) The indoor unit is not abnormal. The indoor unit which is not in the peak-cut prohibited zone is present in more than 1 room.
	2) The outdoor unit is not abnormal and not in the 3-minute stand-by mode.	←
	3) The operating mode of the outdoor unit is the stop mode.	←
	4) The slide selection switch of the forced operation is the cooling mode. The forced operation is allowed when the above “and” conditions are met.	4) The slide selection switch of the forced operation is the heating mode. The forced operation is allowed when the above “and” conditions are met.
Starting / adjustment	If the forced operation switch is pressed as the above conditions are met.	←
1) Determine operating room	All rooms	One of the available units runs. Priority is given to the youngest number's room in alphabetical order. (A > B > C > D)
2) Command frequency	◆ 2YC32: 52 Hz ◆ 2YC45: 42 Hz	◆ 2YC32: 44 Hz (Outdoor air temp:0°C) ◆ 2YC45: 37 Hz (Outdoor air temp:0°C)
3) Electronic expansion valve opening	It depends on the capacity of the operating indoor unit.	←
4) Outdoor unit adjustment	Compressor is in operation.	←
5) Indoor unit adjustment	The command of forced operation is transmitted to the indoor unit.	←
End	1) When the forced operation switch is pressed again.	←
	2) The operation is to end automatically after 30 min.	←
Others	The protect functions are prior to all others in the forced operation.	←

3.15 Wiring-Error Check

Outline

The convenient Wiring Error Check function is designed for the microcomputer to correct wiring errors itself.
If local wiring is unclear in the case of buried piping, for example, just press the wiring error check switch that is behind the right-hand panel of the outdoor unit. Even if the connections for Room A and Room B are confused, the system may run without a hassle. Note that this check function does not work in the following cases.

- For about 30 seconds after the power is turned on (during initial setup).
- For 3-minute standby period after the compressor has stopped.
- When the outdoor air temperature is below 5°C.
- If the indoor unit is in trouble (also in case of all-room transmission failure).

When the piping and wiring are perfect, there is no need to use this function.

Operation

1. Remove the 5 screws from the service panel (right side panel) and detach the panel.
2. Press the wiring error check switch on the service monitor PCB, and the wiring error check function is activated.
3. In about 10-15 minutes, the checking will end automatically.
4. When the checking is over, the service monitor LED indicators start flashing.

LED	1	2	3	4	Judgment
Status	All flashing at once				Self-correction impossible
	Flashing one after another				Self-correction complete

Self-correction complete…The LED indicators 1 ~ 4 flash one after another.
Self-correction impossible…The LED indicators flash all at the same time.

- Transmission failure occurs at any of the indoor units.
- The indoor unit heat exchanger thermistor is disconnected.
- An indoor unit is in trouble (if a trouble occurs during the wiring error checking).

Emergency stop…Any of the LED indicators 1 ~ 4 stays on.

Note:

1. It takes about 10-15 minutes (after pressing the wiring error check switch) to complete the checking. (Wrong wiring between the upper and lower units cannot be self-corrected.)
2. Wrongly connected liquid and gas pipes cannot be self-corrected either. Be sure to make the liquid pipe and the gas pipe in pairs.
3. To forced-terminate the wiring error check procedure halfway, press the wiring error check switch again.
   In this case, the microcomputer's memory gets back to its initial status (Room A wiring → Port A piping, Room B wiring → Port B piping).
4. In replacing the outdoor unit PCB, be sure to use this function.
5. Make the power slide setting after doing the wiring error checking. (Otherwise, if the wiring is reversed, the air-conditioners being connected are set up in the reverse way.)

Basic Knowledge

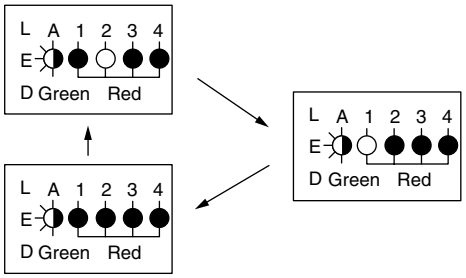
- This function works in this way. Refrigerant is let flow from Port A and on. The temperatures of the indoor unit heat exchanger thermistors are detected one by one to check up the matching between the pipes and wiring.
- With this function on, freezing (crackling) noise may be heard from the indoor unit. This is not a problem. (This is because the heat exchange temperature is made to drop below 0°C in order to increase the detection accuracy.)
- The indoor fan is made to turn on and off at the same time.

Checking the current setting data on the microcomputer memory

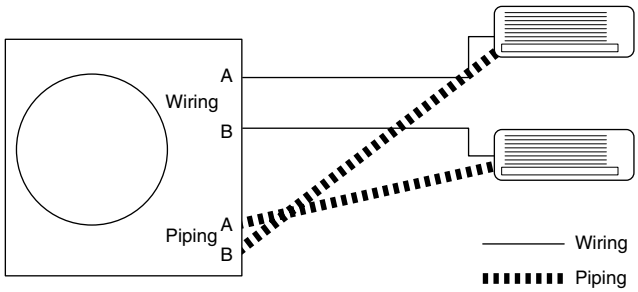
Those data can be checked by looking at the service monitor LED indicators, when the wiring error checking is over, during forced operation, at the stop of the system.
The LED indicators stop flashing when the forced operation is over.
LED1…Room A wiring, LED2…Room B wiring
1st flashing LED…Port A piping, 2nd flashing LED…Port B piping
The first stay-on LED means the room that is connected with Port A. The next stay-on LED means the one connected with Port B.

Example

Let's suppose the LED indicators are flashing as follows.



The above means that Port A is connected with Port B and Port B with Room A (or self-corrected this way.)



3.16 Additional Function

3.16.1 Connection Pipe Condensation Preventing Function

This control is intended to adjust the electronic expansion valve opening so that the outdoor unit gas pipe temperature (GDN) be kept below 8°C.

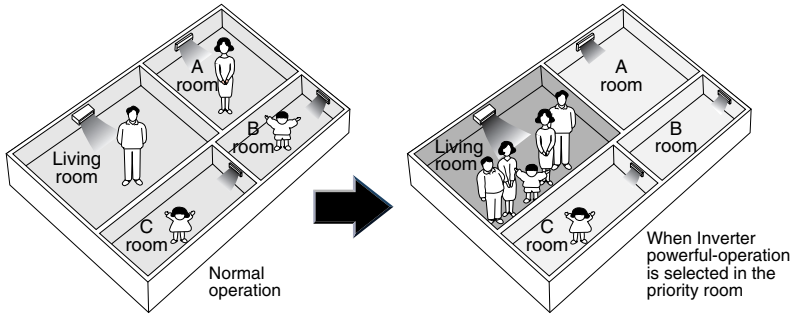
3.16.2 Priority Room Setting

Electronic expansion valves are controlled to provide the unit designated as the priority room with the capacity of other room units.
(Distribution of capacity: Priority room unit --- ΔD Max., other room units --- ΔD -α)

- Setting method
  Turn off the circuit breaker before changing the setting.
  Only one room can be set as the priority room.
- Control start conditions
  Priority room setting is made.
  AND
  "Powerful" signal from the priority room unit is received.

Note: The operation mode of the priority room unit has precedence.

- Cancellation of control
  The control function is canceled when the "Powerful" operation mode is switched off or 20 minutes elapse after "Powerful Operation" started.



3.16.3 POWERFUL Operation Mode

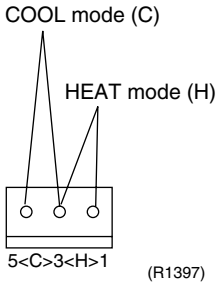
Compressor operating frequency is increased to PI Max. (Max. Hz of operating room unit ΣS) and outdoor unit airflow rate is increased.

3.16.4 Voltage Detection Function

Power supply voltage is detected each time equipment operation starts.

3.16.5 Cooling / Heating Mode Lock

Use the S15 connector to set the unit to only cool or heat.
Setting to only heat (H): Short-circuit pins 1 and 3 of the connector <S15>.
Setting to only cool (C): short-circuit pins 3 and 5 of the connector <S15>.
The following specifications apply to the connector housing and pins.
JST products Housing: VHR-5N
Pin: SVH-21T-1, 1
Note that forced operation is also possible in COOL / HEAT mode.



(R1397)

Part 5
System Configuration

1. System Configuration

1.1 Operation Instructions

After the installation and test operation of the room air conditioner have been completed, it should be operated and handled as described below. Every user would like to know the correct method of operation of the room air conditioner, to check if it is capable of cooling (or heating) well, and to know a clever method of using it.
In order to meet this expectation of the users, giving sufficient explanations taking enough time can be said to reduce about 80% of the requests for servicing. However good the installation work is and however good the functions are, the customer may blame either the room air conditioner or its installation work because of improper handling. The installation work and handing over of the unit can only be considered to have been completed when its handling has been explained to the user without using technical terms but giving full knowledge of the equipment.

2. Instruction

2.1 Manual Contents and Reference Page

Model Series	Wall Mounted Type		
	FTK(X)S20~35D CTK(X)S50D	FTK(X)S20~35C ATXS20~35D, ATXS20~35C	FTK(X)S50~71B ATXS50D, ATXS50C
Read before Operation			
Safety Precautions	92	92	92
Names of Parts	94	97	100
Preparation before Operation ★	112	112	112
Operation			
AUTO, DRY, COOL, HEAT, FAN Operation ★	115	115	115
Adjusting the Air Flow Direction	117	119	121
POWERFUL Operation ★	127	127	127
OUTDOOR UNIT SILENT Operation ★	128	128	128
ECONO Operation	129	—	—
HOME LEAVE Operation ★	—	130	130
INTELLIGENT EYE Operation	132	134	136
TIMER Operation ★	138	138	138
Note for Multi System	140	140	140
Care			
Care and Cleaning	142	145	148
Trouble Shooting			
Trouble Shooting	159	159	159
Drawing No.	3P142629-1	3P119293-2G	3P098586-1E

Model Series	Duct Connected Type	Floor/Ceiling Suspended Dual Type	Floor Standing Type
	FDK(X)S25·35C CDK(X)S50·60C	FLK(X)S25~60	FVK(X)S25~50
Read before Operation			
Safety Precautions	92	92	92
Names of Parts	103	106	109
Preparation before Operation ★	112	112	112
Operation			
AUTO, DRY, COOL, HEAT, FAN Operation ★	115	115	115
Adjusting the Air Flow Direction	—	123	125
POWERFUL Operation ★	127	127	127
OUTDOOR UNIT SILENT Operation ★	128	128	128
ECONO Operation	—	—	—
HOME LEAVE Operation ★	130	130	130
INTELLIGENT EYE Operation	—	—	—
TIMER Operation ★	138	138	138
Note for Multi System	140	140	140
Care			
Care and Cleaning	151	153	156
Trouble Shooting			
Trouble Shooting	159	159	159
Drawing No.	3P131999-1B	3P098587-2K	3P098587-1K

★ : Illustrations are for wall mounted type FTXS20/25/35C as representative.

2.2 Safety Precautions

Safety precautions

- Keep this manual where the operator can easily find them.
- Read this manual attentively before starting up the unit.
- For safety reason the operator must read the following cautions carefully.
- This manual classifies precautions into WARNINGS and CAUTIONS. Be sure to follow all precautions below: they are all important for ensuring safety.

⚠ WARNING	⚠ CAUTION
If you do not follow these instructions exactly, the unit may cause property damage, personal injury or loss of life.	If you do not follow these instructions exactly, the unit may cause minor or moderate property damage or personal injury.


Never do.


Be sure to earth the air conditioner.


Never touch the air conditioner (including the remote controller) with a wet hand.


Be sure to follow the instructions.


Never cause the air conditioner (including the remote controller) to get wet.

⚠ WARNING

- In order to avoid fire, explosion or injury, do not operate the unit when harmful, among which flammable or corrosive gases, are detected near the unit.
- It is not good for health to expose your body to the air flow for a long time.
- Do not put a finger, a rod or other objects into the air outlet or inlet. As the fan is rotating at a high speed, it will cause injury.
- Do not attempt to repair, relocate, modify or reinstall the air conditioner by yourself. Incorrect work will cause electric shocks, fire etc.
  For repairs and reinstallation, consult your Daikin dealer for advice and information.

- The refrigerant used in the air conditioner is safe. Although leaks should not occur, if for some reason any refrigerant happens to leak into the room, make sure it does not come in contact with any flame as of gas heaters, kerosene heaters or gas range.
- If the air conditioner is not cooling (heating) properly, the refrigerant may be leaking, so call your dealer.
  When carrying out repairs accompanying adding refrigerant, check the content of the repairs with our service staff.
- Do not attempt to install the air conditioner by your self. Incorrect work will result in water leakage, electric shocks or fire. For installation, consult the dealer or a qualified technician.
- In order to avoid electric shock, fire or injury, if you detect any abnormally such as smell of fire, stop the operation and turn off the breaker. And call your dealer for instructions.

⚠ CAUTION

- The air conditioner must be earthed. Incomplete earthing may result in electric shocks. Do not connect the earth line to a gas pipe, water pipe, lightning rod, or a telephone earth line.

- In order to avoid any quality deterioration, do not use the unit for cooling precision instruments, food, plants, animals or works of art.
- Never expose little children, plants or animals directly to the air flow.
- Do not place appliances which produce open fire in places exposed to the air flow from the unit or under the indoor unit. It may cause incomplete combustion or deformation of the unit due to the heat.
- Do not block air inlets nor outlets. Impaired air flow may result in insufficient performance or trouble.

- Do not stand or sit on the outdoor unit. Do not place any object on the unit to avoid injury, do not remove the fan guard.
- Do not place anything under the indoor or outdoor unit that must be kept away from moisture. In certain conditions, moisture in the air may condense and drip.
- After a long use, check the unit stand and fittings for damage.
- Do not touch the air inlet and aluminum fins of outdoor unit. It may cause injury.
- The appliance is not intended for use by young children or infirm persons without supervision.
- Young children should be supervised to ensure that they do not play with the appliance.

- To avoid oxygen deficiency, ventilate the room sufficiently if equipment with burner is used together with the air conditioner.
- Before cleaning, be sure to stop the operation, turn the breaker off or pull out the supply cord.
- Do not connect the air conditioner to a power supply different from the one as specified. It may cause trouble or fire.
- Depending on the environment, an earth leakage breaker must be installed. Lack of an earth leakage breaker may result in electric shocks.
- Arrange the drain hose to ensure smooth drainage. Incomplete draining may cause wetting of the building, furniture etc.

- Do not operate the air conditioner with wet hands.

- Do not wash the indoor unit with excessive water, only use a slightly wet cloth.
- Do not place things such as vessels containing water or anything else on top of the unit. Water may penetrate into the unit and degrade electrical insulations, resulting in an electric shock.

Installation site

■ To install the air conditioner in the following types of environments, consult the dealer.
- Places with an oily ambient or where steam or soot occurs.
- Salty environment such as coastal areas.
- Places where sulfide gas occurs such as hot springs.
- Places where snow may block the outdoor unit.

The drain from the outdoor unit must be discharged to a place of good drainage.

Consider nuisance to your neighbours from noises

■ For installation, choose a place as described below.
- A place solid enough to bear the weight of the unit which does not amplify the operation noise or vibration.
- A place from where the air discharged from the outdoor unit or the operation noise will not annoy your neighbours.

Electrical work

- For power supply, be sure to use a separate power circuit dedicated to the air conditioner.

System relocation

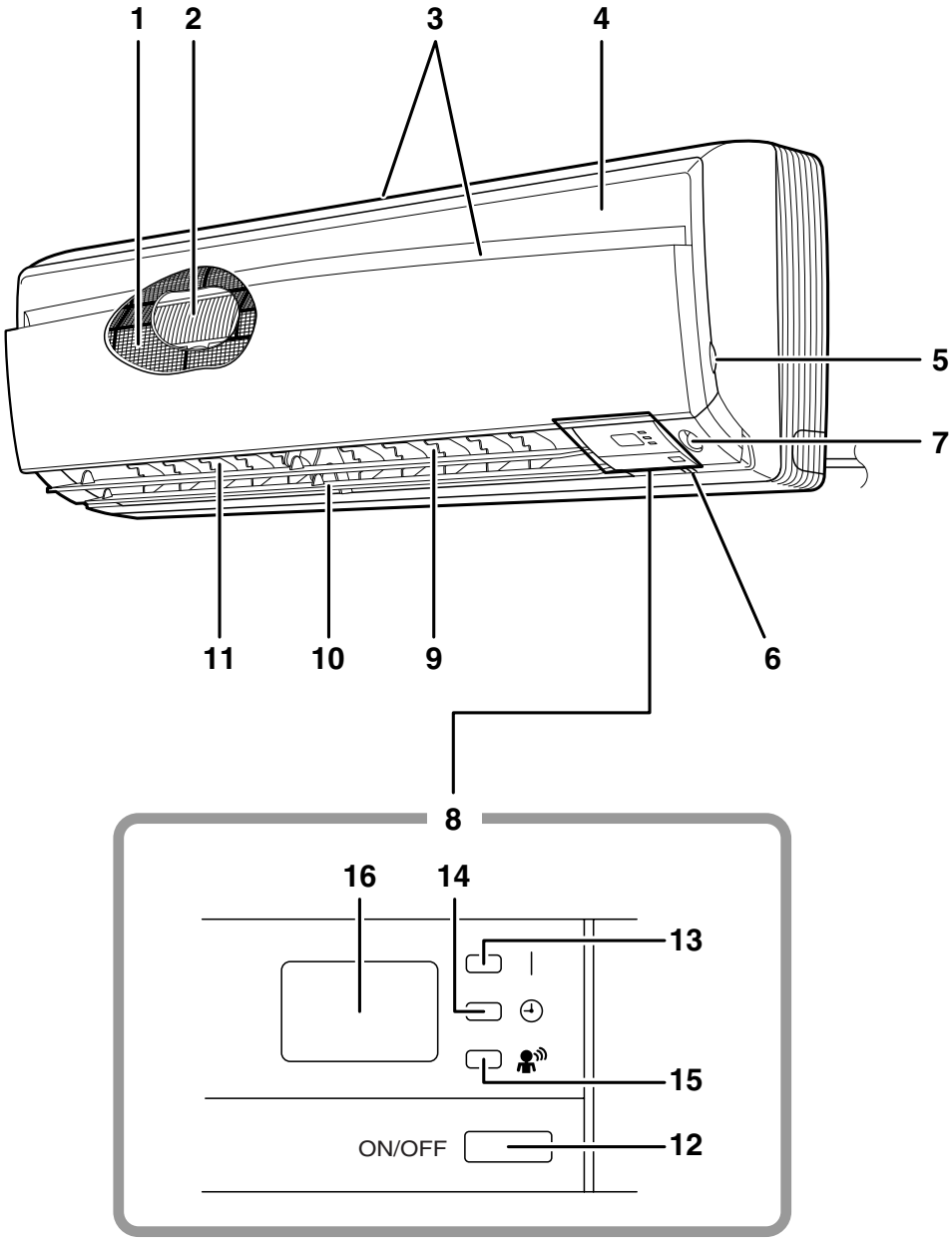
- Relocating the air conditioner requires specialized knowledge and skills. Please consult the dealer if relocation is necessary for moving or remodeling.

2.3 Names of Parts

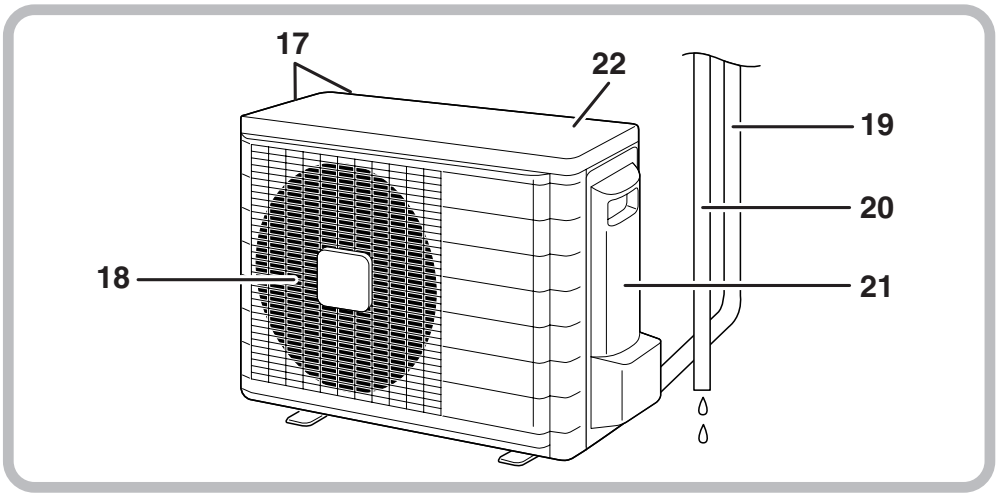
FTK(X)S20/25/35D, CTK(X)S50D

Names of parts

■ Indoor Unit



■ Outdoor Unit



■ Indoor Unit

1. **Air filter**
2. **Titanium Apatite Photocatalytic Air-Purifying Filter:**
   - These filters are attached to the inside of the air filters.
3. **Air inlet**
4. **Front panel**
5. **Panel tab**
6. **Room temperature sensor:**
   - It senses the air temperature around the unit.
7. **INTELLIGENT EYE sensor:**
   - It detects the movements of people and automatically switches between normal operation and energy saving operation.
8. **Display**
9. **Air outlet**
10. **Flaps (horizontal blades)**
11. **louvers (vertical blades):**
    - The louvers are inside of the air outlet.
12. **Indoor Unit ON/OFF switch:**
    - Push this switch once to start operation. Push once again to stop it.
    - The operation mode refers to the following table.

	Mode	Temperature setting	Air flow rate
F(C)TKS	COOL	22°C	AUTO
F(C)TXS	AUTO	25°C	AUTO

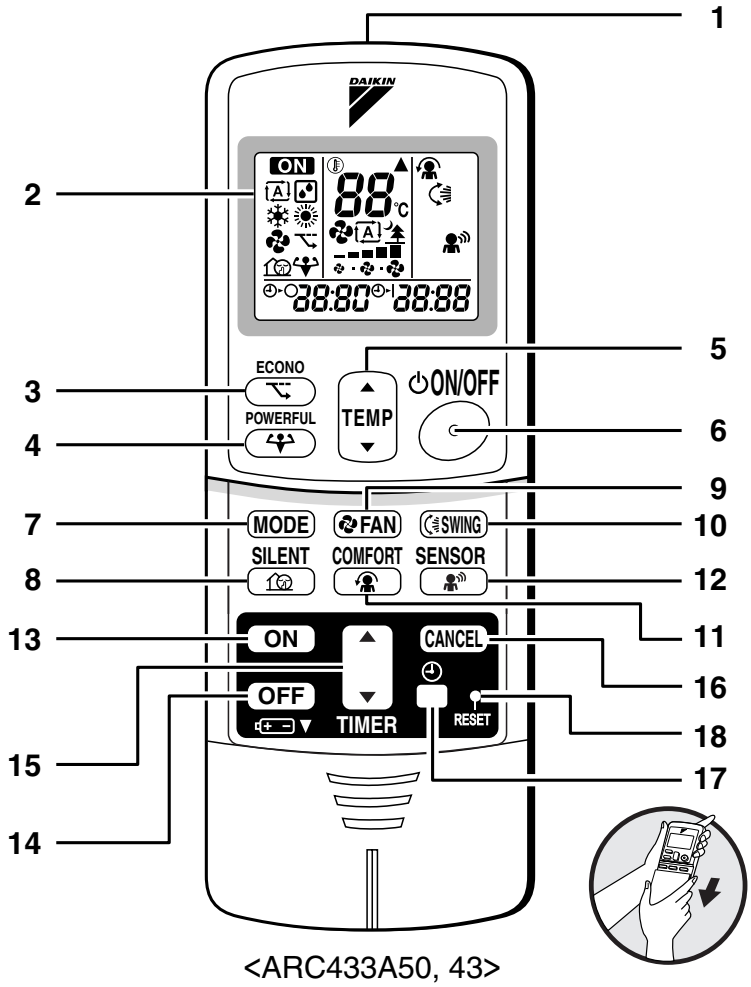
    - This switch is useful when the remote controller is missing.
13. **Operation lamp (green)**
14. **TIMER lamp (yellow)**
15. **INTELLIGENT EYE lamp (green)**
16. **Signal receiver:**
    - It receives signals from the remote controller.
    - When the unit receives a signal, you will hear a short beep.
      - Operation start .....beep-beep
      - Settings changed.....beep
      - Operation stop .....beeeeep

■ Outdoor Unit

17. **Air inlet:** (Back and side)
18. **Air outlet**
19. **Refrigerant piping and inter-unit cable**
20. **Drain hose**
21. **Earth terminal:**
    - It is inside of this cover.
22. **Outside air temperature sensor:**
    - It senses the ambient temperature around the unit.

Appearance of the outdoor unit may differ from some models.

■ Remote Controller



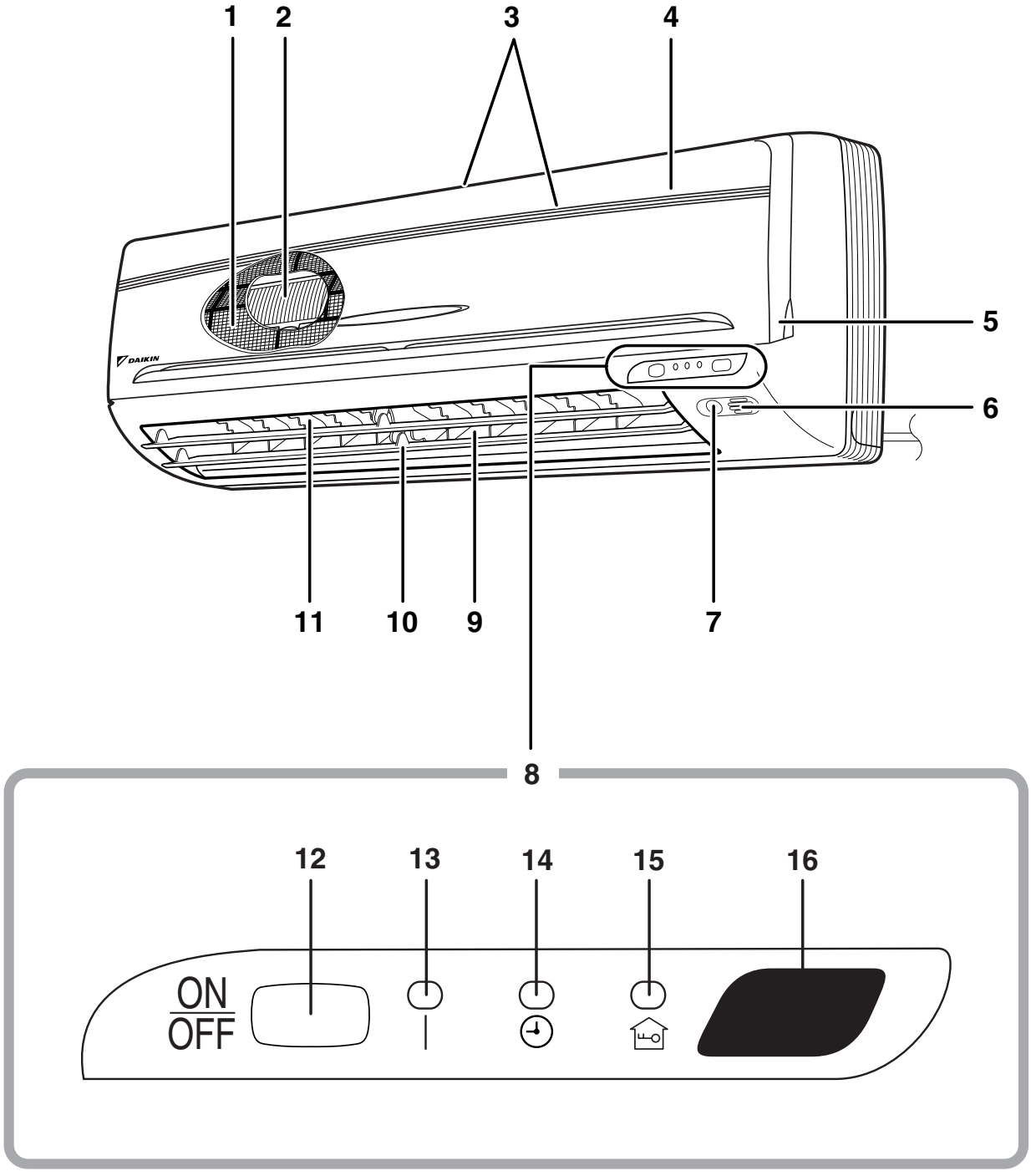
<ARC433A50, 43>

1. **Signal transmitter:**
   - It sends signals to the indoor unit.
2. **Display:**
   - It displays the current settings.
     (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)
3. **ECONO button:**
   ECONO operation
4. **POWERFUL button:**
   POWERFUL operation
5. **TEMPERATURE adjustment buttons:**
   - It changes the temperature setting.
6. **ON/OFF button:**
   - Press this button once to start operation. Press once again to stop it.
7. **MODE selector button:**
   - It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)
8. **SILENT button:** OUTDOOR UNIT SILENT operation
9. **FAN setting button:**
   - It selects the air flow rate setting.
10. **SWING button:**
    - Ajusting the Air Flow Direction.
11. **COMFORT AIRFLOW button:** COMFORT AIRFLOW operation
12. **SENSOR button:** INTELLIGENT EYE operation
13. **ON TIMER button**
14. **OFF TIMER button**
15. **TIMER Setting button:**
    - It changes the time setting.
16. **TIMER CANCEL button:**
    - It cancels the timer setting.
17. **CLOCK button**
18. **RESET button:**
    - Restart the unit if it freezes.
    - Use a thin object to push.

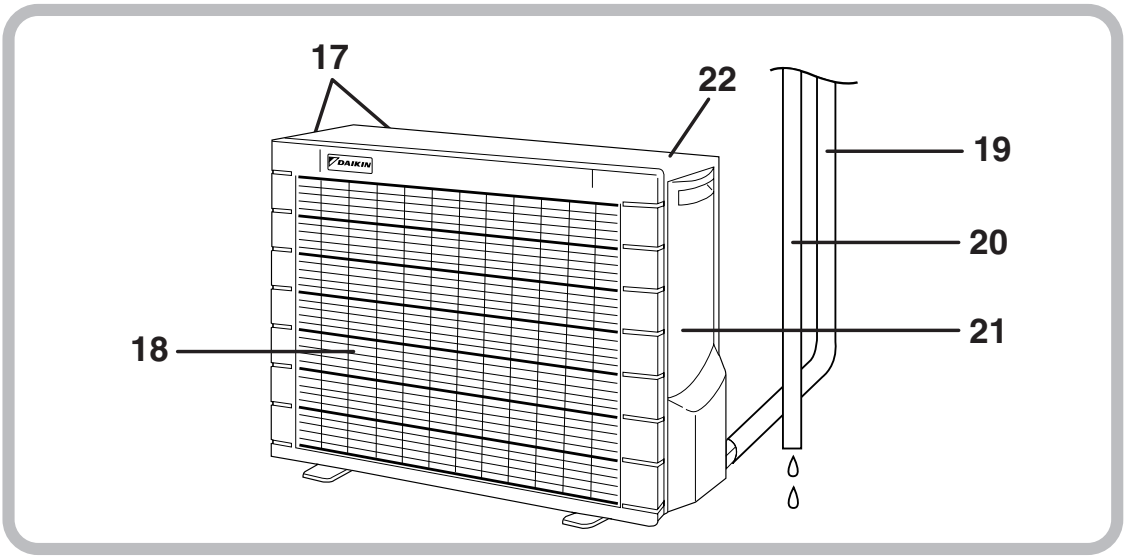
FTK(X)S20/25/35C, ATXS20/25/35D, ATXS20/25/35C

Names of parts

■ Indoor Unit



■ Outdoor Unit



■ Indoor Unit

1. **Air filter**
2. **Air purifying filter with photocatalytic deodorizing function:**
   - These filters are attached to the inside of the air filters.
3. **Air inlet**
4. **Front grille**
5. **Grille tab**
6. **Room temperature sensor:**
   - It senses the air temperature around the unit.
7. **INTELLIGENT EYE sensor:**
   - It detects the movements of people and automatically switches between normal operation and energy saving operation.
8. **Display**
9. **Air outlet**
10. **Flaps (horizontal blades)**
11. **Louvres (vertical blades):**
    - The louvres are inside of the air outlet.
12. **Indoor Unit ON/OFF switch:**
    - Push this switch once to start operation. Push once again to stop it.
    - The operation mode refers to the following table.

	Mode	Temperature setting	Air flow rate
FTKS	COOL	22°C	AUTO
FTXS	AUTO	25°C	AUTO

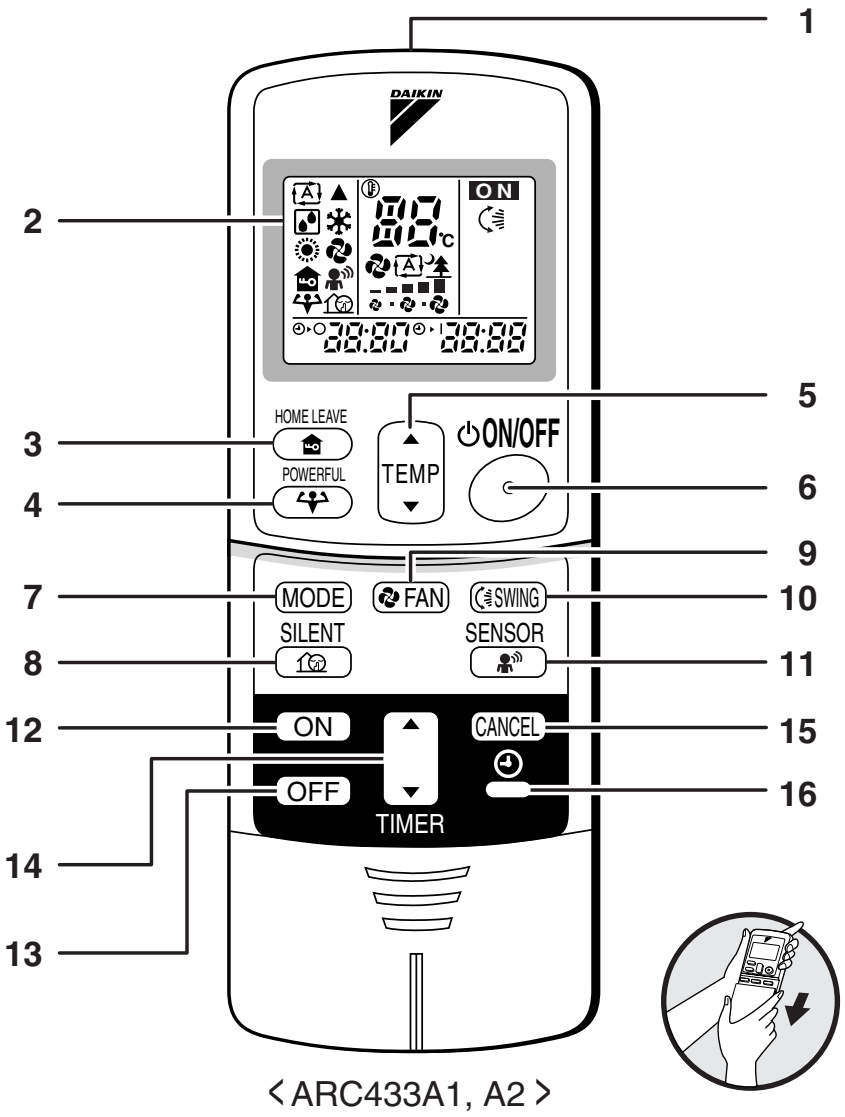
    - This switch is useful when the remote controller is missing.
13. **Operation lamp (green)**
14. **TIMER lamp (Yellow)**
15. **HOME LEAVE lamp (red)**
16. **Signal receiver:**
    - It receives signals from the remote controller.
    - When the unit receives a signal, you will hear a short beep.
      - Operation start .....beep-beep
      - Settings changed.....beep
      - Operation stop .....beeeeep

■ Outdoor Unit

17. **Air inlet:** (Back and side)
18. **Air outlet**
19. **Refrigerant piping and inter-unit cable**
20. **Drain hose**
21. **Earth terminal:**
    - It is inside of this cover.
22. **Outside air temperature sensor:**
    - It senses the ambient temperature around the unit.

Appearance of the outdoor unit may differ from some models.

■ Remote Controller



<ARC433A1, A2>

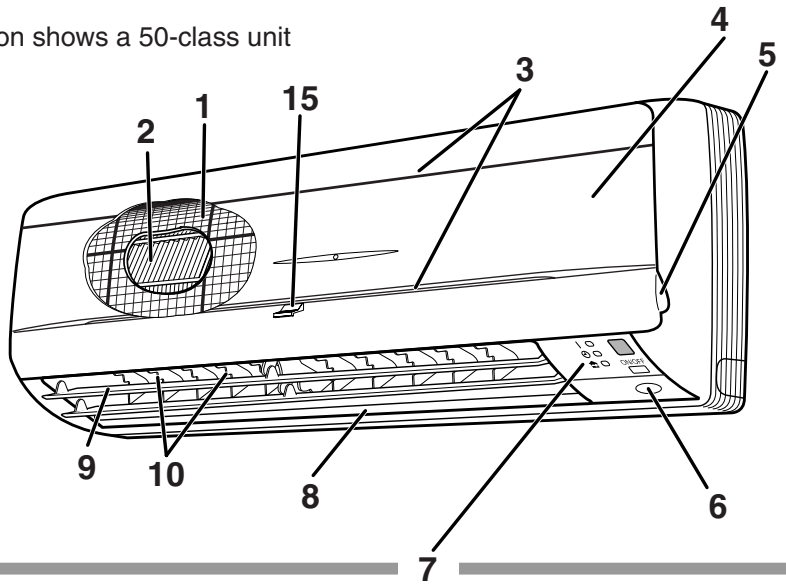
1. **Signal transmitter:**
   - It sends signals to the indoor unit.
2. **Display:**
   - It displays the current settings. (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)
3. **HOME LEAVE button:** for HOME LEAVE operation
4. **POWERFUL button:** for POWERFUL operation
5. **TEMPERATURE adjustment buttons:**
   - It changes the temperature setting.
6. **ON/OFF button:**
   - Press this button once to start operation. Press once again to stop it.
7. **MODE selector button:**
   - It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)
8. **SILENT button:** for OUTDOOR UNIT SILENT operation
9. **FAN setting button:**
   - It selects the air flow rate setting.
10. **SWING button**
11. **SENSOR button: for INTELLIGENT EYE** operation
12. **ON TIMER button**
13. **OFF TIMER button**
14. **TIMER Setting button:**
    - It changes the time setting.
15. **TIMER CANCEL button:**
    - It cancels the timer setting.
16. **CLOCK button**

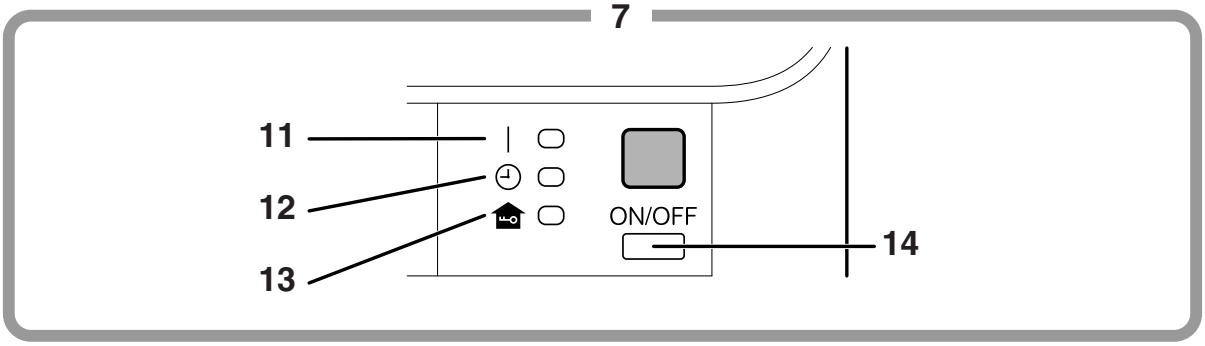
FTK(X)S50/60/71B, ATXS50D, ATXS50C

Names of parts

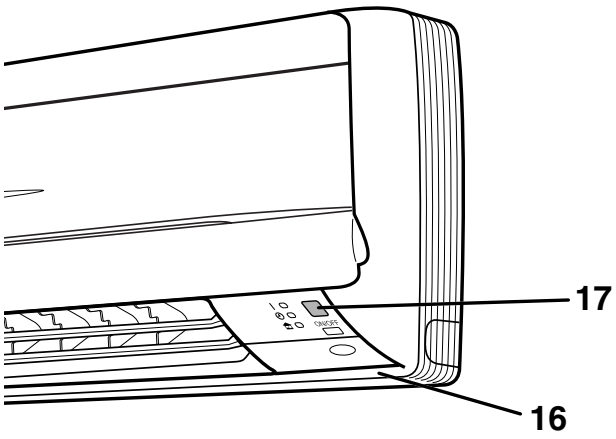
■ Indoor Unit

The illustration shows a 50-class unit

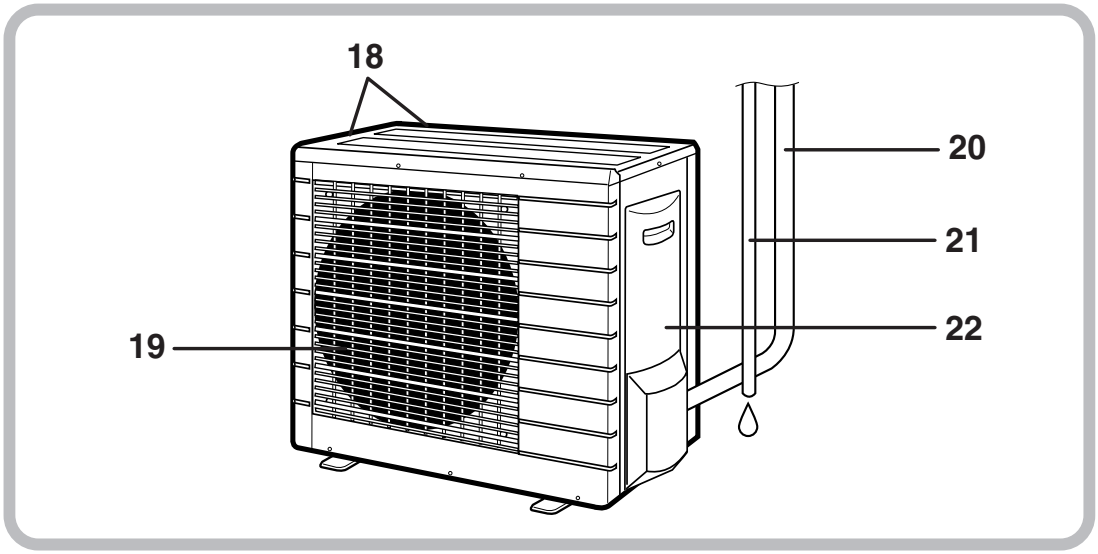




■ Main unit control panel



■ Outdoor Unit



■ Indoor Unit

1. **Air filter**
2. **Air purifying filter with photocatalytic deodorizing function:**
   - These filters are attached to the inside of the air filters.
3. **Air inlet**
4. **Front grille**
5. **Grille tab**
6. **INTELLIGENT EYE sensor:**
   - It detects the movements of people and automatically switches between normal operation and energy saving operation.
7. **Display**
8. **Air outlet**
9. **Flap (horizontal blade)**
10. **Louvers (vertical blades):**
    - The Louvers are inside of the air outlet.
11. **Operation lamp (green)**
12. **TIMER lamp (yellow)**
13. **HOME LEAVE lamp (red):**
    - Lights up when you use HOME LEAVE Operation.
14. **Indoor Unit ON/OFF switch:**
    - Push this switch once to start operation. Push once again to stop it.
    - The operation mode refer to the following table.

	Mode	Temperature setting	Air flow rate
FTKS	COOL	22°C	AUTO
FTXS	AUTO	25°C	AUTO

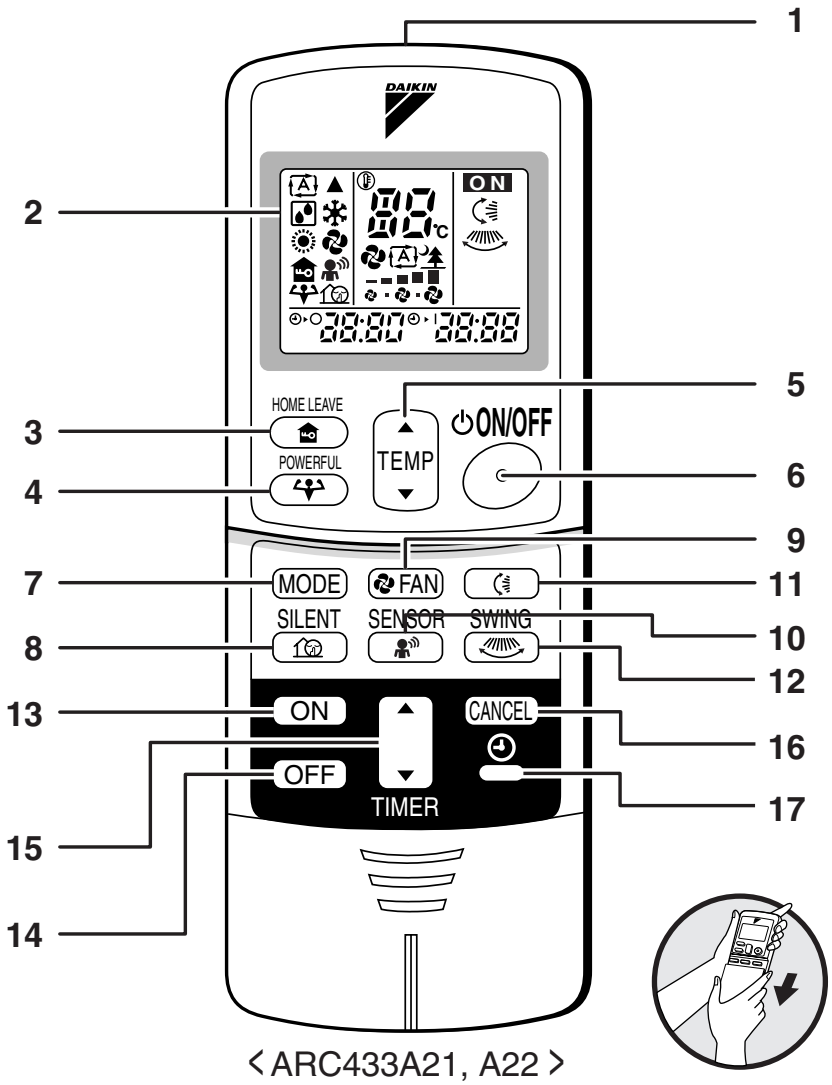
    - This switch is useful when the remote controller is missing.
15. **Packaging materials:** 50 class only
    - If any packaging materials are included, please remove before operating.
16. **Room temperature sensor:**
    - It senses the air temperature around the unit.
17. **Signal receiver:**
    - It receives signals from the remote controller.
    - When the unit receives a signal, you will hear a short beep.
      - Operation start .....beep-beep
      - Settings changed.....beep
      - Operation stop .....beeeeep

■ Outdoor Unit

18. **Air inlet:** (Back and side)
19. **Air outlet**
20. **Refrigerant piping and inter-unit cable**
21. **Drain hose**
22. **Earth terminal:**
    - It is inside of this cover.

Appearance of the outdoor unit may differ from some models.

■ Remote Controller



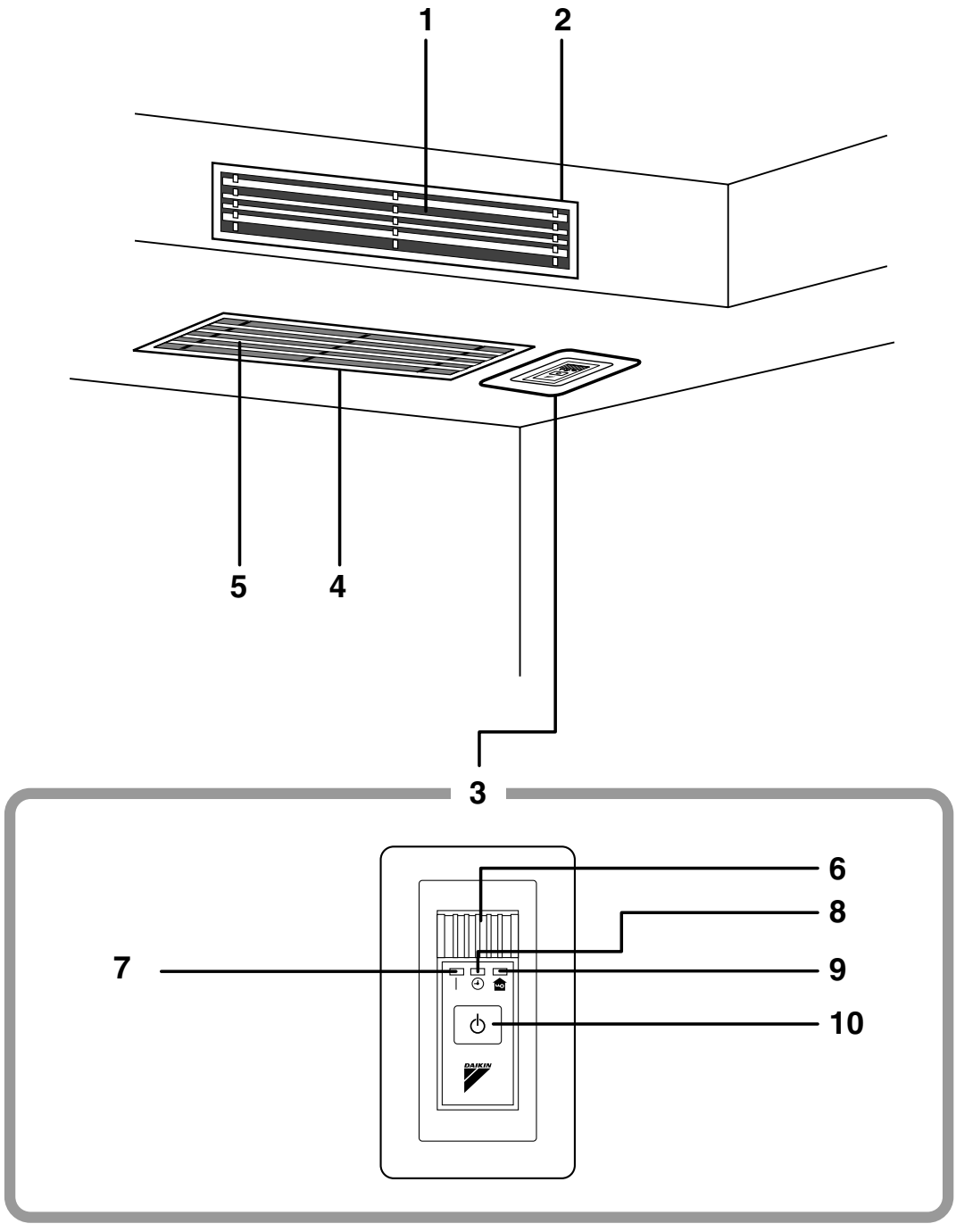
< ARC433A21, A22 >

1. **Signal transmitter:**
   - It sends signals to the indoor unit.
2. **Display:**
   - It displays the current settings.
     (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)
3. **HOME LEAVE button:**
   for HOME LEAVE operation
4. **POWERFUL button:**
   for POWERFUL operation
5. **TEMPERATURE adjustment buttons:**
   - It changes the temperature of time setting.
6. **ON/OFF button:**
   - Press this button once to start operation. Press once again to stop it.
7. **MODE selector button:**
   - It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)
8. **SILENT button:** for OUTDOOR UNIT SILENT operation
9. **FAN setting button:**
   - It selects the air flow rate setting.
10. **SENSOR button:** for INTELLIGENT EYE operation
11. **SWING button**
    - Flap (Horizontal blade)
12. **SWING button**
    - Louver (Vertical blades)
13. **ON TIMER button**
14. **OFF TIMER button**
15. **TIMER Setting button:**
    - It changes the time setting.
16. **TIMER CANCEL button:**
    - It cancels the timer setting.
17. **CLOCK button**

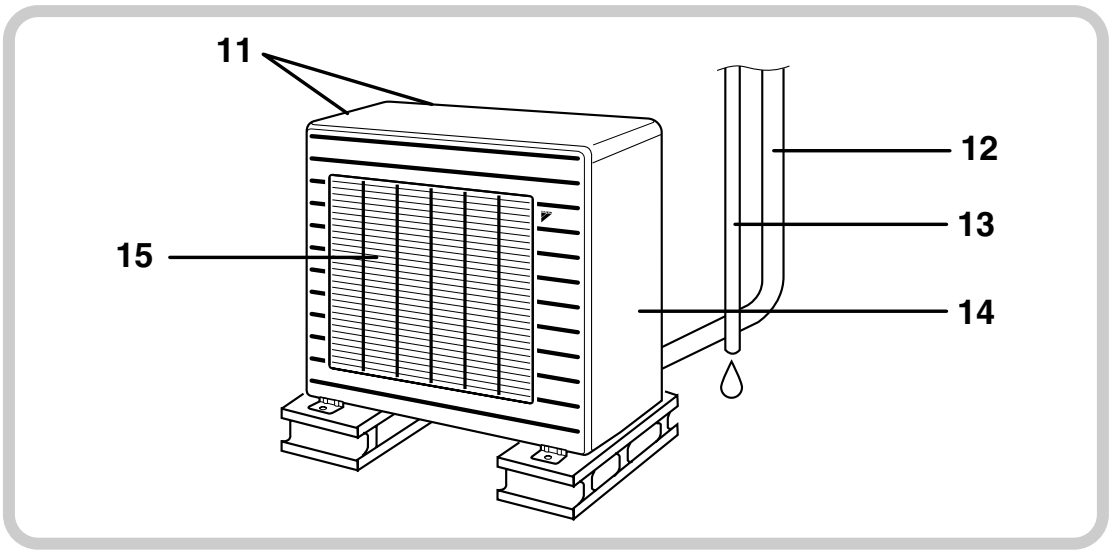
FDK(X)S25/35C, CDK(X)S50/60C

Names of parts

■ Indoor Unit



■ Outdoor Unit



■ Indoor Unit

1. **Air outlet**
2. **Air outlet grille** (Field supply)
   - Appearance of the Air outlet grille and Air inlet grille may differ with some models.
3. **Display, Control panel**
4. **Suction grille** (Option)
   - Appearance of the suction grille and Air inlet grille may differ with some models.
5. **Air inlet**
6. **Room temperature sensor:**
   - It senses the air temperature around the unit.
7. **Operation lamp (green)**
8. **TIMER lamp (yellow)**
9. **HOME LEAVE lamp (red)**
   - LIghts up when you use HOME LEAVE operation.
10. **Indoor Unit ON/OFF switch**
    - Push this switch once to start operation. Push once again to stop it.
    - This switch is useful when the remote controller is missing.

- **The operation mode refers to the following table.**

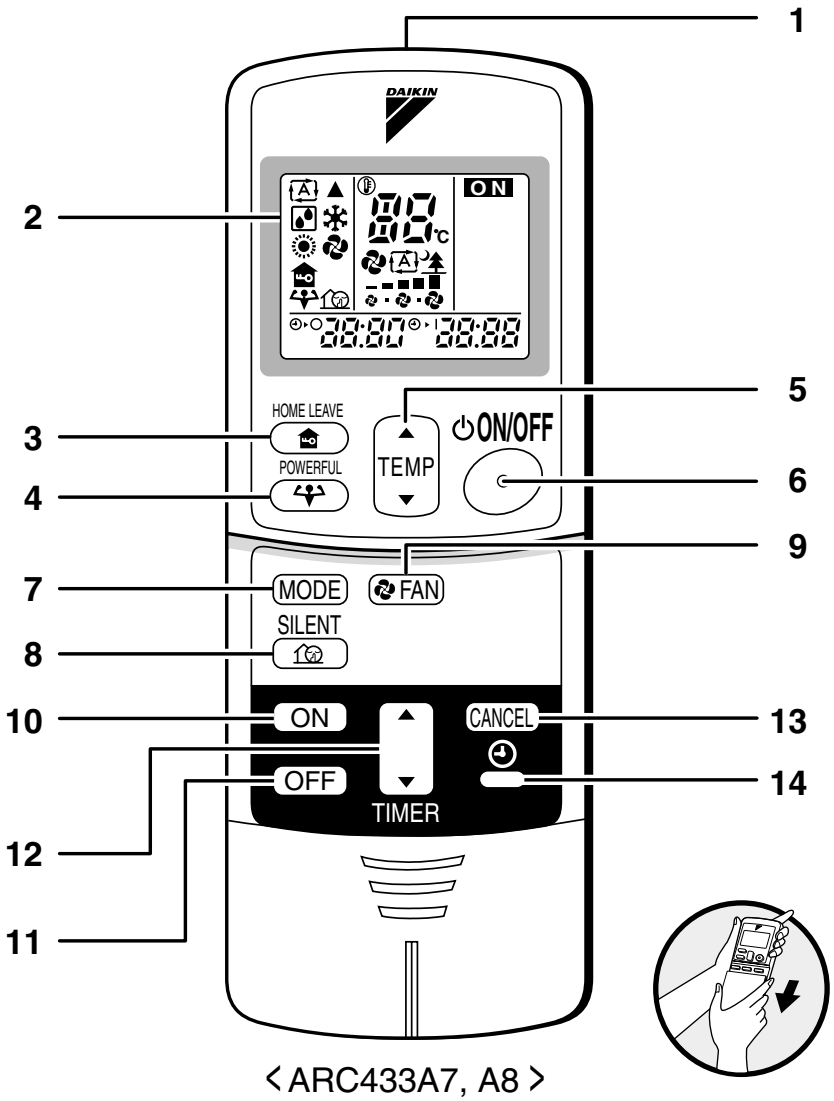
	Mode	Temperature setting	Air flow rate
CDKS	COOL	22°C	AUTO
CDXS	AUTO	25°C	AUTO

■ Outdoor Unit

11. **Air inlet:** (Back and side)
12. **Refrigerant piping and inter-unit cable**
13. **Drain hose**
14. **Earth terminal:**
    - It is inside of this cover.
15. **Air outlet**

Appearance of the outdoor unit may differ from some models.

■ Remote Controller



〈ARC433A7, A8〉

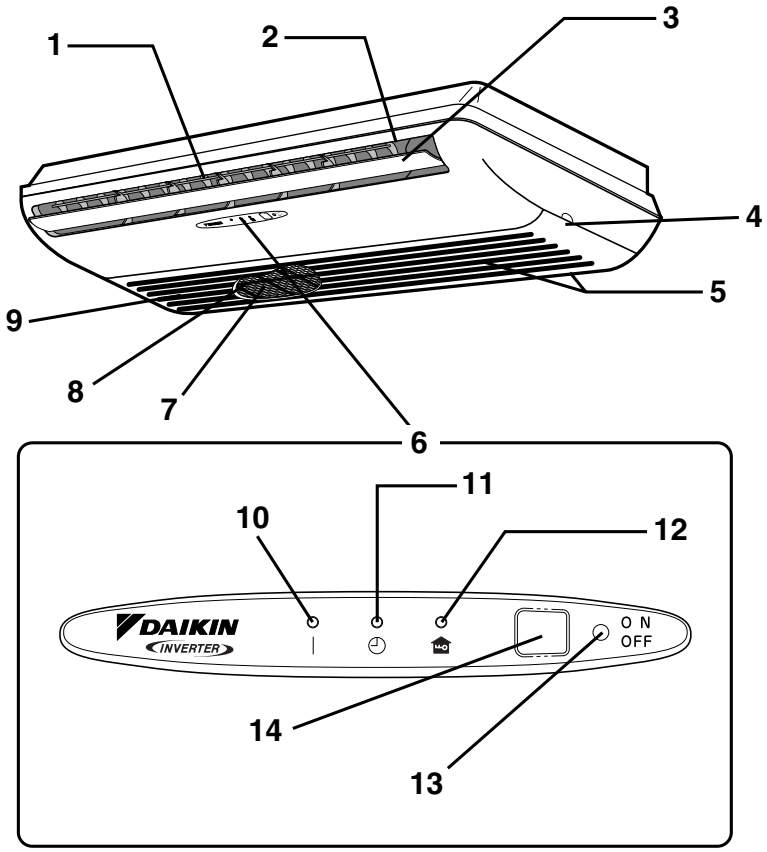
1. **Signal transmitter:**
   - It sends signals to the indoor unit.
2. **Display:**
   - It displays the current settings. (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)
3. **HOME LEAVE button:** for HOME LEAVE operation
4. **POWERFUL button:** for POWERFUL operation
5. **TEMPERATURE adjustment buttons:**
   - It changes the temperature setting.
6. **ON/OFF button:**
   - Press this button once to start operation. Press once again to stop it.
7. **MODE selector button:**
   - It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)
8. **SILENT button:** for OUTDOOR UNIT SILENT operation
9. **FAN setting button:**
   - It selects the air flow rate setting.
10. **ON TIMER button**
11. **OFF TIMER button**
12. **TIMER Setting button:**
    - It changes the time setting.
13. **TIMER CANCEL button:**
    - It cancels the timer setting.
14. **CLOCK button**

FLK(X)S25/35/50/60

Names of parts

■ Indoor Unit

The indoor unit can be installed either to the ceiling or to a wall. The descriptions contained in this manual show the case when installation is being carried out to the ceiling. (The methods of operation used are the same when installing to a wall.)



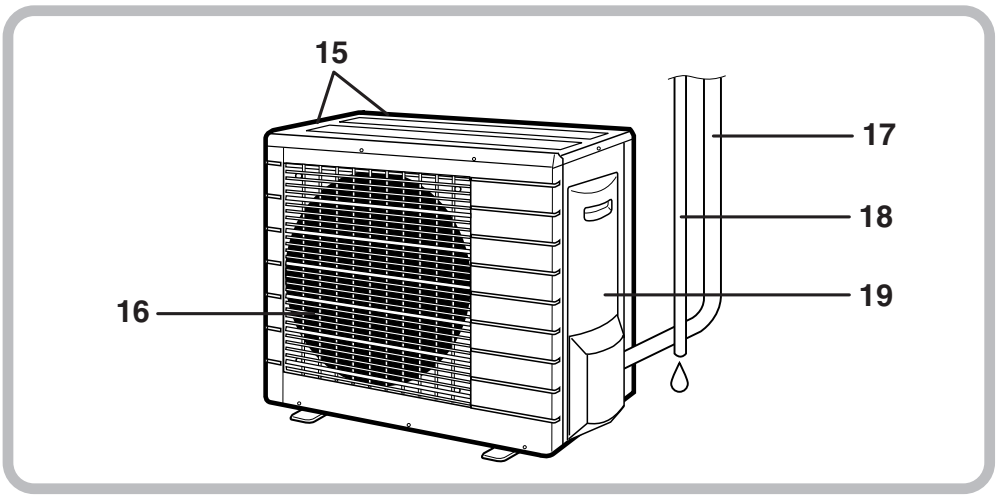
■ Opening the front grille

How to open the front grille

⚠ CAUTION

- Before opening the front grille, be sure to stop the operation and turn the breaker OFF.

■ Outdoor Unit



■ Indoor Unit

1. **Louvres (vertical blades):**
   The louvres are inside of the air outlet.
2. **Air outlet**
3. **Flap (horizontal blade)**
4. **Grille tab**
5. **Air inlet**
6. **Display**
7. **Air filter**
8. **Photocatalytic deodorizing filter or Air purifying filter:**
   - These filters are attached to the inside of the air filters.
9. **Front grille**
10. **Operation lamp (green)**
11. **TIMER lamp (yellow)**
12. **HOME LEAVE lamp (red):**
    Lights up when you use HOME LEAVE Operation.
13. **Indoor unit ON/OFF switch**
    - Push this switch once to start operation. Push once again to stop it.
    - The operation mode refers to the following table.

	Mode	Temperature setting	Air flow rate
FLKS	COOL	22°C	AUTO
FLXS	AUTO	25°C	AUTO

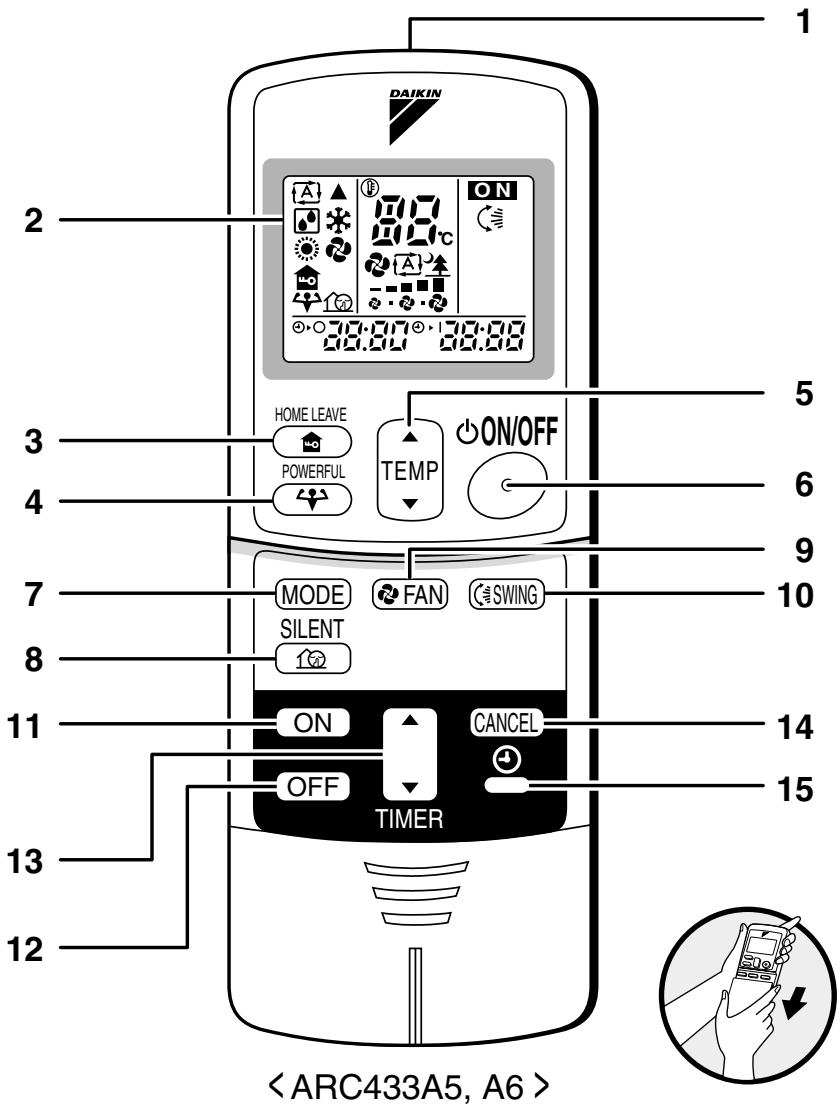
    - Push the switch using an object with a sharp tip, such as a pen.
    - This switch is useful when the remote controller is missing.
14. **Signal receiver:**
    - It receives signals from the remote controller.
    - When the unit receives a signal, you will hear a short beep.
      - Operation start .....beep-beep
      - Settings changed.....beep
      - Operation stop .....beeeeep

■ Outdoor Unit

15. **Air inlet:** (Back and side)
16. **Air outlet**
17. **Refrigerant piping and inter-unit cable**
18. **Drain hose**
19. **Earth terminal:**
    - It is inside of this cover.

Appearance of the outdoor unit may differ from some models.

■ Remote Controller



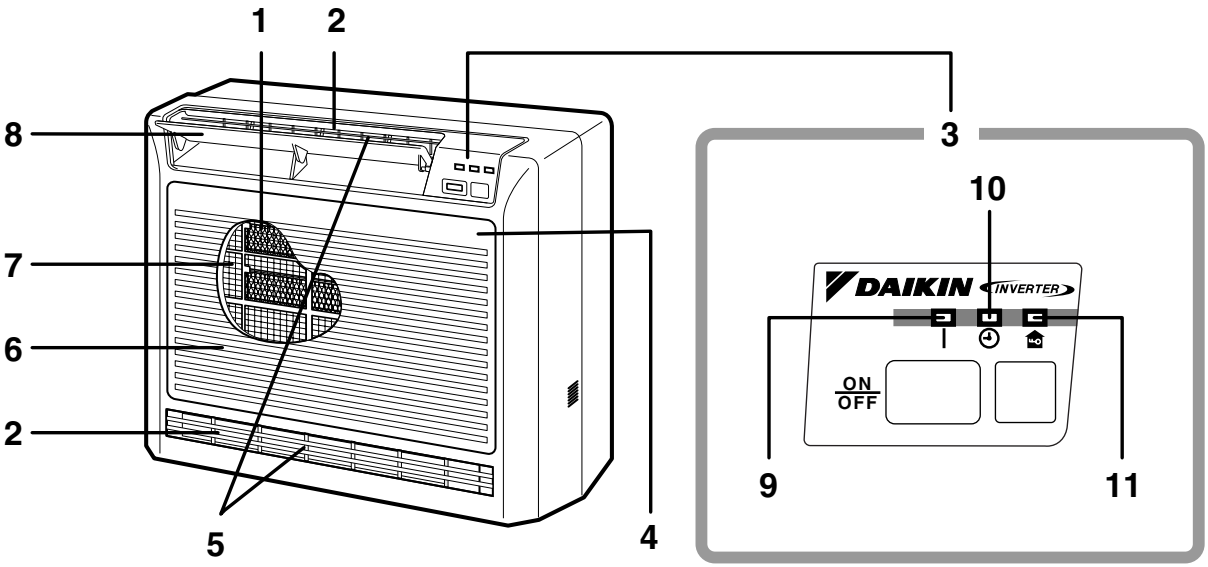
<ARC433A5, A6>

1. **Signal Transmitter:**
   - It sends signals to the indoor unit.
2. **Display:**
   - It displays the current settings. (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)
3. **HOME LEAVE button:** for HOME LEAVE operation
4. **POWERFUL button:** for POWERFUL operation
5. **TEMPERATURE adjustment buttons:**
   - It changes the temperature setting.
6. **ON/OFF button:**
   - Press this button once to start operation. Press once again to stop it.
7. **MODE selector button:**
   - It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)
8. **OUTDOOR UNIT SILENT button**
9. **FAN setting button:**
   - It selects the air flow rate setting.
10. **SWING button**
11. **ON TIMER button**
12. **OFF TIMER button**
13. **TIMER Setting button:**
    - It changes the time setting.
14. **TIMER CANCEL button:**
    - It cancels the timer setting.
15. **CLOCK button**

FVK(X)S25/35/50

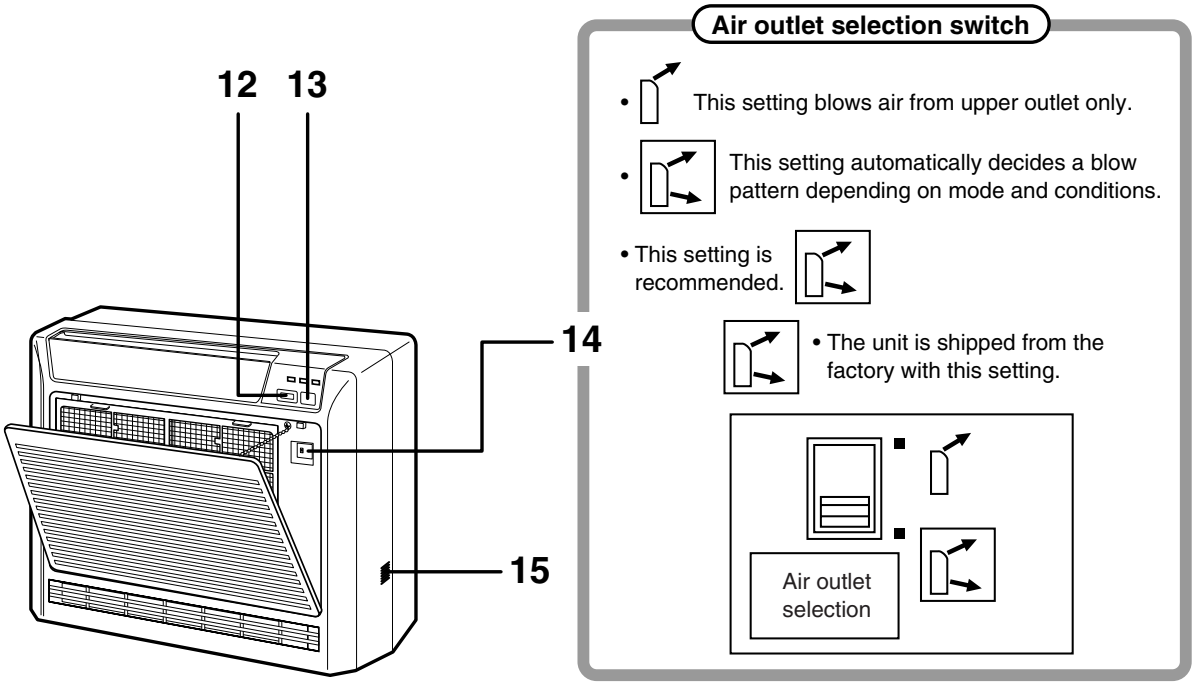
Names of parts

■ Indoor Unit



■ Opening the front grille

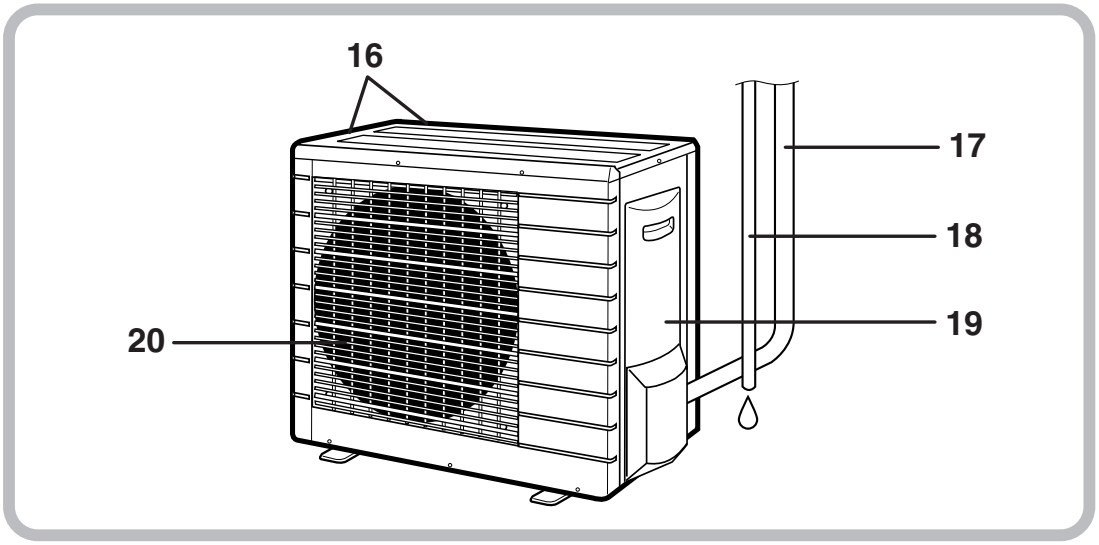
How to open the grille



⚠ CAUTION

Before opening the front grille, be sure to stop the operation and turn the breaker OFF.
Do not touch the metal parts on the inside of the indoor unit, as it may result in injury.

■ Outdoor Unit



■ Indoor Unit

1. **Photocatalytic deodorizing filter and Air purifying filter:**
   - These filters are attached to the inside of the air filters.
2. **Air outlet**
3. **Display**
4. **Front grille**
5. **Louvres (vertical blades):**
   - The louvres are inside of the air outlet.
6. **Air inlet**
7. **Air filter**
8. **Flap (horizontal blade)**
9. **Operation lamp (green)**
10. **TIMER lamp (yellow)**
11. **HOME LEAVE lamp (red)**
12. **Indoor Unit ON/OFF switch:**
    - Push this switch once to start operation. Push once again to stop it.
    - The operation mode refers to the following table.

	Mode	Temperature setting	Air flow rate
FVKS	COOL	22°C	AUTO
FVXS	AUTO	25°C	AUTO

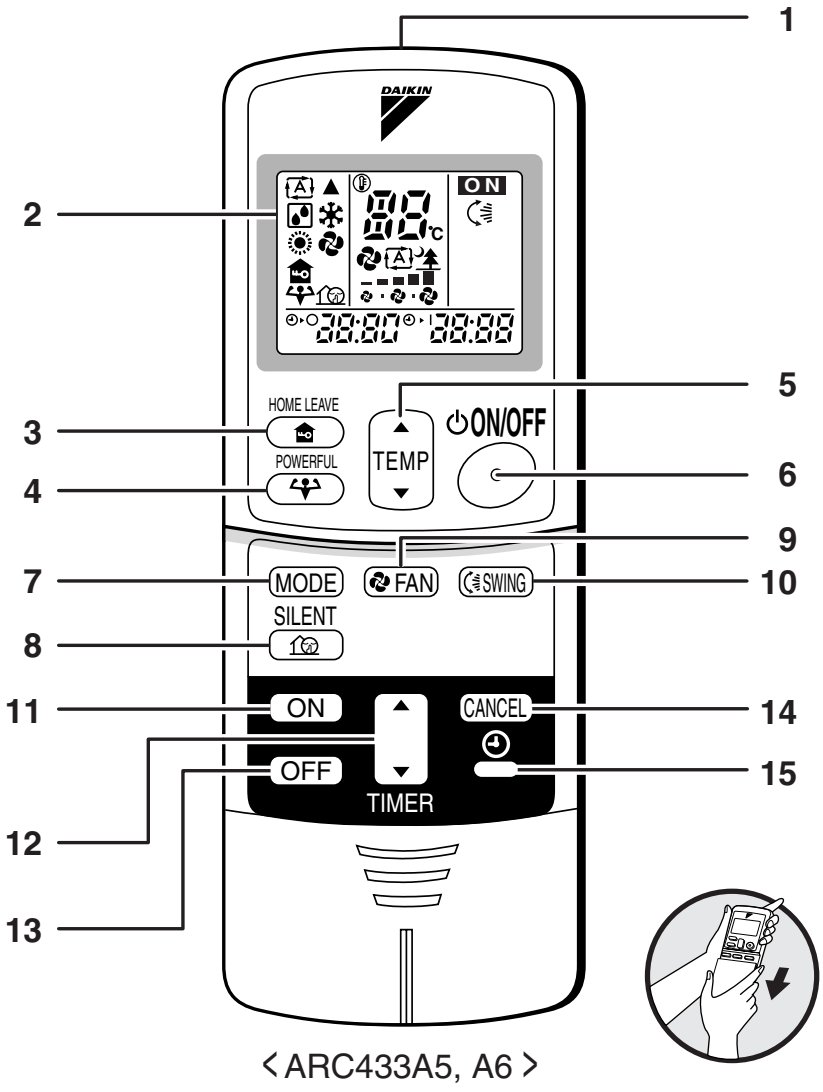
    - This switch is useful when the remote controller is missing.
13. **Signal receiver:**
    - Signals are received from the remote controller .
    - When the unit receives a signal, you will hear a short beep.
      - Operation start .....beep-beep
      - Settings changed.....beep
      - Operation stop .....beeeeep
14. **Air outlet selection switch**
15. **Room temperature sensor:**
    - It senses the air temperature around the unit.

■ Outdoor Unit

16. **Air inlet:** (Back and side)
17. **Refrigerant piping and inter-unit cable**
18. **Drain hose**
19. **Earth terminal:**
    - It is inside of this cover.
20. **Air outlet**

Appearance of the outdoor unit may differ from some models.

■ Remote Controller



< ARC433A5, A6 >

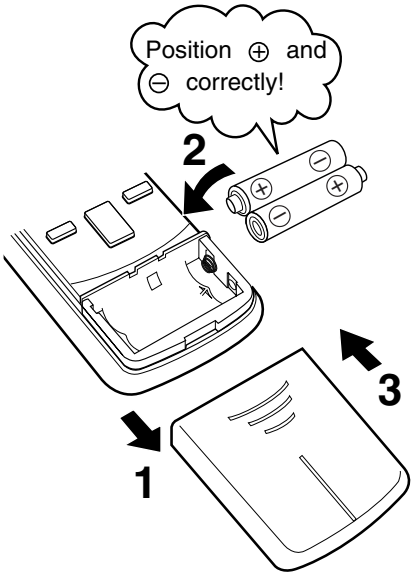
1. **Signal transmitter:**
   - It sends signals to the indoor unit.
2. **Display:**
   - It displays the current settings. (In this illustration, each section is shown with all its displays ON for the purpose of explanation.)
3. **HOME LEAVE button:** for HOME LEAVE operation
4. **POWERFUL button:** for POWERFUL operation
5. **TEMPERATURE adjustment buttons:**
   - It changes the temperature setting.
6. **ON/OFF button:**
   - Press this button once to start operation. Press once again to stop it.
7. **MODE selector button:**
   - It selects the operation mode. (AUTO/DRY/COOL/HEAT/FAN)
8. **SILENT button:** for OUTDOOR UNIT SILENT operation
9. **FAN setting button:**
   - It selects the air flow rate setting.
10. **SWING button**
11. **ON TIMER button**
12. **TIMER Setting button:**
    - It changes the time setting.
13. **OFF TIMER button**
14. **TIMER CANCEL button:**
    - It cancels the timer setting.
15. **CLOCK button**

2.4 Preparation before Operation

Preparation Before Operation

■ To set the batteries

1. **Press with a finger and slide the front cover to take it off.**
2. **Set two dry batteries (AAA).**
3. **Set the front cover as before.**



ATTENTION

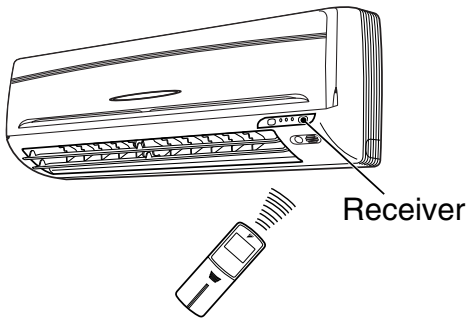
■ **About batteries**

- When replacing the batteries, use batteries of the same type, and replace the two old batteries together.
- When the system is not used for a long time, take the batteries out.
- We recommend replacing once a year, although if the remote controller display begins to fade or if reception deteriorates, please replace with new alkali batteries. Using manganese batteries reduces the lifespan.
- The attached batteries are provided for the initial use of the system.
  The usable period of the batteries may be short depending on the manufactured date of the air conditioner.

Preparation Before Operation

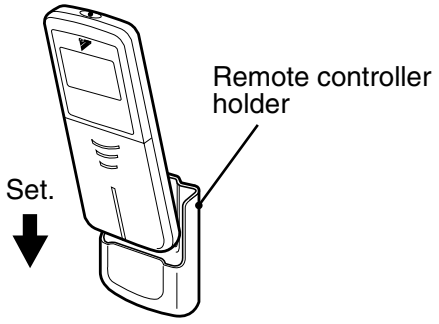
■ To operate the remote controller

- To use the remote controller, aim the transmitter at the indoor unit. If there is anything to block signals between the unit and the remote controller, such as a curtain, the unit will not operate.
- Do not drop the remote controller. Do not get it wet.
- The maximum distance for communication is about 7 m.



■ To fix the remote controller holder on the wall

1. **Choose a place from where the signals reach the unit.**
2. **Fix the holder to a wall, a pillar, etc. with the screws supplied with the holder.**
3. **Place the remote controller in the remote controller holder.**



● To remove, pull it upwards.

ATTENTION

■ **About remote controller**

- Never expose the remote controller to direct sunlight.
- Dust on the signal transmitter or receiver will reduce the sensitivity. Wipe off dust with soft cloth.
- Signal communication may be disabled if an electronic-starter-type fluorescent lamp (such as inverter-type lamps) is in the room. Consult the shop if that is the case.
- If the remote control signals happen to operate another appliance, move that appliance to somewhere else, or consult the shop.

■ To set the clock

1. **Press "CLOCK button".**

   0:00 is displayed.

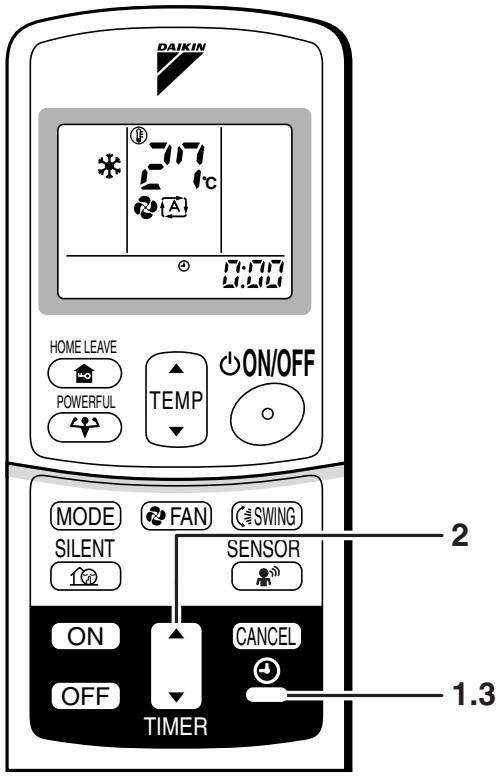
   ⏲ blinks.

2. **Press "TIMER setting button" to set the clock to the present time.**

   Holding down " ▲ " or " ▼ " button rapidly increases or decreases the time display.

3. **Press "CLOCK button".**

   : blinks.



■ Turn the breaker ON

Turning ON the breaker opens the flap, then closes it again. (This is a normal procedure.)

NOTE

■ Tips for saving energy

- Be careful not to cool (heat) the room too much.
  Keeping the temperature setting at a moderate level helps save energy.
- Cover windows with a blind or a curtain.
  Blocking sunlight and air from outdoors increases the cooling (heating) effect.
- Clogged air filters cause inefficient operation and waste energy. Clean them once in about every two weeks.

Recommended temperature setting
For cooling:26˚C – 28˚C For heating:20˚C – 24˚C

■ Please note

- The air conditioner always consumes 15-35 watts of electricity even while it is not operating.
- If you are not going to use the air conditioner for a long period, for example in spring or autumn, turn the breaker OFF.
- Use the air conditioner in the following conditions.

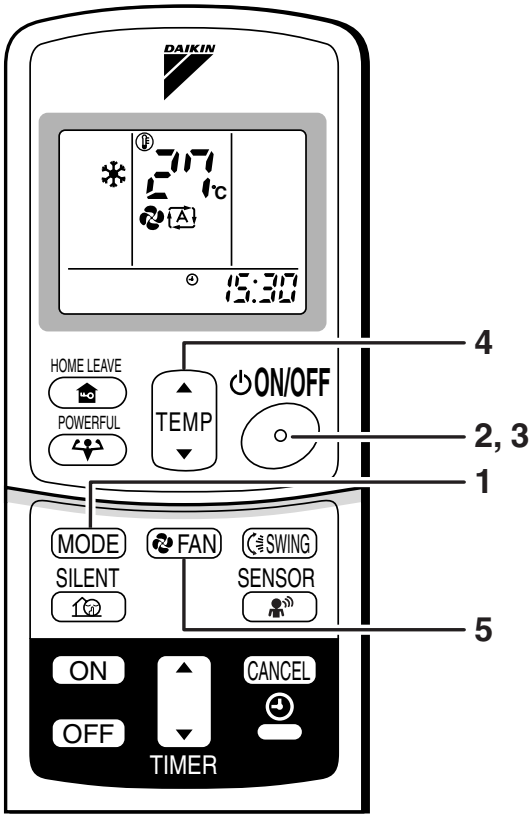
Mode	Operating conditions	If operation is continued out of this range
COOL	Outdoor temperature: 2MK(X)S 10 to 46 ˚C 3/4MK(X)S –10 to 46 ˚C RK(X)S –10 to 46 ˚C RK(X)H 10 to 46 ˚C Indoor temperature: 18 to 32 ˚C Indoor humidity: 80% max.	• A safety device may work to stop the operation. (In multi system, it may work to stop the operation of the outdoor unit only.) • Condensation may occur on the indoor unit and drip.
HEAT	Outdoor temperature: 2MXS –10 to 21 ˚C 3/4MXS –15 to 21 ˚C RXS –15 to 21 ˚C RXH –10 to 21 ˚C Indoor temperature: 10 to 30 ˚C	• A safety device may work to stop the operation.
DRY	Outdoor temperature: 2MK(X)S 10 to 46 ˚C 3/4MK(X)S –10 to 46 ˚C RK(X)S –10 to 46 ˚C RK(X)H 10 to 46 ˚C Indoor temperature: 18 to 32 ˚C Indoor humidity: 80% max.	• A safety device may work to stop the operation. • Condensation may occur on the indoor unit and drip.

Operation outside this humidity or temperature range may cause a safety device to disable the system.

2.5 AUTO · DRY · COOL · HEAT · FAN Operation

AUTO · DRY · COOL · HEAT · FAN Operation

The air conditioner operates with the operation mode of your choice.
From the next time on, the air conditioner will operate with the same operation mode.



■ To start operation

1. Press “MODE selector button” and select a operation mode.

- Each pressing of the button advances the mode setting in sequence.

: AUTO

: DRY

: COOL

: HEAT

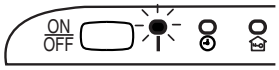
: FAN

<FTKS>

<FTXS>

2. Press “ON/OFF button” .

- The OPERATION lamp lights up.



■ To stop operation

3. Press “ON/OFF button” again.

- Then OPERATION lamp goes off.

■ To change the temperature setting

4. Press “TEMPERATURE adjustment button”

DRY or FAN mode	AUTO or COOL or HEAT mode
The temperature setting is not variable.	Press “ ▲ ” to raise the temperature and press “ ▼ ” to lower the temperature.
	Set to the temperature you like. 

■ To change the air flow rate setting

5. Press “FAN setting button”.

DRY mode	AUTO or COOL or HEAT or FAN mode
The air flow rate setting is not variable.	Five levels of air flow rate setting from “ ” to “ ” plus “ ” “ ” are available. 

- Indoor unit quiet operation

  When the air flow is set to “ ”, the noise from the indoor unit will become quieter. Use this when making the noise quieter.

  The unit might lose power when the fan strength is set to a weak level.

■ To change the air flow direction

NOTE

■ **Note on HEAT operation**
- Since this air conditioner heats the room by taking heat from outdoor air to indoors, the heating capacity becomes smaller in lower outdoor temperatures. If the heating effect is insufficient, it is recommended to use another heating appliance in combination with the air conditioner.
- The heat pump system heats the room by circulating hot air around all parts of the room. After the start of heating operation, it takes some time before the room gets warmer.
- In heating operation, frost may occur on the outdoor unit and lower the heating capacity. In that case, the system switches into defrosting operation to take away the frost.
- During defrosting operation, hot air does not flow out of indoor unit.

■ **Note on DRY operation**
- The computer chip works to rid the room of humidity while maintaining the temperature as much as possible. It automatically controls temperature and fan strength, so manual adjustment of these functions is unavailable.

■ **Note on AUTO operation**
- In AUTO operation, the system selects an appropriate operation mode (COOL or HEAT) based on the room temperature at the start of the operation.
- The system automatically reselects setting at a regular interval to bring the room temperature to user-setting level.
- If you do not like AUTO operation, you can manually select the operation mode and setting you like.

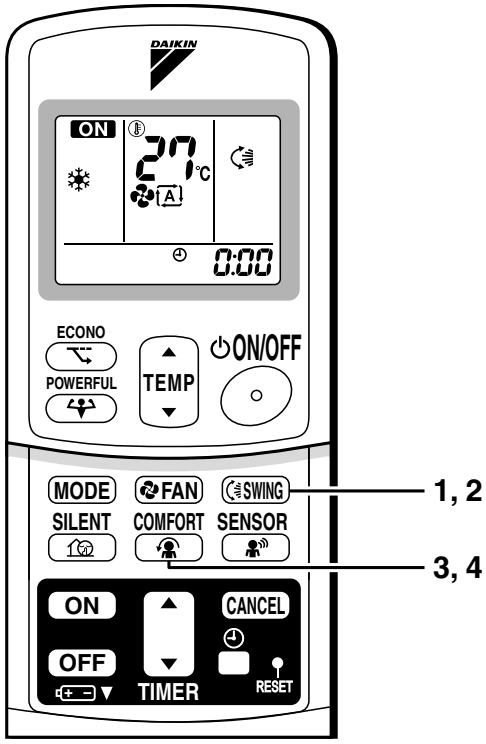
■ **Note on air flow rate setting**
- At smaller air flow rates, the cooling (heating) effect is also smaller.

2.6 Adjusting the Air Flow Direction

FTK(X)S20/25/35D, CTK(X)S50D

Adjusting the Air Flow Direction

You can adjust the air flow direction to increase your comfort.



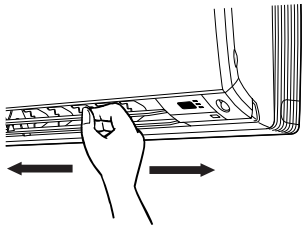
■ To adjust the horizontal blades (flaps)

1. **Press "SWING button".**
   - "" is displayed on the LCD and the flaps will begin to swing.
2. **When the flaps have reached the desired position, press "SWING button" once more.**
   The display will go blank.
   The flaps will stop moving.

■ To adjust the vertical blades (louvers)

Hold the knob and move the louvers.
(You will find a knob on the left-side and the right-side blades.)

- When the unit is installed in the corner of a room, the direction of the louvers should be facing away from the wall.
  If they face the wall, the wall will block off the wind, causing the cooling (or heating) efficiency to drop.



■ To start COMFORT AIRFLOW operation

3. Press “COMFORT AIRFLOW button”.

The flap position will change, preventing air from blowing directly on the occupants of the room.

- “ ” is displayed on the LCD.

⟨COOL/DRY⟩ The flap will go up.

⟨HEAT⟩ The flap will go down.

■ To cancel COMFORT AIRFLOW operation

4. Press “COMFORT AIRFLOW button” again.

- The flaps will return to the memory position from before COMFORT AIRFLOW mode.

Notes on COMFORT AIRFLOW operation

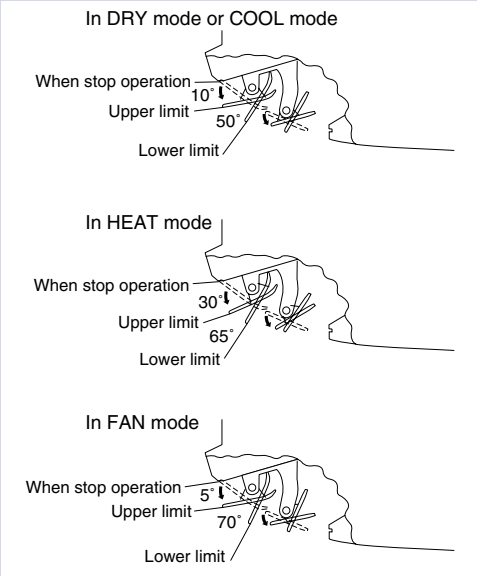
- POWERFUL operation and COMFORT AIRFLOW operation cannot be used at the same time. Priority is given to POWERFUL operation.

Notes on flaps and louvers angles

- When “ **SWING button** ” is selected, the flaps swinging range depends on the operation mode. (See the figure.)

■ **ATTENTION**

- Always use a remote controller to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, a fan is rotating at a high speed.



FTK(X)S20/25/35C, ATXS20/25/35D, ATXS20/25/35C

Adjusting the Air Flow Direction

You can adjust the air flow direction to increase your comfort.

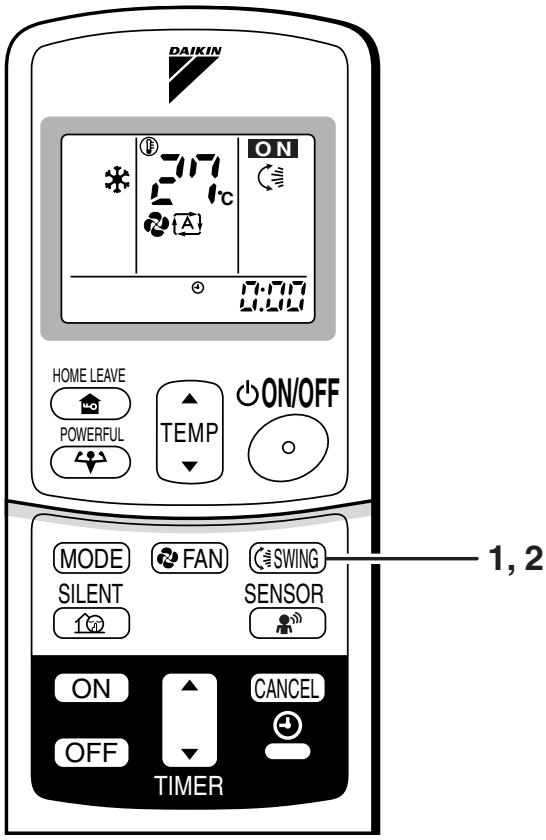
■ To adjust the horizontal blades (flaps)

1. **Press “SWING button”.**

   The display will light up and the flaps will begin to swing.

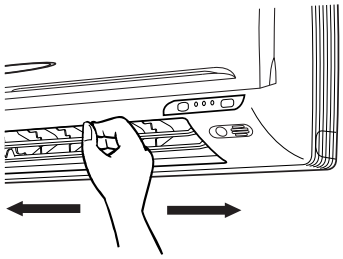
2. **When the flaps have reached the desired position, press “SWING button” once more.**

   The display will go blank.
   The flaps will stop moving.



■ To adjust the vertical blades (louvres)

Hold the knob and move the louvres.
(You will find a knob on the left-side and the right-side blades.)

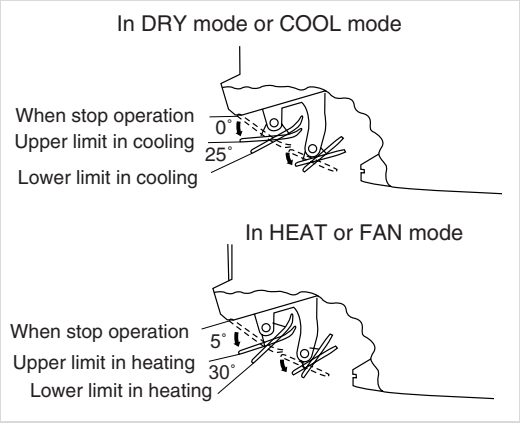


Notes on flaps and louvres angles

- When " **SWING button** " is selected, the flaps swinging range depends on the operation mode. (See the figure.)

■ **ATTENTION**

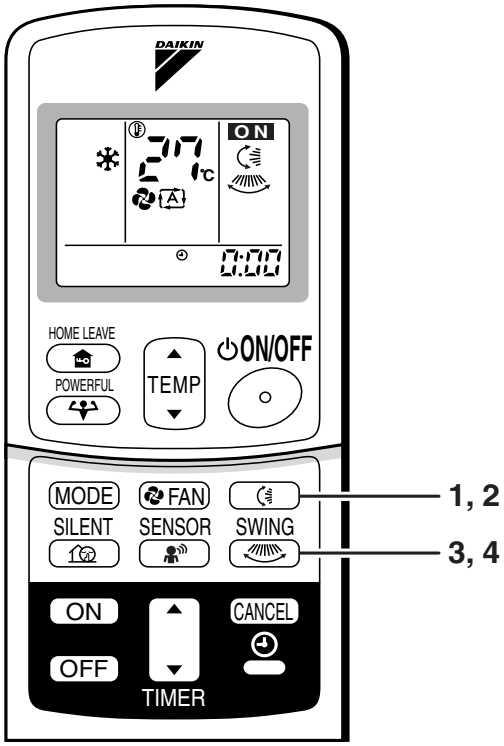
- Always use a remote controller to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvres. Inside the air outlet, a fan is rotating at a high speed.



FTK(X)S50/60/71B, ATXS50D, ATXS50C

Adjusting the Air Flow Direction

You can adjust the air flow direction to increase your comfort.



■ To adjust the horizontal blade (flap)

1. **Press "SWING button ".**
   - " " is displayed on the LCD.
2. **When the flap has reached the desired position, press "SWING button " once more.**
   - The flap will stop moving.

■ To adjust the vertical blades (louvers)

3. **Press "SWING button ".**
   - " " is displayed on the LCD.
4. **When the louvers have reached the desired position, press the "SWING button " once more.**
   - The louvers will stop moving.

■ To 3-D Airflow

1. 3. Press the "SWING button" and the "SWING button": the "" and "" display will light up and the flap and louvers will move in turn.

■ To cancel 3-D Airflow

2. 4. Press either the "SWING button" or the "SWING button"

Notes on louvers angles

■ **ATTENTION**

- Always use a remote controller to adjust the louvers angles. In side the air outlet, a fan is rotating at a high speed.

Notes on flap angle

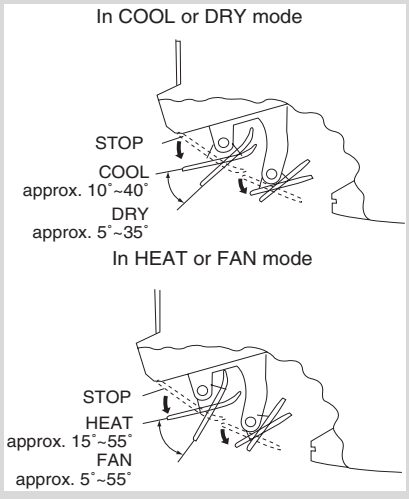
- When "**SWING button**" is selected, the flaps swinging range depends on the operation mode. (See the figure.)

Three-Dimensional (3-D) Airflow

- Using three-dimensional airflow circulates cold air, which tends to collected at the bottom of the room, and hot air, which tends to collect near the ceiling, throughout the room, preventing areas of cold and hot developing.

■ **ATTENTION**

- Always use a remote controller to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, fan is rotating at a high speed.



FLK(X)S25/35/50/60

Adjusting the Air Flow Direction

You can adjust the air flow direction to increase your comfort.

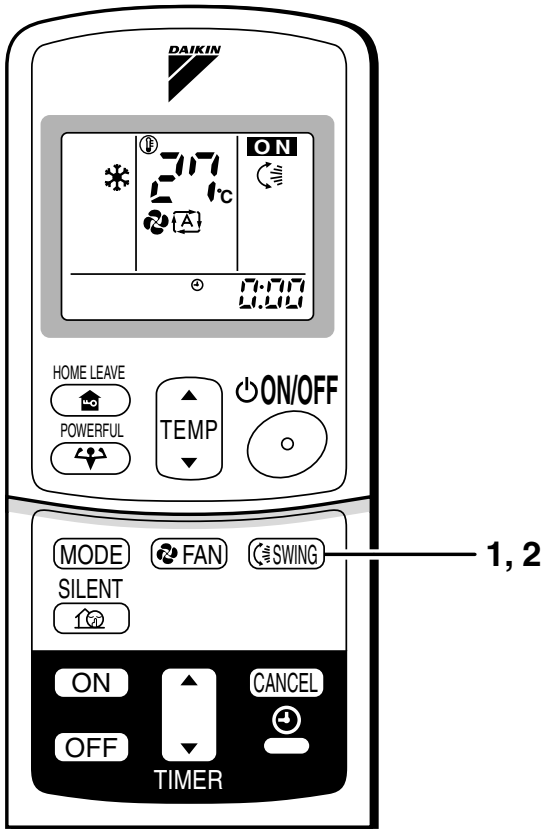
■ To adjust the horizontal blade (flap)

1. **Press “SWING button”.**

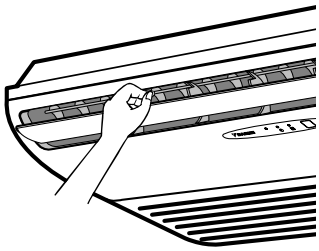
   The display will light up and the flaps will begin to swing.

2. **When the flaps have reached the desired position, press “SWING button” once more.**

   The display will go blank.
   The flaps will stop moving.



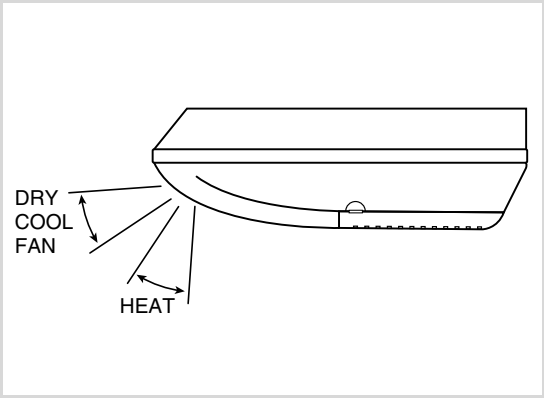
■ To adjust the vertical blades (louvres)



- When adjusting the louvre, use a robust and stable stool and watch your steps carefully.
  Hold the knob and move the louvres.
  (You will find a knob on the left side and the right side blades.)

Notes on flap and louvres angles

- Unless [SWING] is selected, you should set the flap at a near- horizontal angle in COOL or DRY mode to obtain the best performance.
- In COOL or DRY mode, if the flap is fixed at a downward position, the flap automatically moves in about 60 minutes to prevent condensation on it.



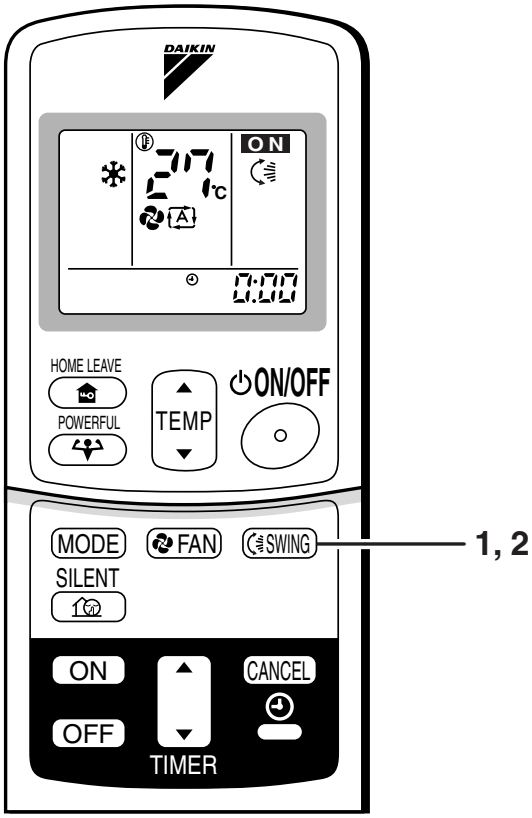
■ ATTENTION

- Always use a remote controller to adjust the flap angle.
  If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvres. Inside the air outlet, a fan is rotating at a high speed.

FVK(X)S25/35/50

Adjusting the Air Flow Direction

You can adjust the air flow direction to increase your comfort.



■ To adjust the horizontal blade (flap)

1. **Press "SWING button".**

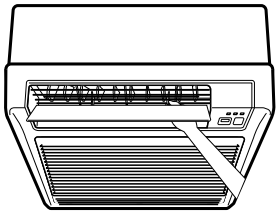
   The display will light up and the flaps will begin to swing.

2. **When the flaps have reached the desired position, press "SWING button" once more.**

   The display will go blank.
   The flaps will stop moving.

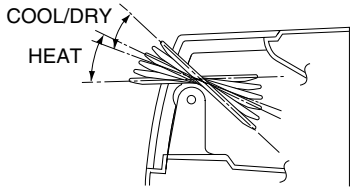
■ To adjust the vertical blades (louvres)

Hold the knob and move the louvre.
(You will find a knob on the left-side and the right-side blades.)



Notes on flap and louvers angle

- Unless [SWING] is selected, you should set the flap at a near-horizontal angle in HEAT mode and at a upward position in COOL or DRY mode to obtain the best performance.



■ **ATTENTION**

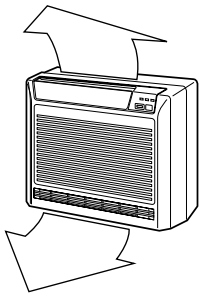
- When adjusting the flap by hand, turn off the unit, and use the remote controller to restart the unit.
- Be careful when adjusting the louvres. Inside the air outlet, a fan is rotating at a high speed.

■ Air flow selection

- Make air flow selection according to what suits you.

When setting the air flow selection switch to .

- Air conditioner automatically decides the appropriate blowing pattern depending on the operating mode/situation.

Operating mode	Situation	Blowing pattern
COOL mode	• When the room has become fully cool, or when one hour has passed since turning on the air conditioner.	• So that air does not come into direct contact with people, air is blown upper air outlet, room temperature is equlised.
	• At start of operation or other times when the room is not fully cooled.	 • Air is blown from the upper and lower air outlets for high speed cooling during COOL mode, and for filling the room with warm air during HEAT mode.
HEAT mode	• At times other than below. (Normal time.)	
	• At start or when air temperature is low.	• So that air does not come into direct contact with people. Air is blown upper air outlet.

- During Dry mode, so that cold air does not come into direct contact with people, air is blown upper air outlet.

When setting the air outlet selection switch to .

- Regardless of the operating mode or situation, air blows from the upper air outlet.
- Use this switch when you do not want air coming out of the lower air outlet. (While sleeping etc..)

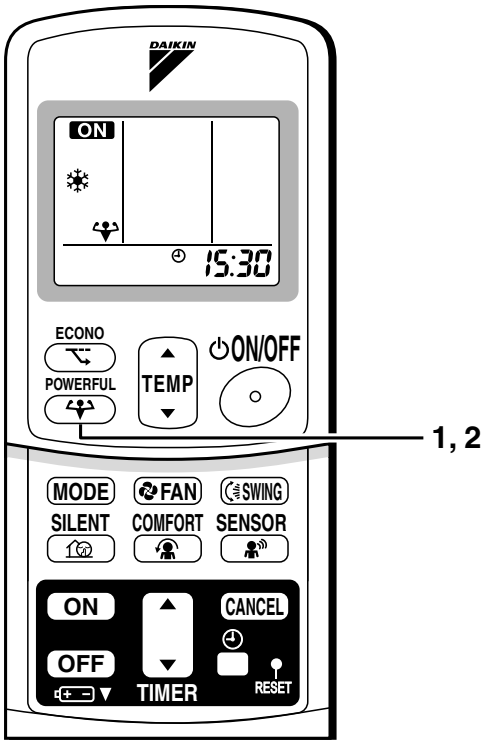
⚠ CAUTION

- Do not try to adjust the flap by hand.
- When adjusting by hand, the mechanism may not operate properly or condensation may drip from air outlets.

2.7 POWERFUL Operation

POWERFUL Operation

POWERFUL operation quickly maximizes the cooling (heating) effect in any operation mode. You can get the maximum capacity .



■ To start POWERFUL operation

1. **Press “POWERFUL button”.**
   - POWERFUL operation ends in 20 minutes. Then the system automatically operates again with the settings which were used before POWERFUL operation.
   - When using POWERFUL operation, there are some functions which are not available.
   - “ ” is displayed on the LCD.

■ To cancel POWERFUL operation

2. **Press “POWERFUL button” again.**
   - “ ” disappears from the LCD.

NOTE

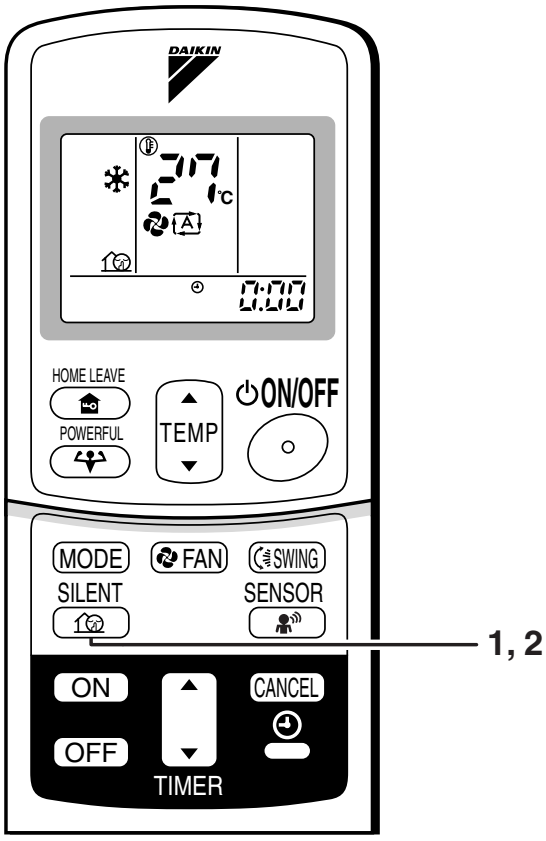
■ **Notes on POWERFUL operation**

- POWERFUL Operation cannot be used together with ECONO, SILENT, or COMFORT Operation. After-press priority is given.
- POWERFUL Operation can only be set when the unit is running. Pressing the operation stop button causes the settings to be canceled, and the “ ” disappears from the LCD.
- **In COOL and HEAT mode**
  To maximize the cooling (heating) effect, the capacity of outdoor unit must be increased and the air flow rate be fixed to the maximum setting.
  The temperature and air flow settings are not variable.
- **In DRY mode**
  The temperature setting is lowered by 2.5˚C and the air flow rate is slightly increased.
- **In FAN mode**
  The air flow rate is fixed to the maximum setting.
- **When using priority-room setting**
  See “Note for multi system”

2.8 OUTDOOR UNIT SILENT Operation

OUTDOOR UNIT SILENT Operation

OUTDOOR UNIT SILENT operation lowers the noise level of the outdoor unit by changing the frequency and fan speed on the outdoor unit. This function is convenient during night.



■ To start OUTDOOR UNIT SILENT operation

1. **Press “SILENT button”.**

■ To cancel OUTDOOR UNIT SILENT operation

2. **Press “SILENT button” again.**

NOTE

■ Note on OUTDOOR UNIT SILENT operation

- If using a multi system, this function will work only when the OUTDOOR UNIT SILENT operation is set on all operated indoor units.
  However, if using priority-room setting, see “Note for multi system”.
- This function is available in COOL, HEAT, and AUTO modes.
  (This is not available in FAN and DRY mode.)
- POWERFUL operation and OUTDOOR UNIT SILENT operation cannot be used at the same time.
  Priority is given to POWERFUL operation.
- If operation is stopped using the remote controller or the main unit ON/OFF switch when using OUTDOOR UNIT SILENT operation, “ ” will remain on the remote controller display.

2.9 ECONO Operation

ECONO Operation

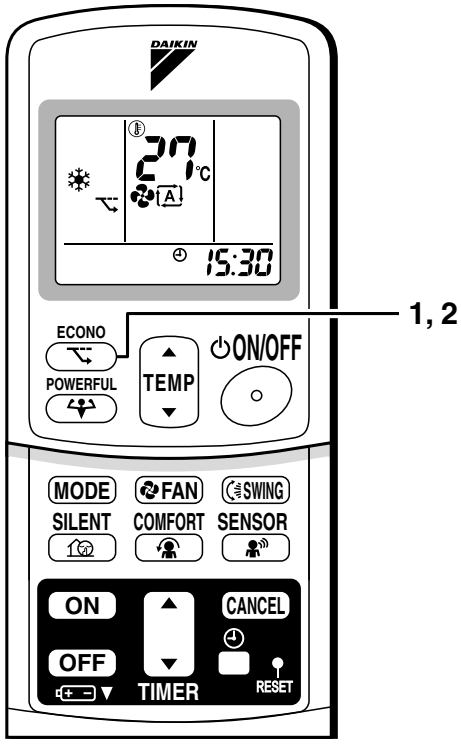
ECONO operation is a function which enables efficient operation by lowering the maximum power consumption value.

■ To start ECONO operation

1. **Press “ECONO button” .**
   - “ ” is displayed on the LCD.

■ To cancel ECONO operation

2. **Press “ECONO button” again.**
   - “ ” disappears from the LCD.



NOTE

- ECONO Operation can only be set when the unit is running. Pressing the operation stop button causes the settings to be canceled, and the “ ” disappears from the LCD.
- ECONO operation is a function which enables efficient operation by limiting the power consumption of the outdoor unit (operating frequency).
- ECONO operation functions in AUTO, COOL, DRY, and HEAT modes. The fan strength does not change in ECONO operation.
- POWERFUL operation and ECONO operation cannot be used at the same time. Priority is given to POWERFUL operation.
- Power consumption may not drop even if ECONO operation is used, when the level of power consumption is already low.

2.10 HOME LEAVE Operation

HOME LEAVE Operation

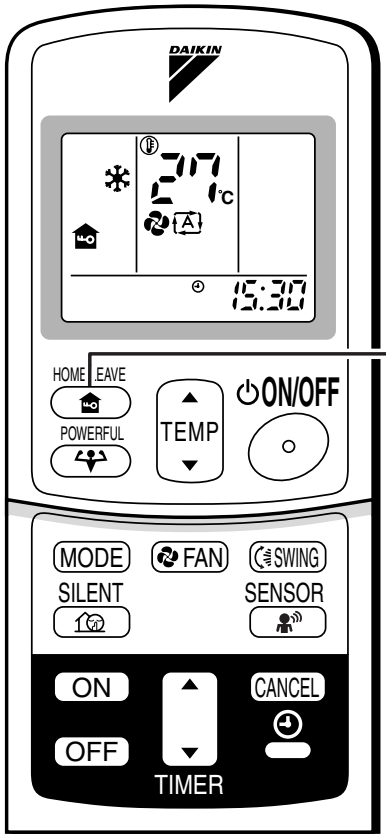
HOME LEAVE operation is a function which allows you to record your preferred temperature and air flow rate settings.

■ To start HOME LEAVE operation

1. **Press “HOME LEAVE button” .**
   - The HOME LEAVE lamp lights up.

■ To cancel HOME LEAVE operation

2. **Press “HOME LEAVE button” again.**
   - The HOME LEAVE lamp goes off.



Before using HOME LEAVE operation.

■ **To set the temperature and air flow rate for HOME LEAVE operation**

When using HOME LEAVE operation for the first time, please set the temperature and air flow rate for HOME LEAVE operation. Record your preferred temperature and air flow rate.

	Initial setting		Selectable range	
	temperature	Air flow rate	temperature	Air flow rate
Cooling	25°C	AUTO	18-32°C	5 step, AUTO and SILENT
Heating	25°C	AUTO	10-30°C	5 step, AUTO and SILENT

1. **Press “HOME LEAVE button”. Make sure “ ” is displayed in the remote controller display.**
2. **Adjust the set temperature with “ ▲ ” or “ ▼ ” as you like.**
3. **Adjust the air flow rate with “FAN” setting button as you like.**

Home leave operation will run with these settings the next time you use this function. To change the recorded information, repeat steps 1 – 3.

■ What's the HOME LEAVE operation

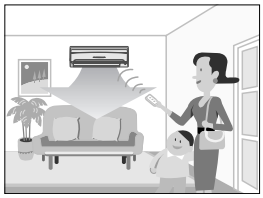
Is there a set temperature and air flow rate which is most comfortable, a set temperature and air flow rate which you use the most? HOME LEAVE operation is a function that allows you to record your favorite set temperature and air flow rate. You can start your favorite operation mode simply by pressing the HOME LEAVE button on the remote controller. This function is convenient in the following situations.

■ Useful in these cases.

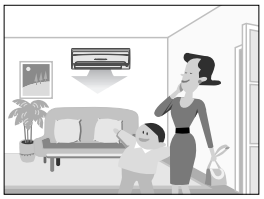
1.Use as an energy-saving mode

Set the temperature 2-3˚C higher (cooling) or lower (heating) than normal. Setting the fan strength to the lowest setting allows the unit to be used in energy-saving mode. Also convenient for use while you are out or sleeping.

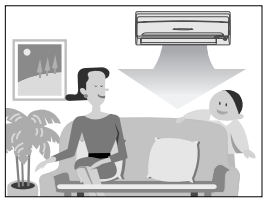
- **Every day before you leave the house...**



When you go out, push the "HOME LEAVE Operation" button, and the air conditioner will adjust capacity to reach the preset temperature for HOME LEAVE Operation.

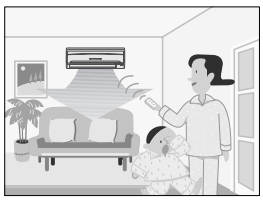


When you return, you will be welcomed by a comfortably air conditioned room.

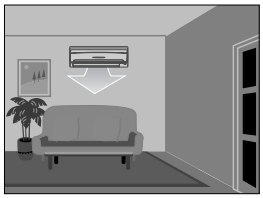


Push the "HOME LEAVE Operation" button again, and the air conditioner will adjust capacity to the set temperature for normal operation.

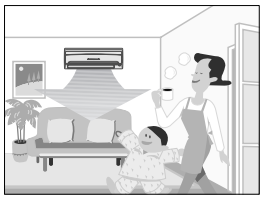
- **Before bed...**



Set the unit to HOME LEAVE Operation before leaving the living room when going to bed.



The unit will maintain the temperature in the room at a comfortable level while you sleep.



When you enter the living room in the morning, the temperature will be just right. Disengaging HOME LEAVE Operation will return the temperature to that set for normal operation. Even the coldest winters will pose no problem!

2.Use as a favorite mode

Once you record the temperature and air flow rate settings you most often use, you can retrieve them by pressing HOME LEAVE button. You do not have to go through troublesome remote control operations.

NOTE

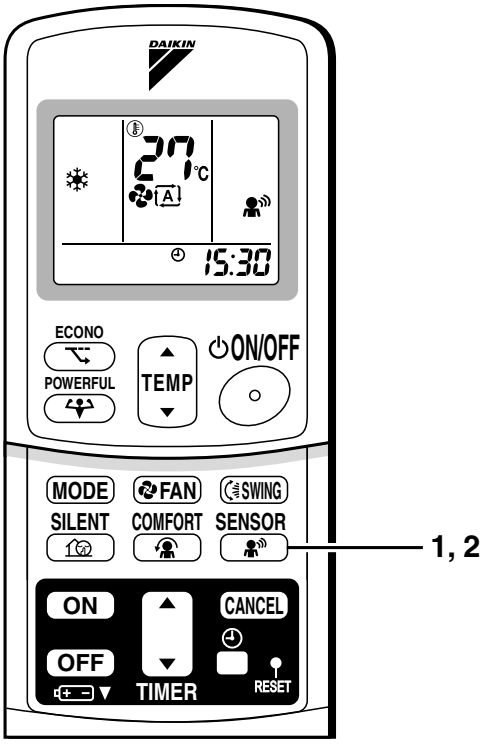
- Once the temperature and air flow rate for HOME LEAVE operation are set, those settings will be used whenever HOME LEAVE operation is used in the future. To change these settings, please refer to the "Before using HOME LEAVE operation" section above.
- HOME LEAVE operation is only available in COOL and HEAT mode. Cannot be used in AUTO, DRY, and FAN mode.
- HOME LEAVE operation runs in accordance with the previous operation mode (COOL or HEAT) before using HOME LEAVE operation.
- HOME LEAVE operation and POWERFUL operation cannot be used at the same time. Last button that was pressed has priority.
- The operation mode cannot be changed while HOME LEAVE operation is being used.
- When operation is shut off during HOME LEAVE operation, using the remote controller or the indoor unit ON/OFF switch, " " will remain on the remote controller display.

2.11 INTELLIGENT EYE Operation

FTK(X)S20/25/35D, CTK(X)S50D

INTELLIGENT EYE Operation

"INTELLIGENT EYE" is the infrared sensor which detects the human movement.



■ To start INTELLIGENT EYE operation

1. **Press "SENSOR button".**
   - " " is displayed on the LCD.

■ To cancel the INTELLIGENT EYE operation

2. **Press "SENSOR button" again.**
   - " " disappears from the LCD.

[EX.]

When somebody in the room
- **Normal operation**

⇩

When nobody in the room
- **20 min. after, start energy saving operation.**

⇩

Somebody back in the room
- **Back to normal operation.**

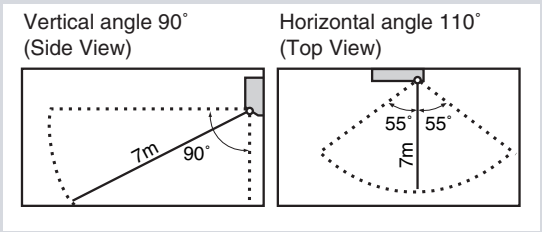
INTELLIGENT EYE Operation

“INTELLIGENT EYE” is useful for Energy Saving

■ **Energy saving operation**
- Change the temperature –2°C in heating / +2°C in cooling / +2°C in dry mode from set temperature.
- Decrease the air flow rate slightly in fan operation. (In FAN mode only)

Notes on “INTELLIGENT EYE”

- Application range is as follows.



- Sensor may not detect moving objects further than 7m away. (Check the application range)
- Sensor detection sensitivity changes according to indoor unit location, the speed of passersby, temperature range, etc.
- The sensor also mistakenly detects pets, sunlight, fluttering curtains and light reflected off of mirrors as passersby.
- INTELLIGENT EYE operatipon will not go on during powerful operation.
- Night set mode will not go on during you use INTELLIGENT EYE operation.

⚠ CAUTION

- Do not place large objects near the sensor.
  Also keep heating units or humidifiers outside the sensor’s detection area. This sensor can detect objects it shouldn’t as well as not detect objects it should.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

FTK(X)S20/25/35C, ATXS20/25/35D, ATXS20/25/35C

INTELLIGENT EYE Operation

"INTELLIGENT EYE" is the infrared sensor which detects the human movement.

■ To start INTELLIGENT EYE operation

1. Press "SENSOR button".

■ To cancel the INTELLIGENT EYE operation

2. Press "SENSOR button" again.

[EX.]

When somebody in the room

- **Normal operation**

⇩

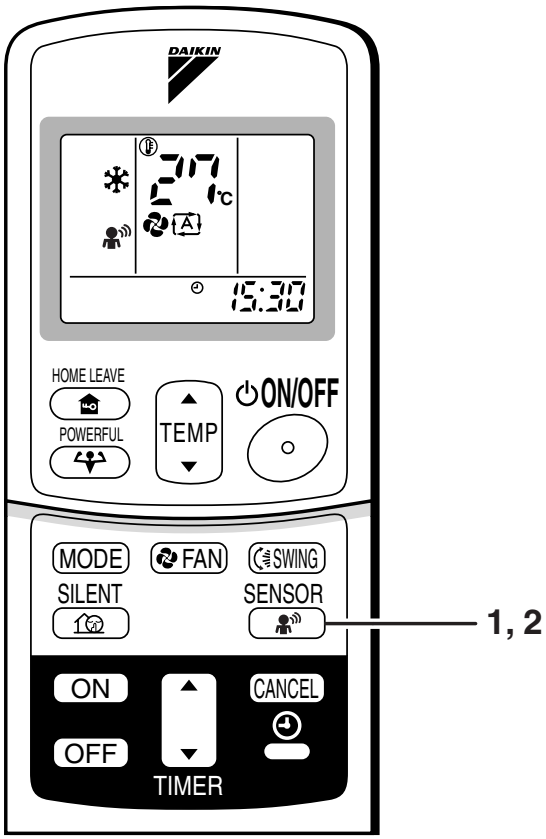
When nobody in the room

- **20 min. after, start energy saving operation.**

⇩

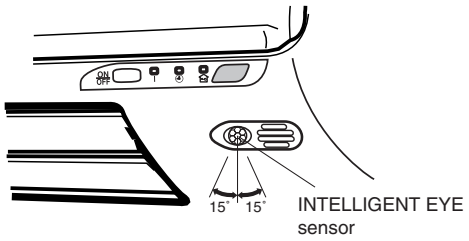
Somebody back in the room

- **Back to normal operation.**

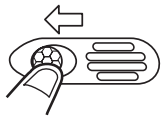


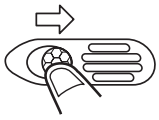
■ To adjust the angle of the INTELLIGENT EYE sensor

- You can adjust the angle of the INTELLIGENT EYE sensor to increase the detection area. (Adjustable angle: 15° to right and left of centre)



- Gently push and slide the sensor to adjust the angle.
- After adjusting the angle, wipe the sensor gently with a clean cloth, being careful not to scratch the sensor.


Moving the sensor to the left

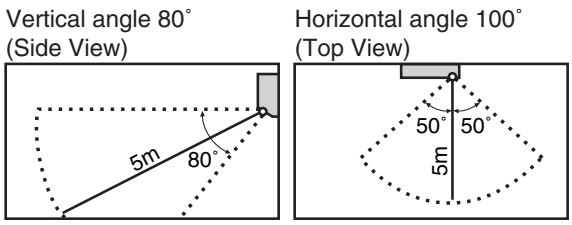

Moving the sensor to the right

“INTELLIGENT EYE” is useful for Energy Saving

■ **Energy saving operation**
- Change the temperature –2°C in heating / +2°C in cooling / +1°C in dry mode from set temperature.
- Decrease the air flow rate slightly in fan operation. (In FAN mode only)

Notes on “INTELLIGENT EYE”

- Application range is as follows.



- Sensor may not detect moving objects further than 5m away. (Check the application range)
- Sensor detection sensitivity changes according to indoor unit location, the speed of passersby, temperature range, etc.
- The sensor also mistakenly detects pets, sunlight, fluttering curtains and light reflected off of mirrors as passersby.
- INTELLIGENT EYE operatipon will not go on during powerful operation.
- Night set mode will not go on during you use INTELLIGENT EYE operation.

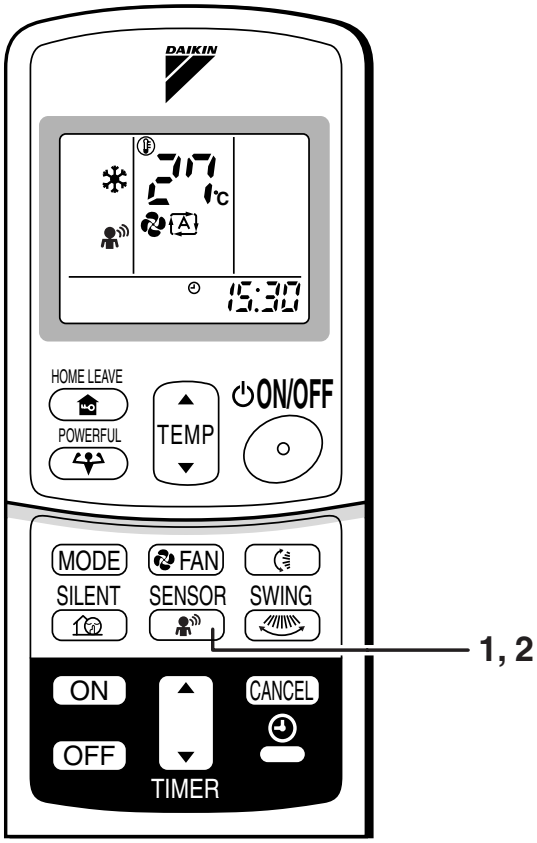
⚠ CAUTION

- Do not place large objects near the sensor.
  Also keep heating units or humidifiers outside the sensor’s detection area. This sensor can detect objects it shouldn’t as well as not detect objects it should.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

FTK(X)S50/60/71B, ATXS50D, ATXS50C

INTELLIGENT EYE Operation

"INTELLIGENT EYE" is the infrared sensor which detects the human movement.



■ To start INTELLIGENT EYE operation

1. **Press "SENSOR button".**

■ To cancel the INTELLIGENT EYE operation

2. **Press "SENSOR button" again.**

[EX.]

When somebody in the room

- **Normal operation**

⇩

When nobody in the room

- **20 min. after, start energy saving operation.**

⇩

Somebody back in the room

- **Back to normal operation.**

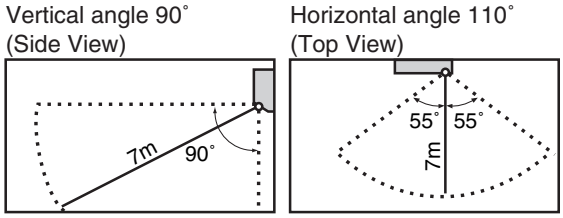
“INTELLIGENT EYE” is useful for Energy Saving

■ **Energy saving operation**

- Change the temperature –2°C in heating / +2°C in cooling / +1°C in dry mode from set temperature.
- Decrease the air flow rate slightly in fan operation. (In FAN mode only)

Notes on “INTELLIGENT EYE”

- Application range is as follows.



- Sensor may not detect moving objects further than 7m away. (Check the application range)
- Sensor detection sensitivity changes according to indoor unit location, the speed of passersby, temperature range, etc.
- The sensor also mistakenly detects pets, sunlight, fluttering curtains and light reflected off of mirrors as passersby.
- INTELLIGENT EYE operation will not go on during powerful operation.
- Night set mode will not go on during you use INTELLIGENT EYE operation.

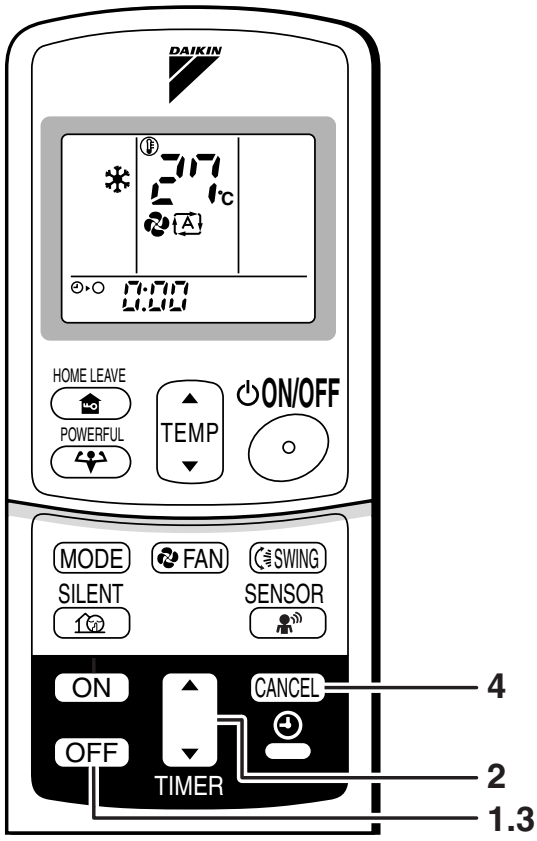
⚠ CAUTION

- Do not place large objects near the sensor.
  Also keep heating units or humidifiers outside the sensor’s detection area. This sensor can detect objects it shouldn’t as well as not detect objects it should.
- Do not hit or violently push the INTELLIGENT EYE sensor. This can lead to damage and malfunction.

2.12 TIMER Operation

TIMER Operation

Timer functions are useful for automatically switching the air conditioner on or off at night or in the morning. You can also use OFF TIMER and ON TIMER in combination.



■ To use OFF TIMER operation

- Check that the clock is correct.
  If not, set the clock to the present time.

1. Press “OFF TIMER button”.

0:00 is displayed.

⏲-○ blinks.

2. Press “TIMER Setting button” until the time setting reaches the point you like.

- Every pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the setting rapidly.

3. Press “OFF TIMER button” again.

- The TIMER lamp lights up.

■ To cancel the OFF TIMER operation

4. Press “CANCEL button”.

- The TIMER lamp goes off.

Notes

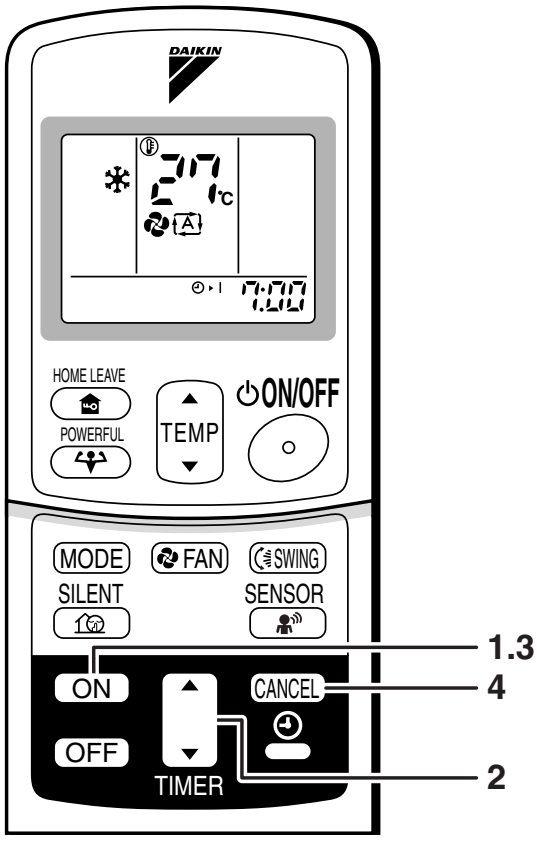
- When TIMER is set, the present time is not displayed.
- Once you set ON, OFF TIMER, the time setting is kept in the memory. (The memory is canceled when remote controller batteries are replaced.)
- When operating the unit via the ON/OFF Timer, the actual length of operation may vary from the time entered by the user.

■ NIGHT SET MODE

When the OFF TIMER is set, the air conditioner automatically adjusts the temperature setting (0.5°C up in COOL, 2.0°C down in HEAT) to prevent excessive cooling (heating) for your pleasant sleep.

■ To use ON TIMER operation

- Check that the clock is correct. If not, set the clock to the present time.



1. Press “ON TIMER button”.

7:00 is displayed.

⊙▸| blinks.

2. Press “TIMER Setting button” until the time setting reaches the point you like.

- Every pressing of either button increases or decreases the time setting by 10 minutes. Holding down either button changes the setting rapidly.

3. Press “ON TIMER button” again.

- The TIMER lamp lights up.

■ To cancel ON TIMER operation

4. Press “CANCEL button”.

- The TIMER lamp goes off.

■ To combine ON TIMER and OFF TIMER

- A sample setting for combining the two timers is shown below.

(Example)
Present time: 11:00 PM
(The unit operating)
OFF TIMER at 0:00 a.m.
ON TIMER at 7:00 a.m. } Combined

ATTENTION

■ **In the following cases, set the timer again.**

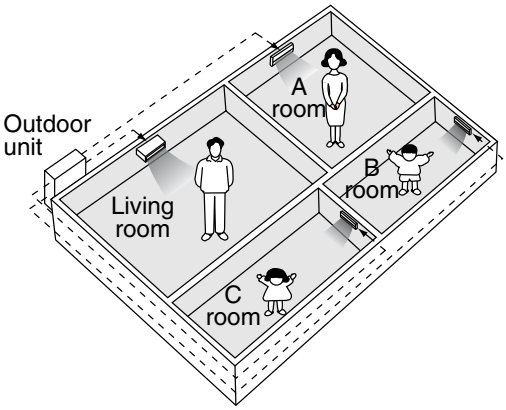
- After a breaker has turned OFF.
- After a power failure.
- After replacing batteries in the remote controller.

2.13 Note for Multi System

Note for Multi System

⟨⟨ What is a "Multi System"? ⟩⟩

This system has one outdoor unit connected to multiple indoor units.



■ Selecting the Operation Mode

1. With the Priority Room Setting present but inactive or not present

When more than one indoor unit is operating, priority is given to the first unit that was turned on.
In this case, set the units that are turned on later to the same operation mode (*1) as the first unit.
Otherwise, they will enter the Standby Mode, and the operation lamp will flash; this does not indicate malfunction.

(*1)

- COOL, DRY and FAN mode may be used at the same time.
- AUTO mode automatically selects COOL mode or HEAT mode based on the room temperature. Therefore, AUTO mode is available when selecting the same operation mode as that of the room with the first unit to be turned on.

⟨CAUTION⟩

Normally, the operation mode in the room where the unit is first run is given priority, but the following situations are exceptions, so please keep this in mind.
If the operation mode of the first room is **FAN Mode**, then using **Heating Mode** in any room after this will give priority to **heating.** In this situation, the air conditioner running in FAN Mode will go on standby, and the operation lamp will flash.

2. With the Priority Room Setting active

See "Priority Room Setting" on the next page.

■ NIGHT QUIET Mode (Available only for cooling operation)

NIGHT QUIET Mode requires initial programming during installation. Please consult your retailer or dealer for assistance. NIGHT QUIET Mode reduces the operation noise of the outdoor unit during the night time hours to prevent annoyance to neighbors.

- The NIGHT QUIET Mode is activated when the temperature drops 5°C or more below the highest temperature recorded that day. Therefore, when the temperature difference is less than 5°C, this function will not be activated.
- NIGHT QUIET Mode reduces slightly the cooling (heating) efficiency of the unit.

■ OUTDOOR UNIT SILENT Operation

1. With the Priority Room Setting present but inactive or not present

When using the OUTDOOR UNIT SILENT operation feature with the Multi system, set all indoor units to OUTDOOR UNIT SILENT operation using their remote controllers.
When clearing OUTDOOR UNIT SILENT operation, clear one of the operating indoor units using their remote controller. However OUTDOOR UNIT SILENT operation display remains on the remote controller for other rooms. We recommend you release all rooms using their remote controllers.

2. With the Priority Room Setting active

See "Priority Room Setting" on the next page.

■ Cooling / Heating Mode Lock (Available only for heat pump models)

The Cooling / Heating Mode Lock requires initial programming during installation.Please consult your retailer or dealer for assistance. The Cooling / Heating Mode Lock sets the unit forcibly to either Cooling or Heating Mode. This function is convenient when you wish to set all indoor units connected to the Multi system to the same operation mode.

■ Priority Room Setting

The Priority Room Setting requires initial programming during installation. Please consult your retailer or dealer for assistance.
The room designated as the Priority Room takes priority in the following situations;

1. Operation Mode Priority

As the operation mode of the Priority Room takes precedence, the user can select a different operation mode from other rooms.
〈Example〉
* Room A is the Priority Room in the examples.
When COOL mode is selected in Room A while operating the following modes in Room B,C and D :

Operation mode in Room B, C and D	Status of Room B, C and D when the unit in Room A is in COOL mode
COOL or DRY or FAN	Current operation mode maintained
HEAT	The unit enters Standby Mode. Operation resumes when the Room A unit stops operating.
AUTO	If the unit is set to COOL mode, operation continues. If set to HEAT mode, it enters Standby Mode. Operation resumes when the Room A unit stops operating.

2. Priority when POWERFUL operation is used

〈Example〉
* Room A is the Priority Room in the examples.
The indoor units in Rooms A,B,C and D are all operating. If the unit in Room A enters POWERFUL operation, operation capacity will be concentrated in Room A. In such a case, the cooling (heating) efficiency of the units in Rooms B,C and D may be slightly reduced.

3. Priority when using OUTDOOR UNIT SILENT operation

〈Example〉
* Room A is the Priority Room in the examples.
Just by setting the unit in Room A to SILENT operation, the air conditioner starts OUTDOOR UNIT SILENT operation.
You don't have to set all the operated indoor units to SILENT operation.

■ Maximum Power Input Limitation

- The Maximum Power Input Limitation needs to be set when the unit is installed. Contact DAIKIN dealer.
- This function limits the power input of the unit to 1700W. It is recommended for locations with low-capacity circuit breakers.

(*2) **List of functions and applicable models**

	2MKS / 2AMKS	2MXS / 2AMXS	3MKS	3MXS	4MKS	4MXS
Priority Room Setting	—	—	○	○	○	○
NIGHT QUIET Mode	—	—	○	○	○	○
Cooling/Heating Mode Lock	—	—	—	○	—	○
Maximum Power Input Limitation	○	—	○	—	—	—

○ Function available — Function unavailable

NOTE

- Cooling capacity will drop if the Maximum Power Input Limitation is used.

2.14 Care and Cleaning

FTK(X)S20/25/35D, CTK(X)S50D

Care and Cleaning

⚠ CAUTION Before cleaning, be sure to stop the operation and turn the breaker OFF.

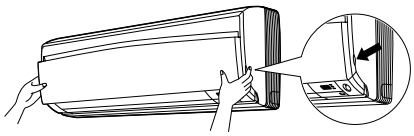
Units

■ Indoor unit, Outdoor unit and Remote controller

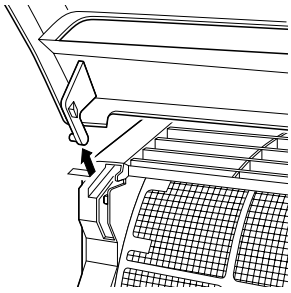
1. **Wipe them with dry soft cloth.**

■ Front panel

1. **Open the front panel.**
   - Hold the panel by the tabs on the two sides and lift it unitl it stops with a click.

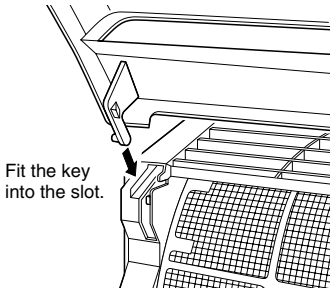


2. **Remove the front panel.**
   - Lift the front panel up, slide it slightly to the right, and remove it from the horizontal axle.



3. **Clean the front panel.**
   - Wipe it with a soft cloth soaked in water.
   - Only neutral detergent may be used.
   - In case of washing the panel with water, dry it with cloth, dry it up in the shade after washing.

4. **Attach the front panel.**
   - Set the 2 keys of the front panel into the slots and push them in all the way.
   - Close the front panel slowly and push the panel at the 3 points.
     (1 on each side and 1 in the middle.)

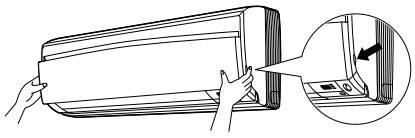


⚠ CAUTION

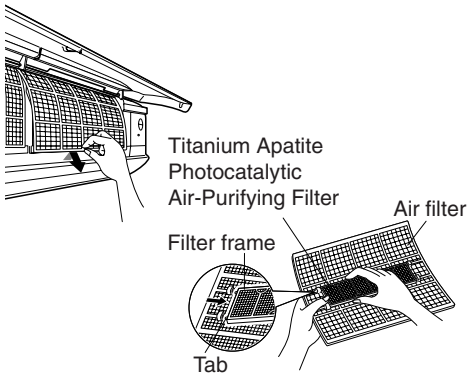
- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40 °C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front panel is securely fixed.

Filters

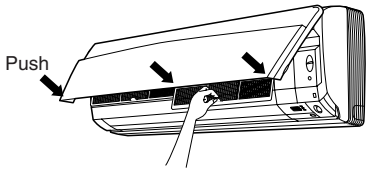
1. **Open the front panel.**



2. **Pull out the air filters.**
   - Push a little upwards the tab at the center of each air filter, then pull it down.
3. **Take off the Titanium Apatite Photocatalytic Air-Purifying Filter.**
   - Hold the recessed parts of the frame and unhook the four claws.

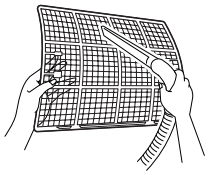


4. **Clean or replace each filter.**
   See below.
5. **Set the air filter and Titanium Apatite Photocatalytic Air-Purifying Filter as they were and close the front panel.**
   - Insert claws of the filters into slots of the front panel. Close the front panel slowly and push the panel at the 3 points. (1 on each side and 1 in the middle.)

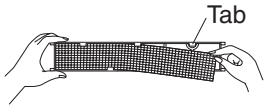


■ Air Filter

1. **Wash the air filters with water or clean them with vacuum cleaner.**
   - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
   - It is recommended to clean the air filters every two weeks.



■ Titanium Apatite Photocatalytic Air-Purifying Filter.



The Titanium Apatite Photocatalytic Air-Purifying Filter can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.

[Maintenance]

1. **Remove dust with a vacuum cleaner and wash lightly with water.**
2. **If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.**
3. **Do not remove filter from frame when washing with water.**
4. **After washing, shake off remaining water and dry in the shade.**
5. **Since the material is made out of paper, do not wring out the filter when removing water from it.**

[Replacement]

1. **Remove the tabs on the filter frame and replace with a new filter.**
   - Dispose of the old filter as flammable waste.

NOTE

- Operation with dirty filters:
  (1) cannot deodorize the air. (2) cannot clean the air.
  (3) results in poor heating or cooling. (4) may cause odour.
- To order Titanium Apatite Photocatalytic Air-Purifying Filter contact to the service shop there you bought the air conditioner.
- Dispose of old filters as burnable waste.

Item	Part No.
Titanium Apatite Photocatalytic Air-Purifying Filter. (without frame) 1 set	KAF970A46

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation. • If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

Before a long idle period

1. **Operate the "FAN only" for several hours on a fine day to dry out the inside.**
   - Press "MODE selector button" and select "FAN" operation.
   - Press "ON/OFF button" and start operation.
2. **Clean the air filters and set them again.**
3. **Take out batteries from the remote controller.**
4. **Turn OFF the breaker for the room air conditioner.**
   - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

FTK(X)S20/25/35C, ATXS20/25/35D, ATXS20/25/35C

Care and Cleaning

⚠ CAUTION Before cleaning, be sure to stop the operation and turn the breaker OFF.

Units

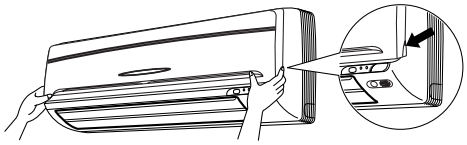
■ Indoor unit, Outdoor unit and Remote controller

1. Wipe them with dry soft cloth.

■ Front grille

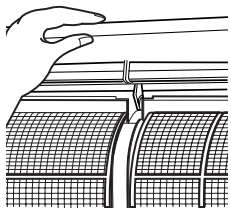
1. Open the front grille.

- Hold the grille by the tabs on the two sides and lift it unitl it stops with a click.



2. Remove the front grille.

- Supporting the front grille with one hand, release the lock by sliding down the knob with the other hand.
- To remove the front grille, pull it toward yourself with both hands.

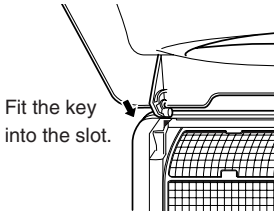


3. Clean the front grille

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the grille with water, dry it with cloth, dry it up in the shade after washing.

4. Attach the front grille

- Set the 3 keys of the front grille into the slots and push them in all the way.
- Close the front grille slowly and push the grille at the 3 points.
  (1 on each sides and 1 in the middle.)
- Check to see if the rotating axis in the upper center section is moving.

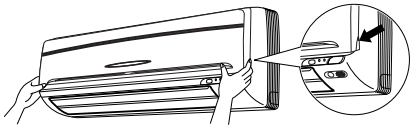


⚠ CAUTION

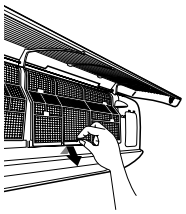
- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front grille, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front grille, support the grille securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40 °C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front grille is securely fixed.

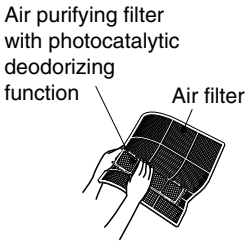
Filters

1. **Open the front grille.**
2. **Pull out the air filters.**
   - Push a little upwards the tab at the center of each air filter, then pull it down.

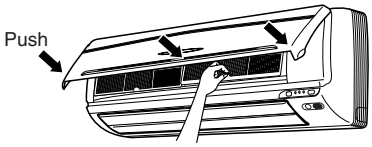


3. **Take off the air purifying filter with photocatalytic deodorizing function.**
   - Hold the recessed parts of the frame and unhook the four claws.



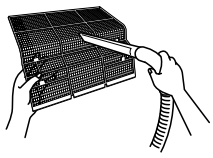


4. **Clean or replace each filter.**
   See below.
5. **Set the air filter and the air purifying filter with photocalytic deodorizing function as they were and close the front grille.**
   - Insert claws of the filters into slots of the front grille. Close the front grille slowly and push the grille at the 3 points. (1 on each side and 1 in the middle.)

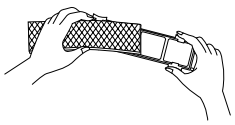


■ Air Filter

1. **Wash the air filters with water or clean them with vacuum cleaner.**
   - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
   - It is recommended to clean the air filters every two weeks.



■ Air purifying filter with photocatalytic deodorizing function. (gray)



The Air purifying filter with photocatalytic deodorizing function can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.

[Maintenance]

1. **Remove dust with a vacuum cleaner and wash lightly with water.**
2. **If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.**
3. **Do not remove filter from frame when washing with water.**
4. **After washing, shake off remaining water and dry in the shade.**
5. **Since the material is made out of paper, do not wring out the filter when removing water from it.**

[Replacement]

1. **Remove the tabs on the filter frame and replace with a new filter.**
   - Dispose of the old filter as flammable waste.

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation. • If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

■ Before a long idle period

1. **Operate the "FAN only" for several hours on a fine day to dry out the inside.**
   - Press "MODE" button and select "FAN" operation.
   - Press "ON/OFF" button and start operation.
2. **After operation stops, turn off the breaker for the room air conditioner.**
3. **Clean the air filters and set them again.**
4. **Take out batteries from the remote controller.**
   - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

NOTE

- Operation with dirty filters:
  (1) cannot deodorize the air. (2) cannot clean the air.
  (3) results in poor heating or cooling. (4) may cause odour.
- To order air purifying filter with photocatalytic deodorizing function contact to the service shop there you bought the air conditioner.
- Dispose of old filters as burnable waste.

Item	Part No.
Air purifying filter with photocatalytic deodorizing function. (with frame) 1 set	KAF918A43
Air purifying filter with photocatalytic deodorizing function. (without frame) 1 set	KAF918A44

FTK(X)S50/60/71B, ATXS50D, ATXS50C

Care and Cleaning

⚠ CAUTION **Before cleaning, be sure to stop the operation and turn the breaker OFF.**

Units

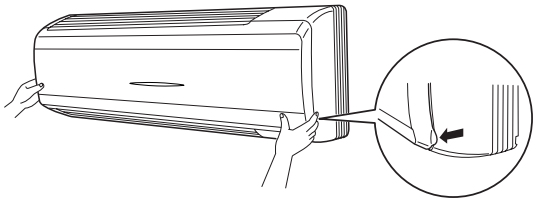
■ Indoor unit, Outdoor unit and Remote controller

1. Wipe them with dry soft cloth.

■ Front grille

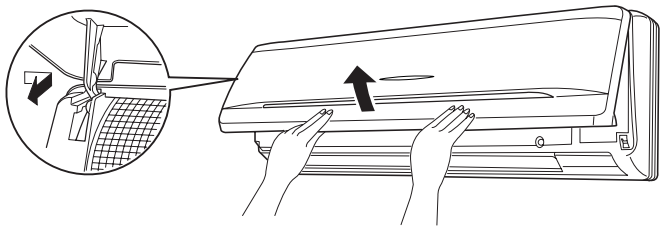
1. Open the front grille.

- Hold the grille by the tabs on the two sides and lift it until it stops with a click.



2. Remove the front grille.

- Open the front panel further while sliding it to either the left or right and pulling it toward you. This will disconnect the rotation dowel on one side. Then disconnect the rotation dowel on the other side in the same manner.

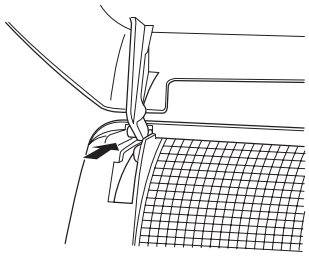


3. Clean the front grille

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the grille with water, dry it with cloth, dry it up in the shade after washing.

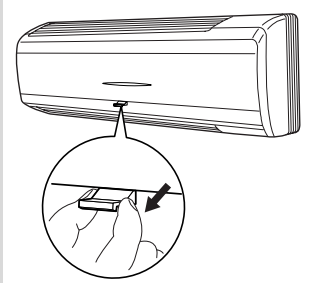
4. Attach the front grille

- Align the rotation dowels on the left and right of the front panel with the slots, then push them all the way in.
- Close the front panel slowly. (Press the panel at both sides and the center.)



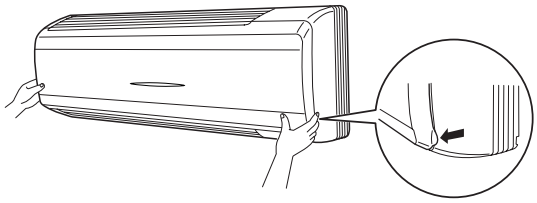
⚠ CAUTION

- When the packaging materials are attached to the front panel, please remove them.
- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front grille, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front grille, support the grille securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40 °C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front grille is securely fixed.

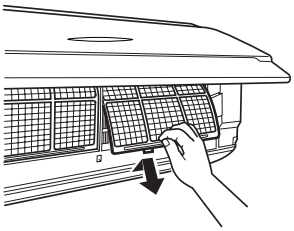


Filters

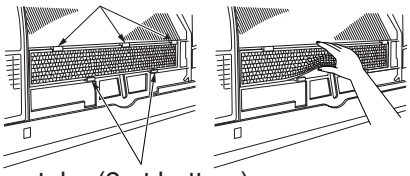
1. **Open the front grille.**
2. **Pull out the air filters.**
   - Push a little upwards the tab at the center of each air filter, then pull it down.



3. **Take off the air purifying filter with photocatalytic deodorizing function.**
   - Press the top of the air-cleaning filter onto the tabs (3 tabs at top). Then press the bottom of the filter up slightly, and press it onto the tabs (2 at bottom)(3 at bottom).

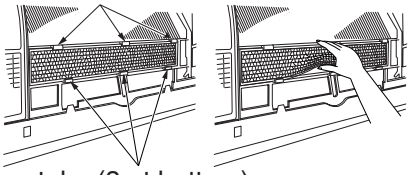


tabs (3 tabs at top)



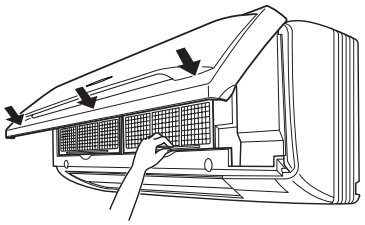
tabs (2 at bottom)
50class

tabs (3 tabs at top)



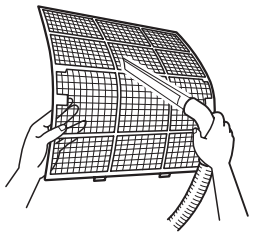
tabs (3 at bottom)
60,71class

4. **Clean or replace each filter.**
   See below.
5. **Set the air filter, air purifying filter with photocalytic deodorizing function as they were and close the front grille.**
   - Press the front panel at both sides and the center.



■ Air Filter

1. **Wash the air filters with water or clean them with vacuum cleaner.**
   - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
   - It is recommended to clean the air filters every two weeks.



■ Air purifying filter with photocatalytic deodorizing function. (gray)

The air purifying filter with photocatalytic deodorizing function can be renewed by washing it with water once every 6 months. We recommend replacing it once every 3 years.

[Maintenance]

1. **Remove dust with a vacuum cleaner and wash lightly with water.**
2. **If it is very dirty, soak it for 10 to 15 minutes in water mixed with a neutral cleaning agent.**
3. **After washing, shake off remaining water and dry in the shade.**
4. **Since the material is made out of paper, do not wring out the filter when removing water from it.**

[Replacement]

1. **Remove the tabs on the filter frame and replace with a new filter.**
   - Dispose of the old filter as flammable waste.

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the earth wire is not disconnected or broken.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation. • If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

■ Before a long idle period

1. Operate the “fan only” for several hours on a fine day to dry out the inside.

- Press “MODE” button and select “fan”operation.
- Press “ON/OFF” button and start operation.

2. Clean the air filters and set them again.

3. Take out batteries from the remote controller.

4. Turn OFF the breaker for the room air conditioner.

- When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

NOTE

- Operation with dirty filters:
  (1) cannot deodorize the air. (2) cannot clean the air.
  (3) results in poor heating or cooling. (4) may cause odour.
- To order air purifying filter with photocatalytic deodorizing function contact to the service shop there you bought the air conditioner.
- Dispose of old air filter as non-burnable and photocatalytic deodorizing filters as burnable waste.

Item	Part No.
Air purifying filter with photocatalytie deodorizing function. (without frame) 1 set	KAF952A42

FDK(X)S25/35C, CDK(X)S50/60C

Care and Cleaning

⚠ CAUTION

- **Only a qualified service person is allowed to perform maintenance.**
- **Before cleaning, be sure to stop the operation and turn the breaker OFF.**

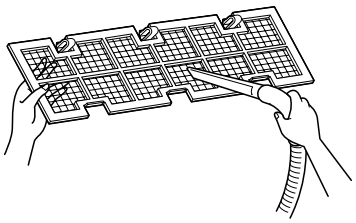
■ Cleaning the air filter.

1.Removing the air filter.

- Rear suction
  Pull the bottom side of the air filter backwards, over the 3 bends.
- Bottom suction
  Pull the filter over the 3 bends situated at the backside of the unit.

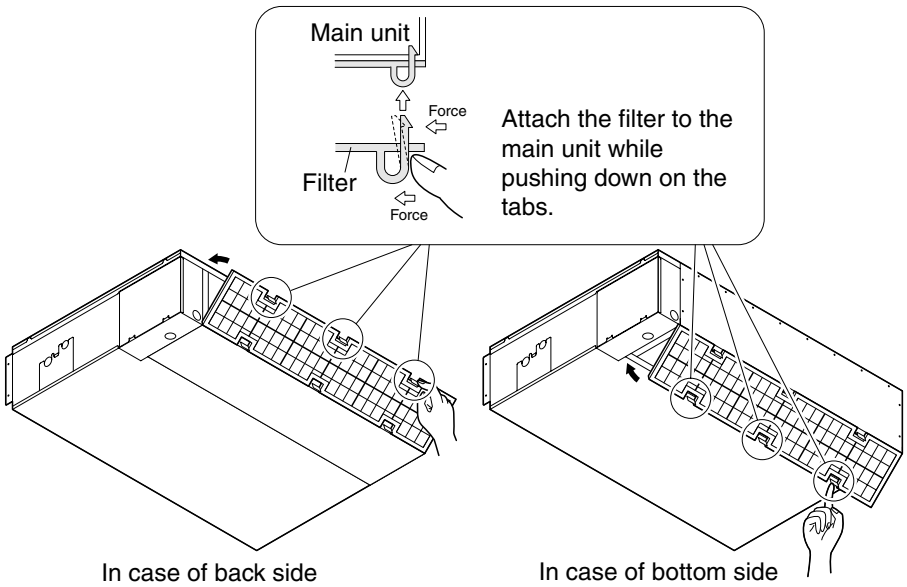
2.Cleaning the air filter.

Remove dust from the air filter using a vacuum cleaner and gently rinse them in cool water. Do not use detergent or hot water to avoid filter shrinking or deformation. After cleaning dry them in the shade.



3.Replacing the air filter.

- Rear suction
  Hook the filter behind the flap situated at the top of the unit and push the other side gently over the 3 bends.
- Bottom suction
  Hook the filter behind the flap situated at the middle of the unit and push the other side gently over the 3 bends.



■ Cleaning the drain pan

- Clean the drain pan periodically, or drain piping may be clogged with dust and may result in water leakage. Ask your DAIKIN dealer to clean them.
- Prepare a cover locally to prevent any dust in the air around the indoor unit from getting in the drain pan, if there is a great deal of dust present.

CAUTION

- Do not operate the air conditioner without filters, this to avoid dust accummulation inside the unit.
- Do not remove the air filter except when cleaning.
  Unnecessary handling may damage the filter.
- Do not use gasoline, benzene, thinner, polishing powder, liquid insecticide, It may cause discoloring or warping.
- Do not let the indoor unit get wet. It may cause an electric shock or a fire.
- Operation with dusty air filters lowers the cooling and heating capacity and wastes energy.
- The suction grille is option.
- Do not use water or air of 50°C or higher for cleaning air filters and outside panels.

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the earth wire is not disconnected or broken.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation. • If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

■ Before a long idle period

1. **Operate the “fan only” for several hours on a fine day to dry out the inside.**
   - Press “MODE” button and select “fan”operation.
   - Press “ON/OFF” button and start operation.
2. **Clean the air filters and set them again.**
3. **Take out batteries from the remote controller.**
4. **Turn OFF the breaker for the room air conditioner.**
   - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

FLK(X)S25/35/50/60

Care and Cleaning

⚠ CAUTION **Before cleaning, be sure to stop the operation and turn the breaker OFF.**

Units

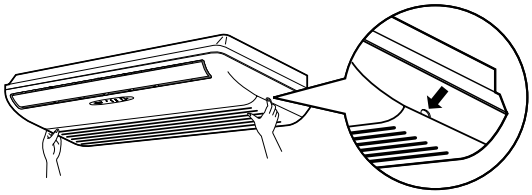
■ Indoor unit, Outdoor unit and Remote controller

1. Wipe them with dry soft cloth.

■ Front grille

1. Open the front grille.

- Hold the grille by the tabs on the two sides and lift it unitl it stops.

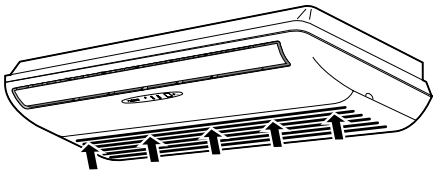


2. Clean the front grille

- Wipe it with a soft cloth soaked in water.
- Only neutral detergent may be used.
- In case of washing the grille with water, dry it with cloth, dry it up in the shade after washing.

3. Close the front grille

- Push the grille at the 5 points indicated by ⬆.
- Operation without air filters may result in troubles as dust will accumulate inside the indoor unit.

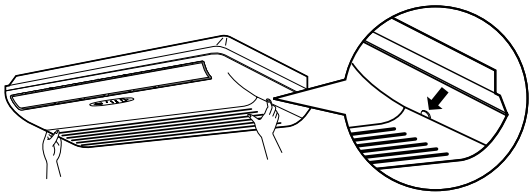


⚠ CAUTION

- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When opening and closing the front grille, use a robust and stable stool and watch your steps carefully.
- When opening and closing the front grille, support the grille securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40 °C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front grille is securely fixed.

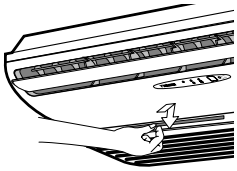
Filters

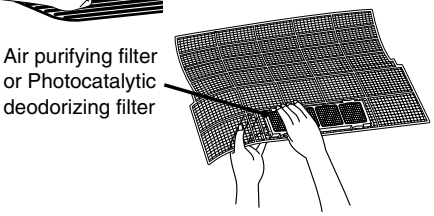
1. **Open the front grille.**
2. **Pull out the air filters.**
   - Push upwards the tab at the center of each air filter, then pull it down.



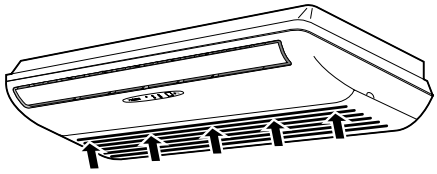
3. **Take off the air purifying filter, photocatalytic deodorizing filter.**
   - Hold the recessed parts of the frame and unhook the four claws.
4. **Clean or replace each filter.**

   See below.



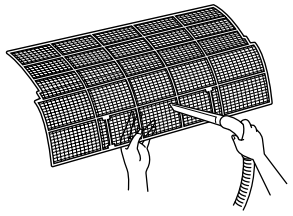


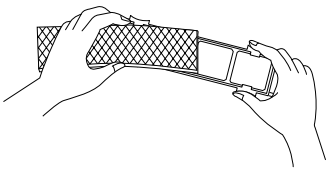
5. **Set the air filter, air purifying filter and photocatalytic deodorizing filter as they were and close the front grille.**
   - Insert claws of the filters into slots of the front grille.
   - Push the grille at the 5 points.



■ Air Filter

1. **Wash the air filters with water or clean them with vacuum cleaner.**
   - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
   - It is recommended to clean the air filters every two weeks.





■ Air Purifying Filter (green)

(Replace approximately once every 3 months.)

1. **Detach the filter element and attach a new one.**
   - Insert with the green side up.
   - It is recommended to replace the air purifying filter every three months.

■ Photocatalytic Deodorizing Filter (gray)

[Maintenance]

1. **Dry the photocatalytic deodorizing filter in the sun.**
   - After removing the dust with a vacuum cleaner, place the filter in the sun for approximately 6 hours. By drying the photocatalytic deodorizing filter in the sun, its deodorizing and antibacterial capabilities are regenerated.
   - Because the filter material is paper, it can not be cleaned with water.
   - It is recommended dry the filter once every 6 months.

[Replacement]

1. **Detach the filter element and attach a new one.**

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the earth wire is not disconnected or broken.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation. • If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

■ Before a long idle period

1. Operate the “fan only” for several hours on a fine day to dry out the inside.

- Press “MODE” button and select “fan”operation.
- Press “ON/OFF” button and start operation.

2. Clean the air filters and set them again.

3. Take out batteries from the remote controller.

4. Turn OFF the breaker for the room air conditioner.

- When a multi outdoor unit is connected, make sure the heating operation is not used at the other room before you use the fan operation.

NOTE

- Operation with dirty filters :
  (1) cannot deodorize the air. (2) cannot clean the air.
  (3) results in poor heating or cooling. (4) may cause odour.
- The air purifying filter and Photocatalytic deodorizing filter cannot be reused, even if washed.
- In principle, there is no need to replace the photocatalytic deodorizing filter. Remove the dust periodically with a vacuum cleaner. However, it is recommended to replace the filter in the following cases.
  (1) The paper material is torn or broken during cleaning.
  (2) The filter has become extremely dirty after long use.
- To order air purifying filter or Photocatalytic deodorizing filter, contact to the service shop where you bought the air conditioner.
- Dispose of old air filters as non-burnable waste and Photocatalytic deodorizing filters as burnable waste.

Item	Part No.
Photocatalytic deodorizing filter (with frame)	KAZ917B41
Photocatalytic deodorizing filter (without frame)	KAZ917B42
Air purifying filter (with frame)	KAF925B41
Air purifying filter (without frame)	KAF925B42

FVK(X)S25/35/50

Care and Cleaning

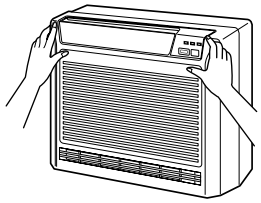
⚠ CAUTION **Before cleaning, be sure to stop the operation and turn the breaker OFF.**

Units

■ Indoor unit, Outdoor unit and Remote controller

1. Wipe them with dry soft cloth.

■ Front grille

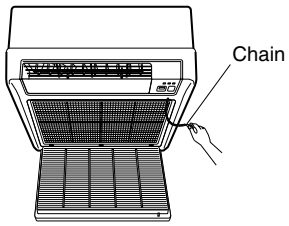


1. Open the front grille.

- Press the two PUSH places on the left and right of the front grille.

2. Remove the front grille.

- Remove the chain.
- Allowing the grille to fall forward will enable you to remove it.

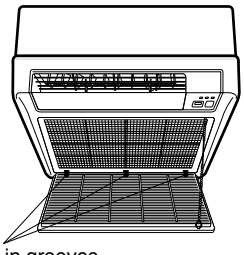


3. Clean the front grille

- Wipe softly with a damp cloth.
- Only neutral detergent may be used.
- In case of washing the grille with water, dry it with cloth, dry it up in the shade after washing.

4. Attach the front grille.

- Insert the front grille into the grooves of the unit (3 places).
- Attach the chain to the right, inner-side of the front grille.
- Close the grille slowly.



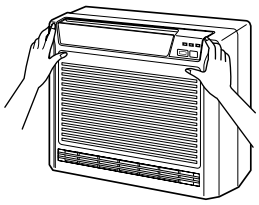
Place front grille in grooves.

⚠ CAUTION

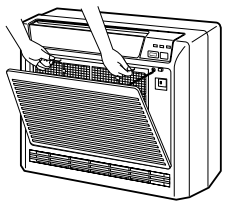
- Hold the front grille firmly so that it does not fall.
- Do not touch the metal parts on the inside of the indoor unit, as it may result in injury.
- When removing or attaching the front grille, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front grille, support the grille securely with hand to prevent it from falling.
- For cleaning, do not use hot water above 40 °C, benzine, gasoline, thinner, nor other volatile oils, polishing compound, scrubbing brushes, nor other hand stuff.
- After cleaning, make sure that the front grille is securely fixed.

Filters

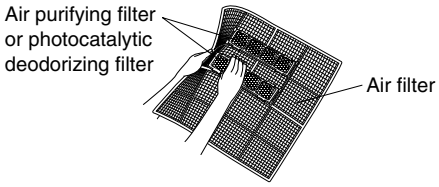
1. **Open the front grille.**

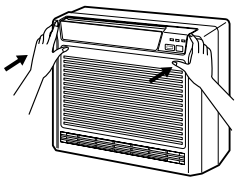


2. **Remove the air filter.**
   - Press the claws on the right and left of the air filter down slightly, then pull upward.



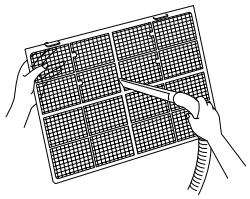
3. **Take off the air purifying filter, Photocatalytic deodorizing filter.**
   - Hold the tabs of the frame, and remove the claws in 4 places.
4. **Clean or replace each filter.**
   See below.
5. **Set the air filter, air purifying filter and photocatalytic deodorizing filter as they were and close the front grille.**
   - Operation without air filters may result in troubles as dust will accumulate inside the indoor unit.





■ Air Filter

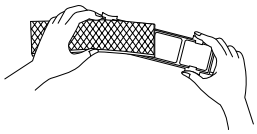
1. **Wash the air filters with water or clean them with vacuum cleaner.**
   - If the dust does not come off easily, wash them with neutral detergent thinned with lukewarm water, then dry them up in the shade.
   - It is recommended to clean the air filters every two weeks.



■ Air Purifying Filter (green)

(Replace approximately once every 3 months.)

1. **Detach the filter element and attach a new one.**
   - Insert with the green side up.
   - It is recommended to replace the air purifying filter every three months.



■ Photocatalytic Deodorizing Filter (gray)

[Maintenance]

1. **Dry the photocatalytic deodorizing filter in the sun.**
   - After removing the dust with a vacuum cleaner, place the filter in the sun for approximately 6 hours. By drying the photocatalytic deodorizing filter in the sun, its deodorizing and antibacterial capabilities are regenerated.
   - Because the filter material is paper, it can not be cleaned with water.
   - It is recommended dry the filter once every 6 months.

[Replacement]

1. **Detach the filter element and attach a new one.**

Check

Check that the base, stand and other fittings of the outdoor unit are not decayed or corroded.
Check that nothing blocks the air inlets and the outlets of the indoor unit and the outdoor unit.
Check that the earth wire is not disconnected or broken.
Check that the drain comes smoothly out of the drain hose during COOL or DRY operation. • If no drain water is seen, water may be leaking from the indoor unit. Stop operation and consult the service shop if this is the case.

■ Before a long idle period

1. **Operate the "fan only" for several hours on a fine day to dry out the inside.**
   - Press "MODE" button and select "fan"operation.
   - Press "ON/OFF" button and start operation.
2. **Clean the air filters and set them again.**
3. **Take out batteries from the remote controller.**
4. **Turn OFF the breaker for the room air conditioner.**
   - When a multi outdoor unit is connected, make sure the heating operation is not used at the other room befure you use the fan operation.

NOTE

- Operation with dusty air filters lowers the cooling (heating) capacity and wastes energy. Air is also prevented from flowing smoothly through the unit creating a noise.
- Operation with dirty filters :
  (1) cannot deodorize the air. (2) cannot clean the air.
  (3) results in poor heating or cooling. (4) may cause odour.
- The air purifying filter and Photocatalytic deodorizing filter cannot be reused, even if washed.
- In principle, there is no need to replace the photocatalytic deodorizing filter. Remove the dust periodically with a vacuum cleaner. However, it is recommended to replace the filter in the following cases.
  (1) The paper material is torn or broken during cleaning.
  (2) The filter has become extremely dirty after long use.
- To order air purifying filter or Photocatalytic deodorizing filter, contact to the service shop where you bought the air conditioner.
- Dispose of old air filters as non-burnable waste and Photocatalytic deodorizing filters as burnable waste.

Item	Part No.
Photocatalytic deodorizing filter (with frame)	KAZ917B41
Photocatalytic deodorizing filter (without frame)	KAZ917B42
Air purifying filter (with frame)	KAF925B41
Air purifying filter (without frame)	KAF925B42

2.15 Troubleshooting

Trouble Shooting

These cases are not troubles.

The following cases are not air conditioner troubles but have some reasons. You may just continue using it.

Case	Explanation
Operation does not start soon. • When ON/OFF button was pressed soon after operation was stopped. • When the mode was reselected.	• This is to protect the air conditioner. You should wait for about 3 minutes.
Hot air does not flow out soon after the start of heating operation.	• The air conditioner is warming up. You should wait for 1 to 4 minutes. (The system is designed to start discharging air only after it has reached a certain temperature.)
The heating operation stops suddenly and a flowing sound is heard.	• The system is taking away the frost on the outdoor unit. You should wait for about 4 to 12 minutes.
The outdoor unit emits water or steam.	■ In HEAT mode • The frost on the outdoor unit melts into water or steam when the air conditioner is in defrost operation. ■ In COOL or DRY mode • Moisture in the air condenses into water on the cool surface of outdoor unit piping and drips.
Mists come out of the indoor unit.	■ This happens when the air in the room is cooled into mist by the cold air flow during cooling operation.
The indoor unit gives out odour.	■ This happens when smells of the room, furniture, or cigarettes are absorbed into the unit and discharged with the air flow. (If this happens, we recommend you to have the indoor unit washed by a technician. Consult the service shop where you bought the air conditioner.)
The outdoor fan rotates while the air conditioner is not in operation.	■ After operation is stopped: • The outdoor fan continues rotating for another 60 seconds for system protection. ■ While the air conditioner is not in operation: • When the outdoor temperature is very high, the out door fan starts rotating for system protection.
The operation stopped suddenly. (OPERATION lamp is on)	■ For system protection, the air conditioner may stop operating on a sudden large voltage fluctuation. It automatically resumes operation in about 3 minutes.

Check again.

Please check again before calling a repair person.

Case	Check
The air conditioner does not operate. (OPERATION lamp is off)	• Hasn't a breaker turned OFF or a fuse blown? • Isn't it a power failure? • Are batteries set in the remote controller? • Is the timer setting correct?
Cooling (Heating) effect is poor.	• Are the air filters clean? • Is there anything to block the air inlet or the outlet of the indoor and the outdoor units? • Is the temperature setting appropriate? • Are the windows and doors closed? • Are the air flow rate and the air direction set appropriately? • Is the unit set to the INTELLIGENT EYE mode?
Operation stops suddenly. (OPERATION lamp flashes.)	• Are the air filters clean? • Is there anything to block the air inlet or the outlet of the indoor and the outdoor units? Clean the air filters or take all obstacles away and turn the breaker OFF. Then turn it ON again and try operating the air conditioner with the remote controller. If the lamp still flashes, call the service shop where you bought the air conditioner. • Are operation modes all the same for indoor units connected to outdoor units in the **multi system?** If not, set all indoor units to the same operation mode and confirm that the lamps flash. Moreover, when the operation mode is in "AUTO", set all indoor unit operation modes to "COOL" or "HEAT" for a moment and check again that the lamps are normal. If the lamps stop flashing after the above steps, there is no malfunction.
An abnormal functioning happens during operation.	• The air conditioner may malfunction with lightening or radio waves. Turn the breaker OFF, turn it ON again and try operating the air conditioner with the remote controller.

Call the service shop immediately.

⚠ WARNING

■When an abnormality (such as a burning smell) occurs, stop operation and turn the breaker OFF.
Continued operation in an abnormal condition may result in troubles, electric shocks or fire.
Consult the service shop where you bought the air conditioner.

■Do not attempt to repair or modify the air conditioner by yourself.
Incorrect work may result in electric shocks or fire.
Consult the service shop where you bought the air conditioner.

If one of the following symptoms takes place, call the service shop immediately.

■ **The power cord is abnormally hot or damaged.** ■ **An abnormal sound is heard during operation.** ■ **The safety breaker, a fuse, or the earth leakage breaker cuts off the operation frequently.** ■ **A switch or a button often fails to work properly.** ■ **There is a burning smell.** ■ **Water leaks from the indoor unit.**	▶ Turn the breaker OFF and call the service shop.

■ After a power failure The air conditioner automatically resumes operation in about 3 minutes. You should just wait for a while.	■ Lightning If lightning may strike the neighbouring area, stop operation and turn the breaker OFF for system protection.

Disposal requirements

Dismantling of the unit, treatment of the refrigerant, oil and eventual other parts, should be done in accordance with the relevant local and national regulations.

We recommend periodical maintenance

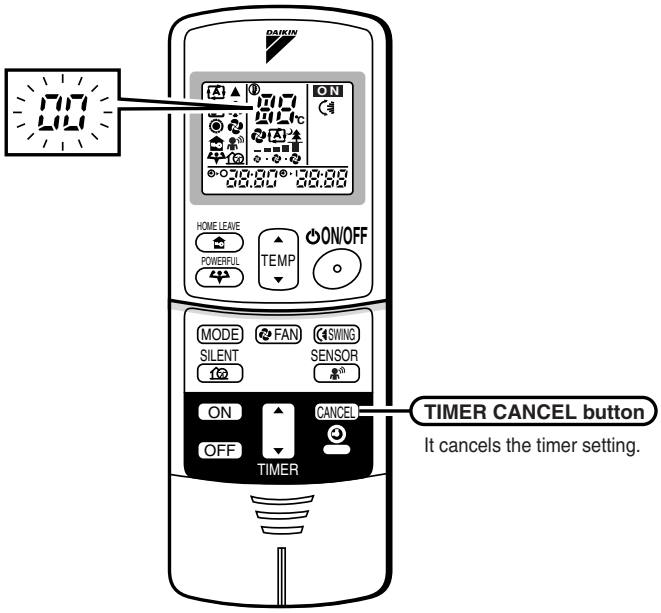
In certain operating conditions, the inside of the air conditioner may get foul after several seasons of use, resulting in poor performance. It is recommended to have periodical maintenance by a specialist aside from regular cleaning by the user. For specialist maintenance, contact the service shop where you bought the air conditioner.
The maintenance cost must be born by the user.

Fault diagnosis

FAULT DIAGNOSIS BY REMOTE CONTROLLER

In the ARC433A series, the temperature display sections on the main unit indicate corresponding codes.

1. **When the TIMER CANCEL button is held down for 5 seconds, a "00" indication flashes on the temperature display section.**



2. **Press the TIMER CANCEL button repeatedly until a continuous beep is produced.**
   - The code indication changes in the sequence shown below, and notifies with along beep.

	CODE	MEANING
SYSTEM	00	NORMAL
	U0	REFRIGERANT SHORTAGE
	U2	DROP VOLTAGE OR MAIN CIRCUIT OVERVOLTAGE
	U4	FAILURE OF TRANSMISSION (BETWEEN INDOOR UNIT AND OUTDOOR UNIT)
INDOOR UNIT	A1	INDOOR PCB DEFECTIVENESS
	A5	HIGH PRESSURE CONTROL OR FREEZE-UP PROTECTOR
	A6	FAN MOTOR FAULT
	C4	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	C9	FAULTY SUCTION AIR TEMPERATURE SENSOR
OUTDOOR UNIT	EA	COOLING-HEATING SWITCHING ERROR
	E5	OL STARTED
	E6	FAULTY COMPRESSOR START UP
	E7	DC FAN MOTOR FAULT
	E8	OPERATION HALT DUE TO DETECTION OF INPUT OVER CURRENT
	F3	HIGH TEMPERATURE DISCHARGE PIPE CONTROL
	F6	HIGH PRESSURE CONTROL (IN COOLING)
	H6	OPERATION HALT DUE TO FAULTY POSITION DETECTION SENSOR
	H8	CT ABNORMALITY
	H9	FAULTY SUCTION AIR TEMPERATURE SENSOR
	J3	FAULTY DISCHARGE PIPE TEMPERATURE SENSOR
	J6	FAULTY HEAT EXCHANGER TEMPERATURE SENSOR
	L4	HIGH TEMPERATURE AT INVERTER CIRCUIT HEATSINK
	L5	OUTPUT OVERCURRENT
	P4	FAULTY INVERTER CIRCUIT HEATSINK TEMPERATURE SENSOR

NOTE

1. A short beep and two consecutive beeps indicate non-corresponding codes.
2. To cancel the code display, hold the TIMER CANCEL button down for 5 seconds. The code display also cancel itself if the button is not pressed for 1 minute.

LED ON OUTDOOR UNIT PCB 3MXS, 3MKS, 4MXS, 4MKS series

GREEN	RED				
MICROCOMPUTER NORMAL	MALFUNCTION DETECTION				
LED-A	LED1	LED2	LED3	LED4	DIAGNOSIS
◑	●	●	●	●	NORMAL → CHECK INDOOR UNIT
◑	☼	●	☼	☼	HIGH PRESSURE PROTECTOR WORKED OR FREEZE-UP IN OPERATING UNIT OR STAND-BY UNIT
◑	☼	●	☼	●	* OVERLOAD RELAY WORKED OR HIGH DISCHARGE PIPE TEMPERATURE
◑	●	☼	☼	●	FAULTY COMPRESSOR START
◑	●	☼	●	☼	INPUT OVERCURRENT
◑	☼	☼	●	●	* THERMISTOR OR CT ABNORMALITY
◑	☼	☼	●	☼	HIGH TEMPERATURE SWITCHBOX
◑	●	●	●	☼	HIGH TEMPERATURE AT INVERTER CIRCUIT HEATSINK
◑	●	●	☼	●	* OUTPUT OVERCURRENT
◑	●	●	☼	☼	* REFRIGERANT SHORTAGE
◑	☼	●	●	☼	LOW VOLTAGE TO MAIN CIRCUIT OR MOMENTARY VOLTAGE LOSS
◑	☼	●	●	●	REVERSING SOLENOID VALVE SWITCHING FAILURE
◑	☼	☼	☼	☼	FAN MOTOR FAULT
☼	–	–	–	–	[NOTE 1]
●	–	–	–	–	POWER SUPPLY FAULT OR [NOTE 2]

GREEN	NORMALLY FLASHING
RED	NORMALLY OFF
☼	ON
◑	FLASHING
●	OFF
–	IRRELEVANT

LED ON OUTDOOR UNIT PCB 2MXS, 2MKS series

GREEN	
MICROCOMPUTER NORMAL	
LED-A	DIAGNOSIS
◑	NORMAL → CHECK INDOOR UNIT
☼	[NOTE 1]
●	POWER SUPPLY FAULT OR [NOTE 2]

GREEN	NORMALLY FLASHING
☼	ON
◑	FLASHING
●	OFF

NOTES

1. Turn the power off and then on again. If the LED display recurs,the outdoor unit PCB is faulty.
2. Diagnosis marked
   * Do not apply to some cases. For details, refer to the service guide.

Part 6
Service Diagnosis

1. Caution for Diagnosis

1.1 Troubleshooting with Operation Lamp

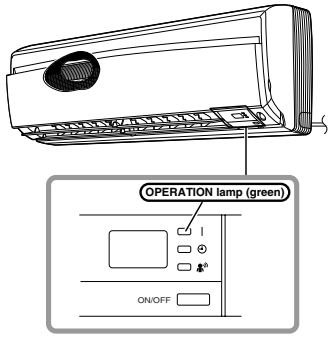
The operation lamp flashes when any of the following errors is detected.

1. When a protection device of the indoor or outdoor unit is activated or when the thermistor malfunctions, disabling equipment operation.
2. When a signal transmission error occurs between the indoor and outdoor units.

In either case, conduct the diagnostic procedure described in the following pages.

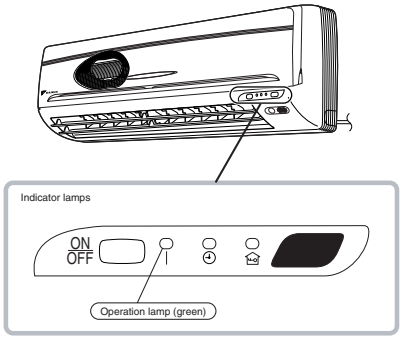
Location of Operation Lamp

In case of
FTK(X)S 20/25/35 D Series
CTK(X)S 50 D Series



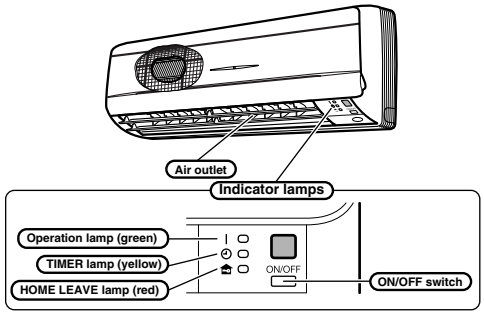
(R4298)

In case of
FTK(X)S 20/25/35 C Series
ATXS 20/25/35 D Series
ATXS 20/25/35 C Series (grille type panel)



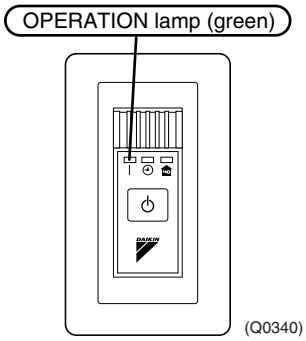
(R4297)

In case of
FTK(X)S 50/60/71 B Series
ATXS 50 D Series
ATXS 50 C Series (grille type panel)



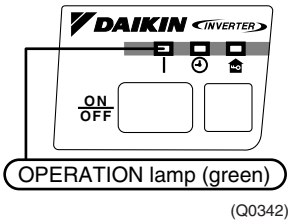
(R2837)

In case of
FDK(X)S 25/35 C Series
CDK(X)S 50/60 C Series



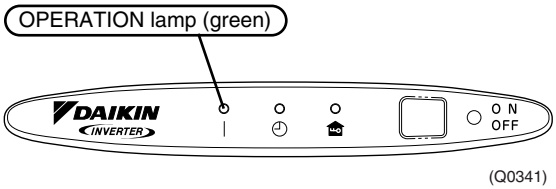
(Q0340)

In case of
FVK(X)S 25/35/50 B Series



(Q0342)

In case of
FLK(X)S 25/35/50/60 B Series



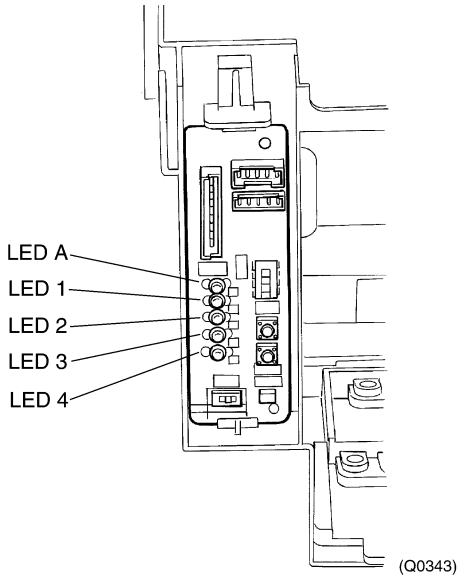
(Q0341)

Caution: Operation stops suddenly. (Operation lamp blinks.)
Cause of above trouble could be "Operation mode conflict".
Check followings;
Are the operation modes all the same for indoor units connected to Multi system outdoor unit?
If not set all indoor units to the same operation mode and confirm that the operation lamp is not blinking.
Moreover, when the operation mode is in "Auto", set all indoor unit operation mode to "Cool" or "Heat" and check again if the operation lamp is normal.
If the lamp stops blinking after the above steps, there is no malfunction.

★Operation stops and operation lamp blinks only for indoor unit which the different operation mode is set later. (The first set operation mode has priority.)

Troubleshooting with the LED Indication

Outdoor Unit



There are green and red LEDs on the PCB. The flashing green LED indicates normal equipment condition, and the OFF condition of the red LED indicates normal equipment condition.
(Troubleshooting with the green LED)
The LED A (green) of the outdoor unit indicate microcomputer operation condition.
Even after the error is cancelled and the equipment operates in normal condition, the LED indication remains.

2. Problem Symptoms and Measures

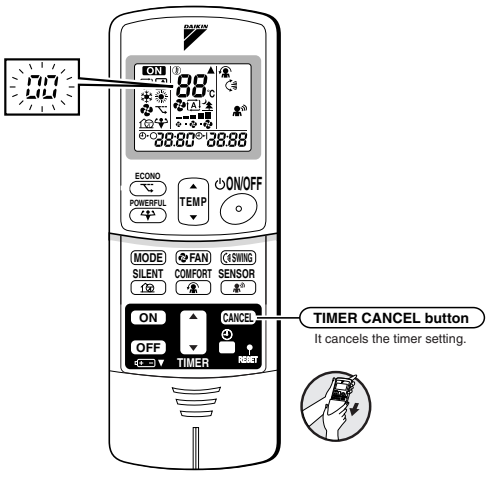
Problem Symptom	Check Item	Details of Measure	Page No. to be referred
None of the units operates.	Check the power supply.	Check to make sure that the rated voltage is supplied.	—
	Check the type of the indoor units.	Check to make sure that the indoor unit type is compatible with the outdoor unit.	—
	Check the outdoor air temperature.	Heating operation cannot be used when the outdoor air temperature is 21°C or higher (only for heat pump model), and cooling operation cannot be used when the outdoor air temperature is below –10 °C	—
	Diagnosis with indoor unit LED indication	—	173
	Diagnosis with outdoor unit LED indication	—	174
	Check the remote controller addresses.	Check to make sure that address settings for the remote controller and indoor unit are correct.	—
Operation sometimes stops.	Check the power supply.	A power failure of 2 to 10 cycles can stop air conditioner operation. (Operation lamp OFF)	—
	Check the outdoor air temperature.	Heating operation cannot be used when the outdoor air temperature is 21°C or higher (only for heat pump model), and cooling operation cannot be used when the outdoor air temperature is below –10°C	—
	Diagnosis with indoor unit LED indication	—	173
	Diagnosis with outdoor unit LED indication	—	174
Some indoor units do not operate.	Check the type of the indoor units.	Check to make sure that the indoor unit type is compatible with the outdoor unit.	—
	Diagnosis with indoor unit LED indication	—	173
	Diagnosis with outdoor unit LED indication	—	174
Equipment operates but does not cool, or does not heat (only for heat pump model).	Check for wiring and piping errors in the indoor and outdoor units connection wires and pipes.	Conduct the wiring/piping error check described on the product diagnosis nameplate.	—
	Check for thermistor detection errors.	Check to make sure that the main unit's thermistor has not dismounted from the pipe holder.	—
	Check for faulty operation of the electronic expansion valve.	Set the units to cooling operation, and compare the temperatures of the liquid side connection pipes of the connection section among rooms to check the opening and closing operation of the electronic expansion valves of the individual units.	—
	Diagnosis with indoor unit LED indication	—	173
	Diagnosis with outdoor unit LED indication	—	174
	Diagnosis by service port pressure and operating current	Check for insufficient gas.	218
Large operating noise and vibrations	Check the output voltage of the power transistor.	—	219
	Check the power transistor.	—	—
	Check the installation condition.	Check to make sure that the required spaces for installation (specified in the Engineering Data book, etc.) are provided.	—

3. Service Check Function

In the ARC433A series remote controller, the temperature display sections on the main unit indicate corresponding codes.

Check Method 1

1. When the timer cancel button is held down for 5 seconds, a “00” indication flashes on the temperature display section.



<ARC433A50, 43>

(R4271)

2. Press the timer cancel button repeatedly until a continuous beep is produced.

■ The code indication changes in the sequence shown below, and notifies with a long beep.

No.	Code	No.	Code	No.	Code
1	00	12	C7	23	H0
2	U4	13	H8	24	E1
3	F3	14	J3	25	P4
4	E6	15	A3	26	L3
5	L5	16	A1	27	L4
6	A6	17	C4	28	H6
7	E5	18	C5	29	H7
8	F6	19	H9	30	U2
9	C9	20	J6	31	UH
10	U0	21	UR	32	ER
11	E7	22	A5	33	AH

<In case of ARC433A50, 43>

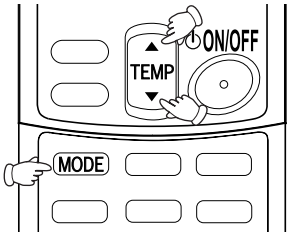
No.	Code	No.	Code	No.	Code
1	00	12	F6	23	A1
2	U4	13	C7	24	E1
3	L5	14	A3	25	UR
4	E6	15	H8	26	UH
5	H6	16	H9	27	P4
6	H0	17	C9	28	L3
7	A6	18	C4	29	L4
8	E7	19	C5	30	H7
9	U0	20	J3	31	U2
10	F3	21	J6	32	ER
11	A5	22	E5	33	AH

Note:

1. A short beep and two consecutive beeps indicate non-corresponding codes.
2. To cancel the code display, hold the timer cancel button down for 5 seconds. The code display also cancels itself if the button is not pressed for 1 minute.

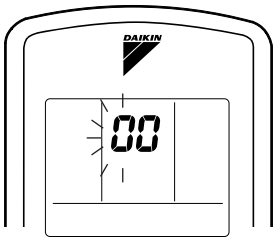
Check Method 2

1. Enter the diagnosis mode.
   Press the 3 buttons (TEMP▲,TEMP▼, MODE) simultaneously.



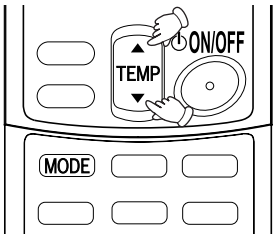
(R4272)

   The digit of the number of tens blinks.
   ★Try again from the start when the digit does not blink.



(R4273)

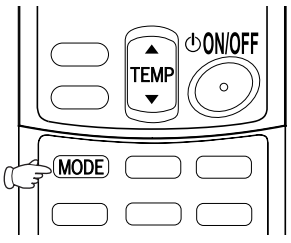
2. Press the TEMP button.
   Press TEMP▲ or TEMP▼ and change the digit until you hear the sound of “beep” or “pi pi”.



(R4274)

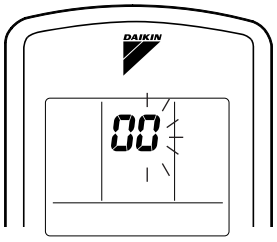
3. Diagnose by the sound.
   ★“ pi ” : The number of tens does not accord with the error code.
   ★“ pi pi ” : The number of tens accords with the error code.
   ★“ beep ” : The both numbers of tens and units accord with the error code. (→ See 7.)

4. Enter the diagnosis mode again.
   Press the MODE button.



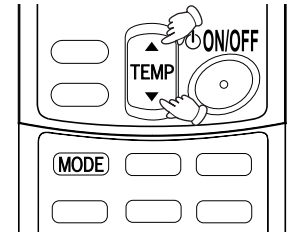
(R4275)

   The digit of the number of units blinks.



(R4276)

5. Press the TEMP button.
   Press TEMP▲ or TEMP▼ and change the digit until you hear the sound of “beep”.

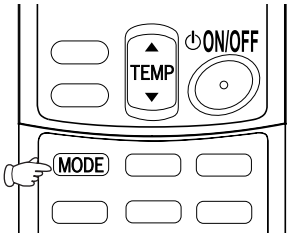


(R4277)

6. Diagnose by the sound.
   ★“ pi ” : The both numbers of tens and units do not accord with the error code.
   ★“ pi pi ” : The number of tens accords with the error code.
   ★“ beep ” : The both numbers of tens and units accord with the error code.

7. Determine the error code.
   The digits indicated when you hear the “beep” sound are error code.
   (Error codes and description → Refer to page 172.)

8. Exit from the diagnosis mode.
   Press the MODE button.



(R4278)

4. Code Indication on the Remote Controller

4.1 Error Codes and Description of Fault

	Code Indication	Description of Problem
System	00	Normal
	U0	Insufficient gas
	U2	Low-voltage detection
	U4	Signal transmission error (between indoor and outdoor units)
	UA	Unspecified voltage (between indoor and outdoor units)
	UH	Anti-icing function in other rooms
Indoor Unit	A1	Indoor unit PCB abnormality
	A5	Freeze-up protection function or high pressure control
	A6	Fan motor or related abnormality
	C4	Heat exchanger temperature thermistor abnormality
	C7	Shutter drive motor / shutter limit switch abnormality
	C9	Room temperature thermistor abnormality
Outdoor Unit	A5	Freeze-up protection control
	E5	OL activation (compressor overloaded)
	E6	Compressor lock
	E7	DC fan lock
	E8	Input over current detection
	EA	Four way valve abnormality
	F3	Discharge pipe temperature control
	F6	High pressure control in cooling
	H6	Position sensor abnormality
	H8	CT or related abnormality
	H9	Outdoor air thermistor or related abnormality
	J3	Discharge pipe thermistor or related abnormality
	J6	Heat exchanger thermistor or related abnormality
	J8	Liquid pipe thermistor or related abnormality
	J9	Gas pipe thermistor or related abnormality
	L3	Electrical box temperature rise
	L4	Radiation fin temperature rise
	L5	Output over current detection
	P4	Radiation fin thermistor or related abnormality

5. Troubleshooting

5.1 Indoor Units

- : Not used for troubleshooting
∗ : Varies depending on the cases.

Indication on the remote controller	Description of the Fault		Details of fault (Refer to the indicated page.)
00	Indoor unit in normal condition (Conduct a diagnosis of the outdoor unit.)		—
A1	Indoor unit PCB abnormality		175
A5	Freeze-up protection control or high pressure control (heat pump model only)		176
A6	Fan motor or related abnormality	AC motor (Wall : 20~35 C series, Duct, Floor / Ceiling)	178
		DC motor (Wall : 20~35 D series and 50~71 B series, Floor)	179
C4	Heat exchanger thermistor or related abnormality		181
C7	Shutter drive motor / shutter limit switch abnormality		182
C9	Room temperature thermistor abnormality		181
U4	Signal transmission error (between indoor and outdoor units)		183
UA	Unspecified voltage (between indoor and outdoor units)		184

5.2 Outdoor Units

☼: ON, ● : OFF, ◑ : Blinks

Green : Flashes when in normal condition
Red : OFF in normal condition
- : Not used for troubleshooting
∗ : Varies depending on the cases.

Outdoor Unit LED Indication					Indication on the remote controller	Description of The Fault	Reference Page
Green	Red						
A	1	2	3	4			
◑	●	●	●	●	00	Outdoor unit in normal condition (Conduct a diagnosis of the indoor unit.)	—
					UA	Unspecified voltage (between indoor and outdoor units)	211
					UH	Anti-icing function in other rooms	211
◑	●	●	☼	☼	(U0)	Insufficient gas	208
◑	☼	●	●	☼	U2	Low-voltage detection	210
◑	☼	●	☼	☼	A5	Freeze-up protection control	185
◑	☼	●	☼	●	(E5)	OL activation (compressor overload)	187
◑	●	☼	☼	●	(E6)	Compressor lock	188
◑	☼	☼	☼	☼	E7	DC fan lock	189
◑	●	☼	●	☼	E8	Input over current detection	190
◑	☼	●	●	●	EA	Four way valve abnormality	192
◑	☼	●	☼	●	F3	Discharge pipe temperature control	194
◑	☼	●	☼	☼	F6	High pressure control in cooling	195
◑	☼	☼	●	●	H6	Position sensor abnormality	197
					H9	Outdoor air thermistor or related abnormality	200
					J3	Discharge pipe thermistor or related abnormality	200
					J6	Heat exchanger thermistor or related abnormality	200
					J8	Liquid pipe thermistor or related abnormality	200
					J9	Gas pipe thermistor or related abnormality	200
					P4	Radiation fin thermistor or related abnormality	200
◑	☼	☼	●	●	H8	CT or related abnormality	198
◑	☼	☼	●	☼	L3	Electrical box temperature rise	202
◑	●	●	●	☼	L4	Radiation fin temperature rise (Protection of driver overheating)	204
◑	●	●	☼	●	L5	Output over current detection	206

Note:

1. The indications in the parenthesis ( ) in the remote controller display column are displayed only when system-down occurs.
2. When a sensor error occurs, check the remote controller display to determine which sensor is malfunctioning.
   If the remote controller does not indicate the error type, conduct the following operation.
   *Turn the power switch off and back on again. If the same LED indication appears again immediately after the power is turned on, the fault is in the thermistor.
   *If the above condition does not result, the fault is in the CT.
3. The indoor unit error indication may take the precedence in the remote controller display.

5.3 Indoor Unit PCB Abnormality

Remote Controller Display

A1

Method of Malfunction Detection

Evaluation of zero-cross detection of power supply by indoor unit.

Malfunction Decision Conditions

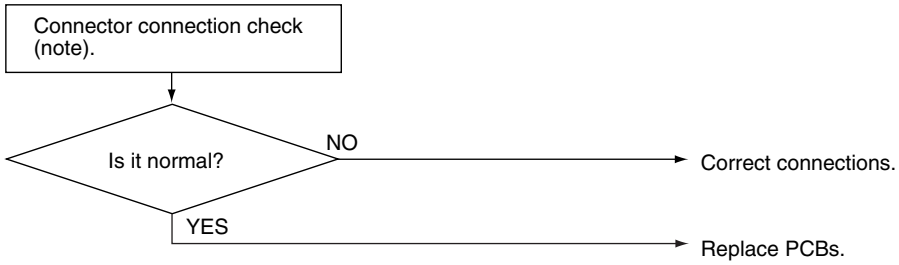
When there is no zero-cross detection in approximately 10 continuous seconds.

Supposed Causes

- Faulty indoor unit PCB
- Faulty connector connection

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(R1400)

Note: Connector Nos. vary depending on models.
Control connector

Model Type	Connector No.
Wall Mounted Type 20 / 25 / 35 class	Terminal strip~Control PCB
Wall Mounted Type 50 / 60 / 71 class	Terminal strip~Control PCB
Duct Connected Type	Terminal strip~Control PCB
Floor / Ceiling Suspended Dual Type	S37
Floor Standing Type	Control PCB : S7, S201, S203 Power Supply PCB : S8, S202, S204

5.4 Freeze-up Protection Control or High Pressure Control

Remote Controller Display

A5

Method of Malfunction Detection

- High pressure control (heat pump model only)
  During heating operations, the temperature detected by the indoor heat exchanger thermistor is used for the high pressure control (stop, outdoor fan stop, etc.)
- The freeze-up protection control (operation halt) is activated during cooling operation according to the temperature detected by the indoor unit heat exchanger thermistor.

Malfunction Decision Conditions

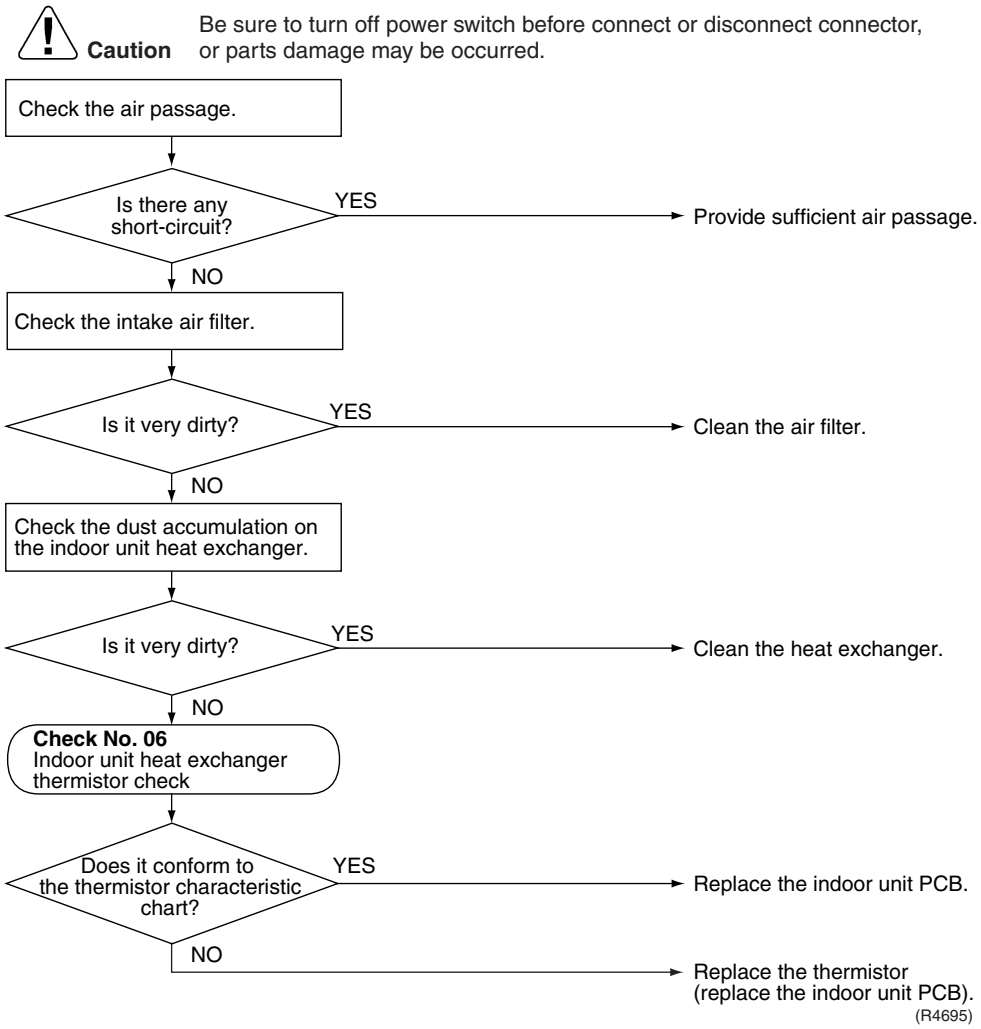
- High pressure control
  During heating operations, the temperature detected by the indoor heat exchanger thermistor is above 65°C
- Freeze-up protection
  When the indoor unit heat exchanger temperature is below 0°C during cooling operation.

Supposed Causes

- Operation halt due to clogged air filter of the indoor unit.
- Operation halt due to dust accumulation on the indoor unit heat exchanger.
- Operation halt due to short-circuit.
- Detection error due to faulty indoor unit heat exchanger thermistor.
- Detection error due to faulty indoor unit PCB.

Troubleshooting

Check No.06
Refer to P.215



Note: If the outside temperature is below –10°C in the cooling mode, the system may get interrupted with error *A5* displayed. The system will be reset itself, but this stop will be put in the error history memory.

5.5 Fan Motor or Related Abnormality

5.5.1 AC Motor

Remote Controller Display

A6

Method of Malfunction Detection

The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor operation.

Malfunction Decision Conditions

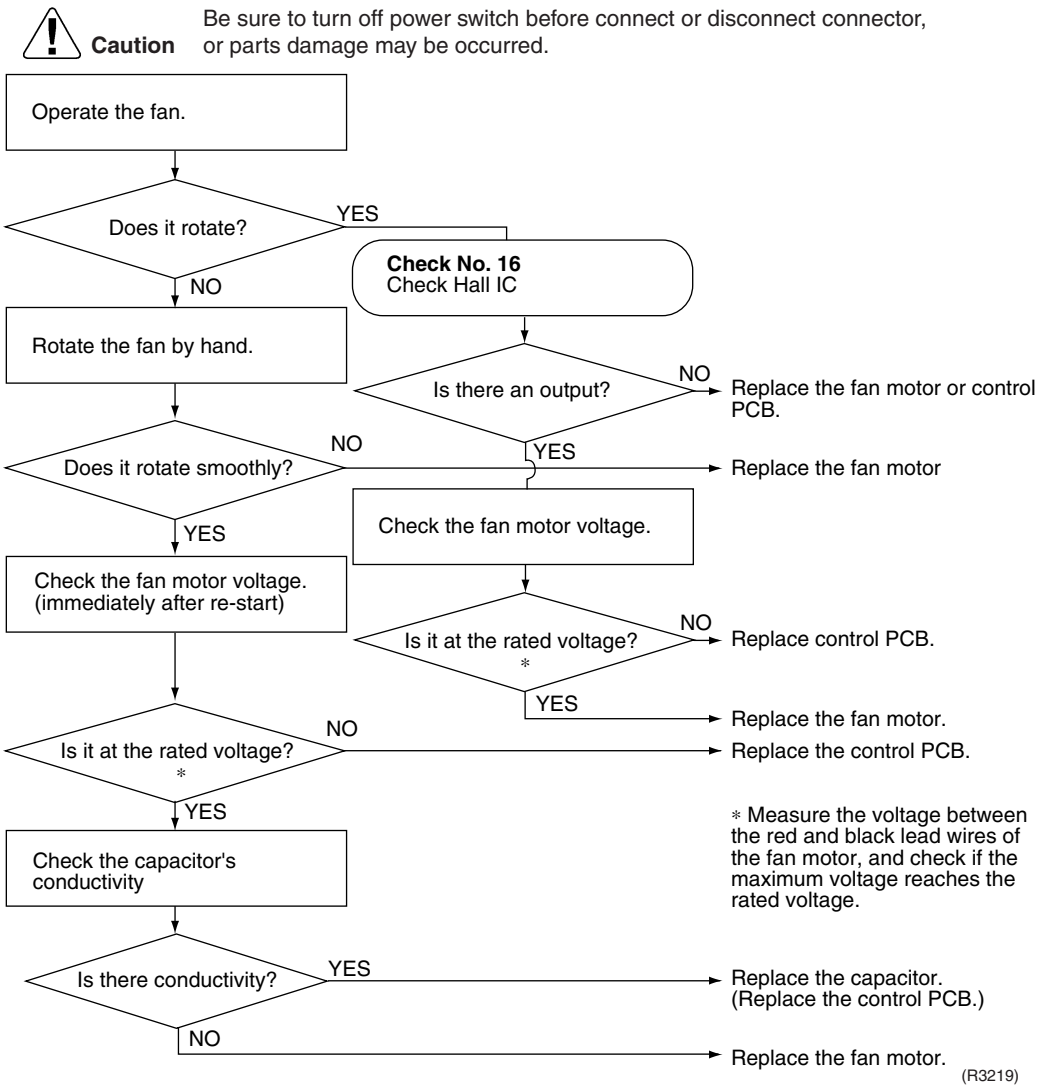
When the detected rotation speed is less than 50% of the HH tap under maximum fan motor rotation demand.

Supposed Causes

- Operation halt due to short circuit inside the fan motor winding.
- Operation halt due to breaking of wire inside the fan motor.
- Operation halt due to breaking of the fan motor lead wires.
- Operation halt due to faulty capacitor of the fan motor.
- Detection error due to faulty control PCB.

Troubleshooting

Check No.16
Refer to P.221



5.5.2 DC Motor

Remote Controller Display

A6

Method of Malfunction Detection

The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor operation.

Malfunction Decision Conditions

When the detected rotation speed is less than 50% of the H tap under maximum fan motor rotation demand.

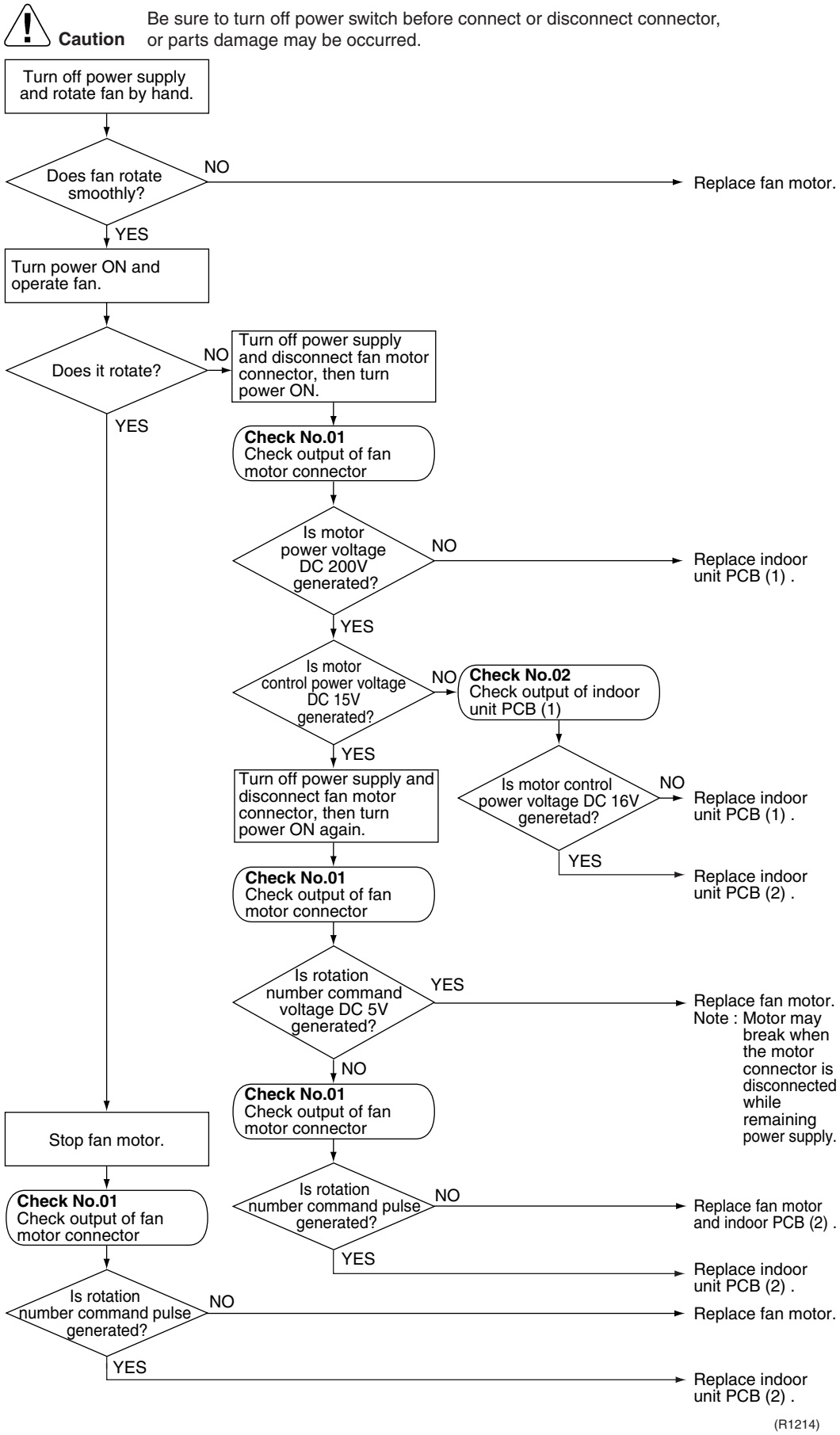
Supposed Causes

- Operation halt due to short circuit inside the fan motor winding.
- Operation halt due to breaking of wire inside the fan motor.
- Operation halt due to breaking of the fan motor lead wires.
- Operation halt due to faulty capacitor of the fan motor.
- Detection error due to faulty indoor unit PCB (1).

Troubleshooting

Check No.01
Refer to P.212

Check No.02
Refer to P.212



5.6 Thermistor or Related Abnormality (Indoor Unit)

Remote Controller Display

C4, C9

Method of Malfunction Detection

The temperatures detected by the thermistors are used to determine thermistor errors.

Malfunction Decision Conditions

When the thermistor input is more than 4.96 V or less than 0.04 V during compressor operation*.
* (reference)
When above about 212°C (less than 120 ohms) or below about -50°C (more than 1,860 kohms).

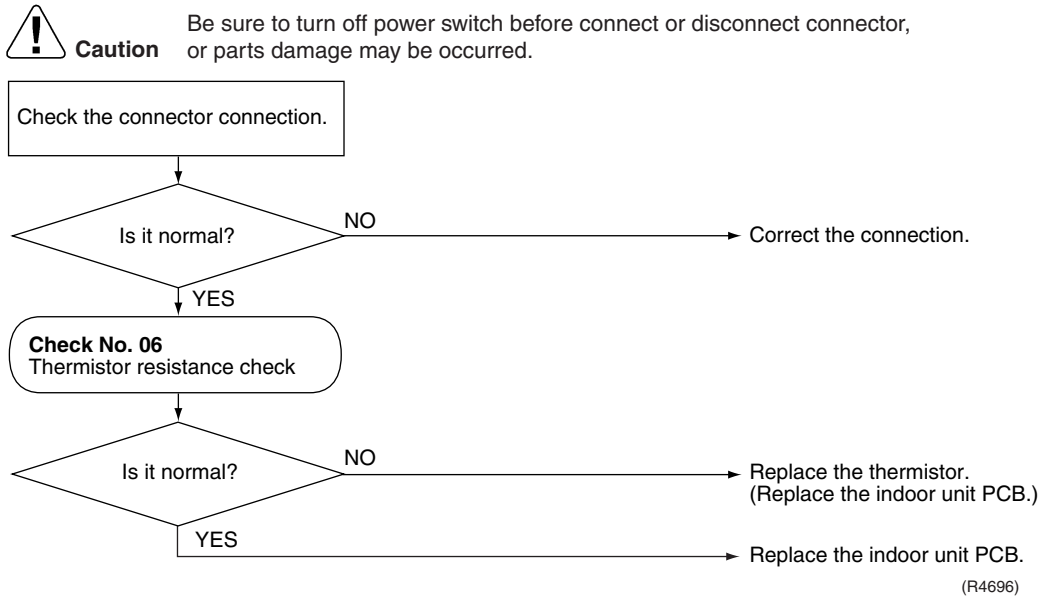
Note: The values vary slightly in some models.

Supposed Causes

- Faulty connector connection
- Faulty thermistor
- Faulty PCB

Troubleshooting

Check No.06
Refer to P.215



C4 : Heat exchanger temperature thermistor
C9 : Room temperature thermistor

5.7 Shutter Drive Motor / Shutter Limit Switch Abnormality

Remote Controller Display

C7

Method of Malfunction Detection

The shutter open / close performance is detected by the limit switch attached on its structure. In this way, the shutter drive motor and the shutter limit switch are checked for failure.

Malfunction Decision Conditions

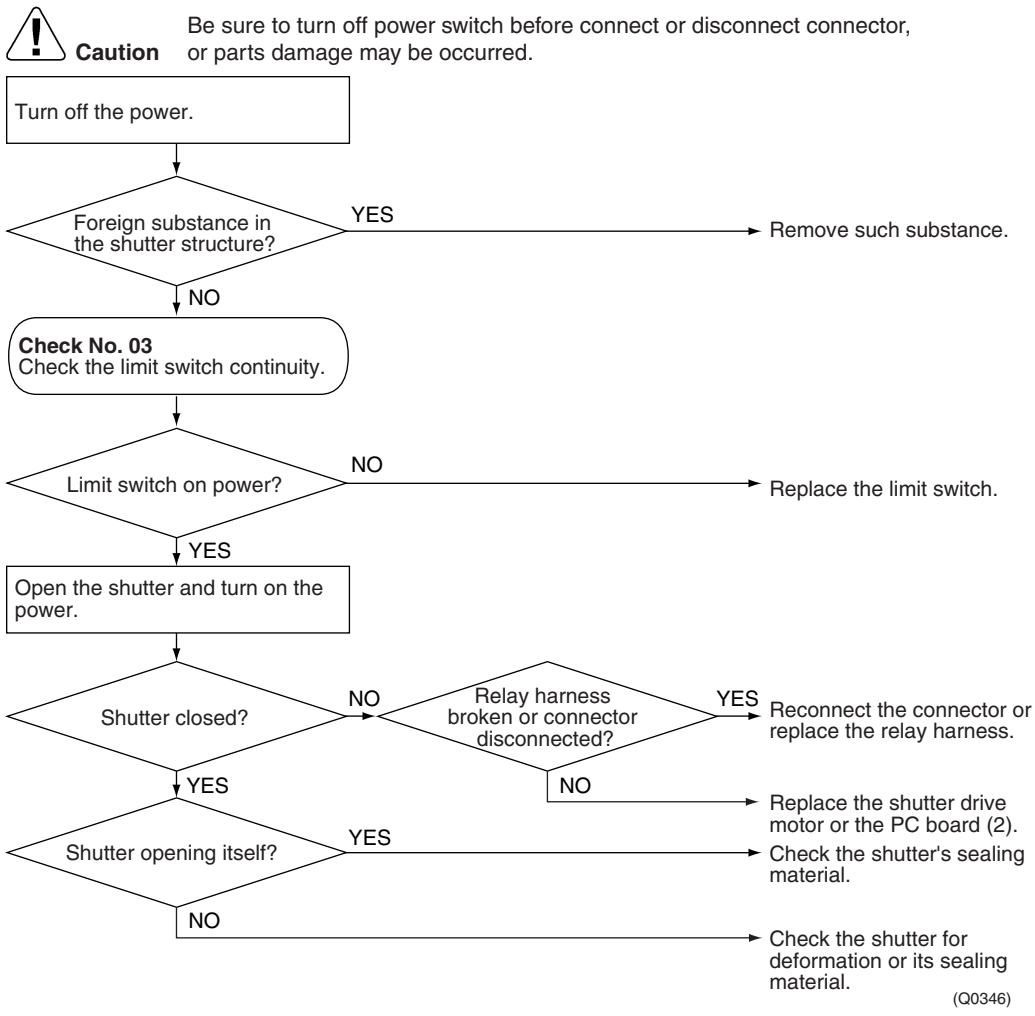
When the shutter is open, the limit switch is closed.

Supposed Causes

- Shutter drive motor defective
- Shutter limit switch defective
- Shutter itself deformed (warped)
- Shutter's sealing material too thick
- Detection error by broken relay harness or disconnected connector
- Detection error due to defective PCB (2)
- Foreign substance in blow port

Troubleshooting

Check No.03
Refer to P.212



5.8 Signal Transmission Error (between Indoor and Outdoor Units)

Remote Controller Display

U4

Method of Malfunction Detection

The data received from the outdoor unit in indoor unit-outdoor unit signal transmission is checked whether it is normal.

Malfunction Decision Conditions

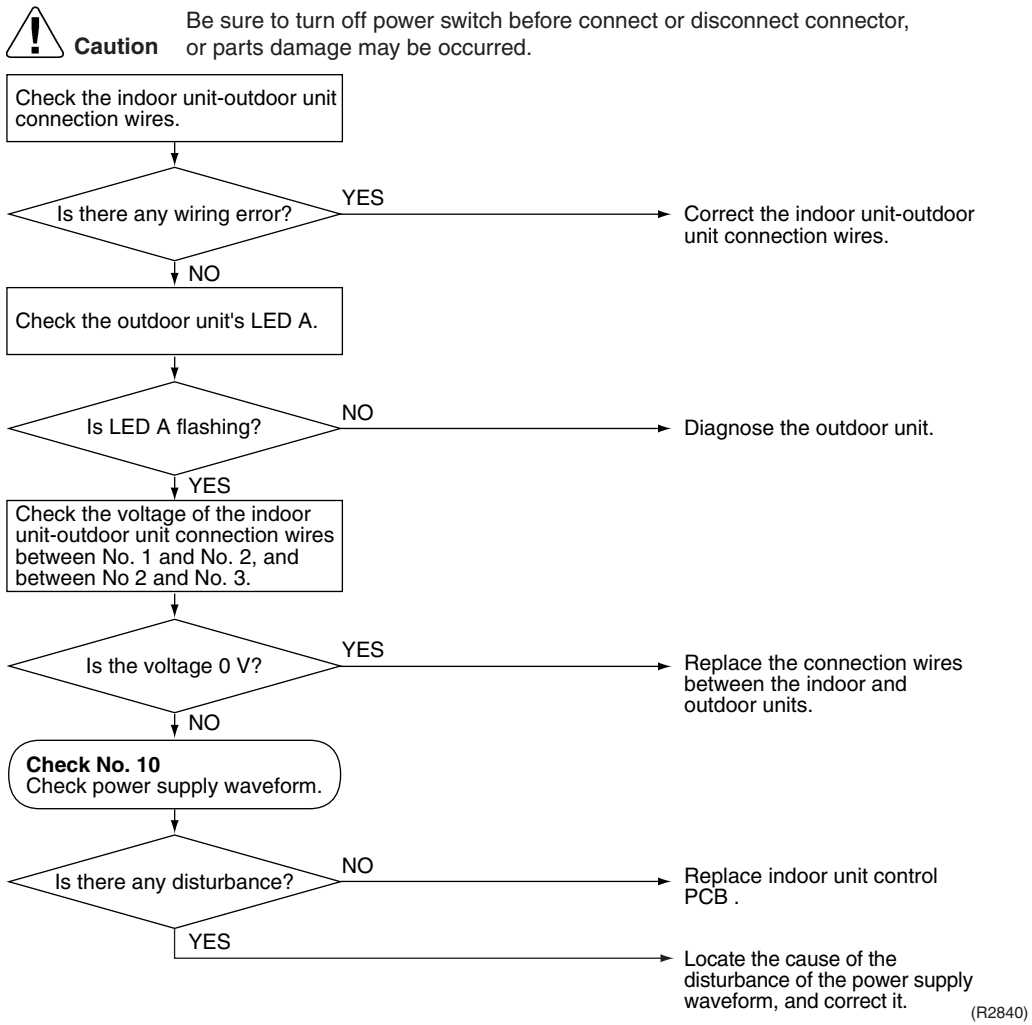
When the data sent from the outdoor unit cannot be received normally, or when the content of the data is abnormal.

Supposed Causes

- Faulty outdoor unit PCB.
- Faulty indoor unit PCB.
- Indoor unit-outdoor unit signal transmission error due to wiring error.
- Indoor unit-outdoor unit signal transmission error due to disturbed power supply waveform.
- Indoor unit-outdoor unit signal transmission error due to breaking of wire in the connection wires between the indoor and outdoor units (wire No. 2).

Troubleshooting

Check No.10
Refer to P.218



5.9 Unspecified Voltage (between Indoor and Outdoor Units)

Remote Controller Display

UA

Method of Malfunction Detection

The supply power is detected for its requirements (different from pair type and multi type) by the indoor / outdoor transmission signal.

Malfunction Decision Conditions

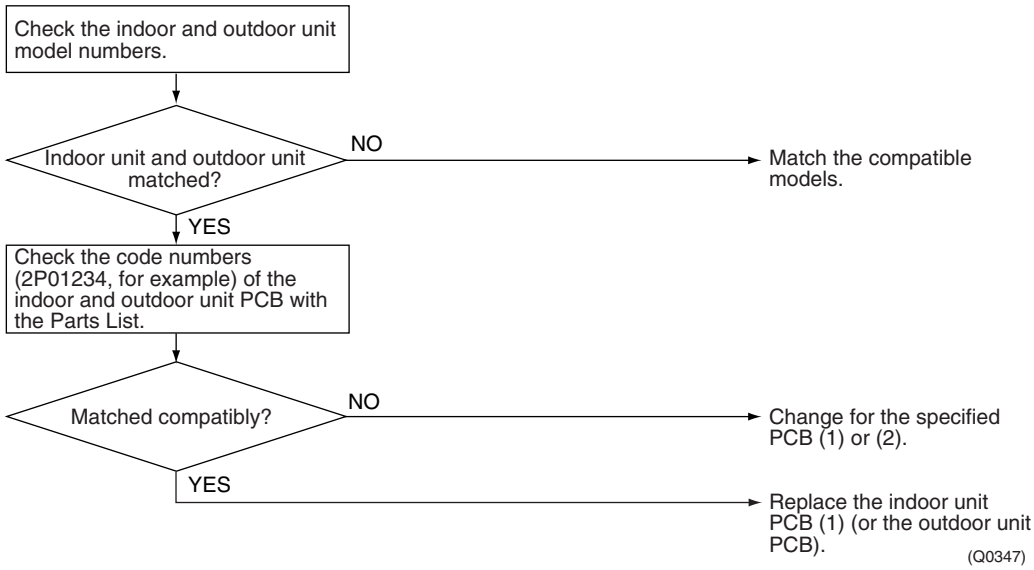
The pair type and multi type are interconnected.

Supposed Causes

- Wrong models interconnected
- Wrong indoor unit PCB mounted
- Indoor unit PCB defective
- Wrong outdoor unit PCB mounted or defective

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



5.10 Freeze-up Protection Control

Remote Controller Display

A5

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ● 3 ☼ 4 ☼

Method of Malfunction Detection

Indoor unit icing, during cooling operation, is detected by checking the temperatures sensed by the indoor unit heat exchanger thermistor and room temperature thermistor that are located in a shut-down room.

Malfunction Decision Conditions

In the cooling mode, the following conditions (A) and (B) are kept together for 5 minutes.
(A) Indoor unit heat exchanger temperature ≤ –1°C
(B) Indoor unit heat exchanger temperature ≤ Room temperature –10°C

If the freeze-up protection control is activated 4 times continuously, the system will be shut down.
(The 4-time counter will reset itself if any of the following errors does not occur for 60 minutes: OL, radiation fin temperature rise, gas shortage, and compressor startup.)

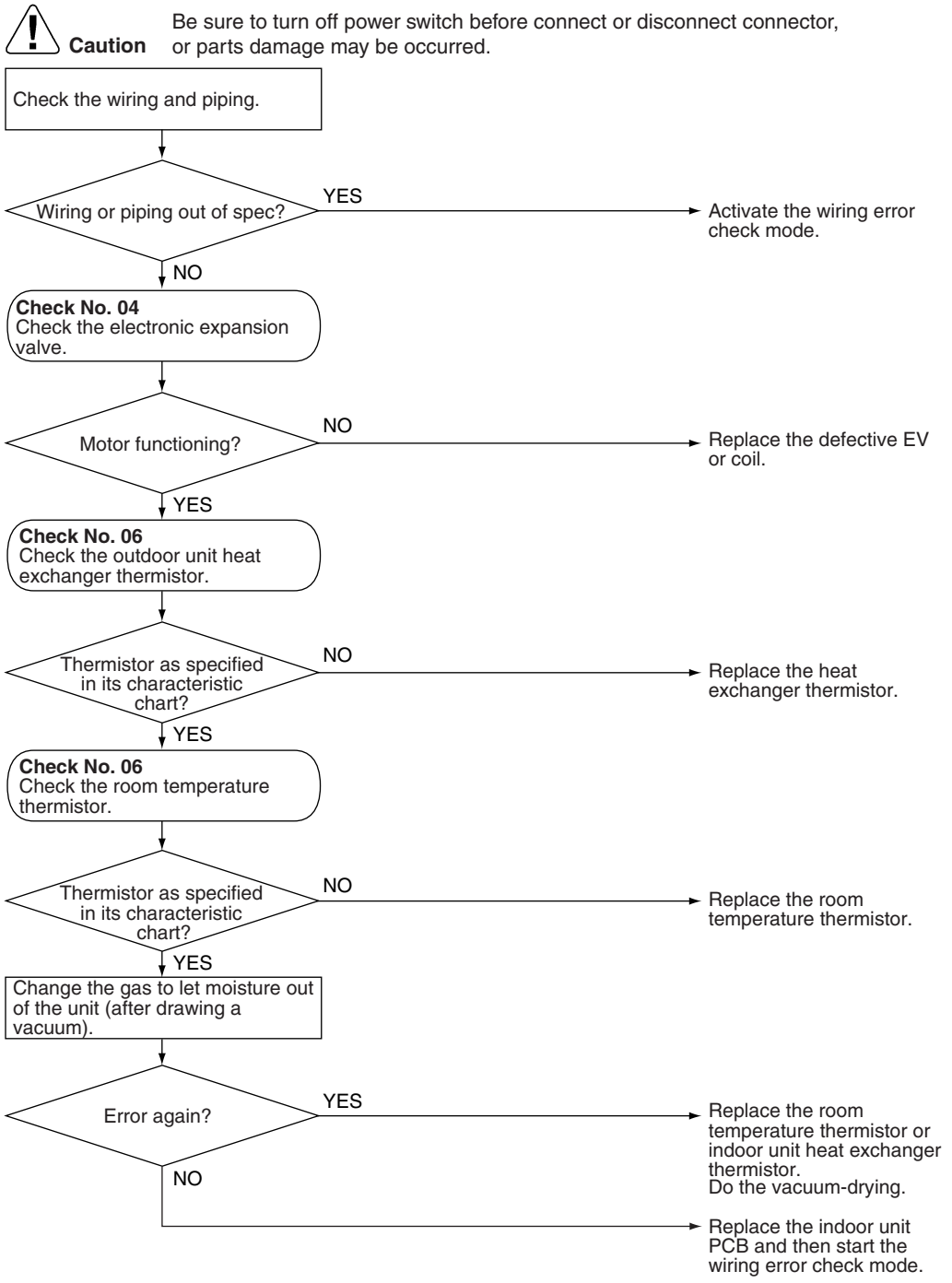
Supposed Causes

- Wrong wiring or piping
- EV malfunctioning in each room
- Short-circuit
- Indoor unit heat exchanger thermistor defective
- Room temperature thermistor defective

Troubleshooting

Check No.04
Refer to P.213

Check No.06
Refer to P.215



(R4715)

5.11 OL Activation (Compressor Overload)

Remote Controller Display

E5

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ● 3 ☼ 4 ●

Method of Malfunction Detection

A compressor overload is detected through compressor OL.

Malfunction Decision Conditions

- If the compressor OL is activated twice, the system will be shut down.
- The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

∗ The operating temperature condition is not specified.

Supposed Causes

- Refrigerant shortage
- Four way valve malfunctioning
- Outdoor unit PCB defective
- Water mixed in the local piping
- Electronic expansion valve defective
- Stop valve defective

Troubleshooting

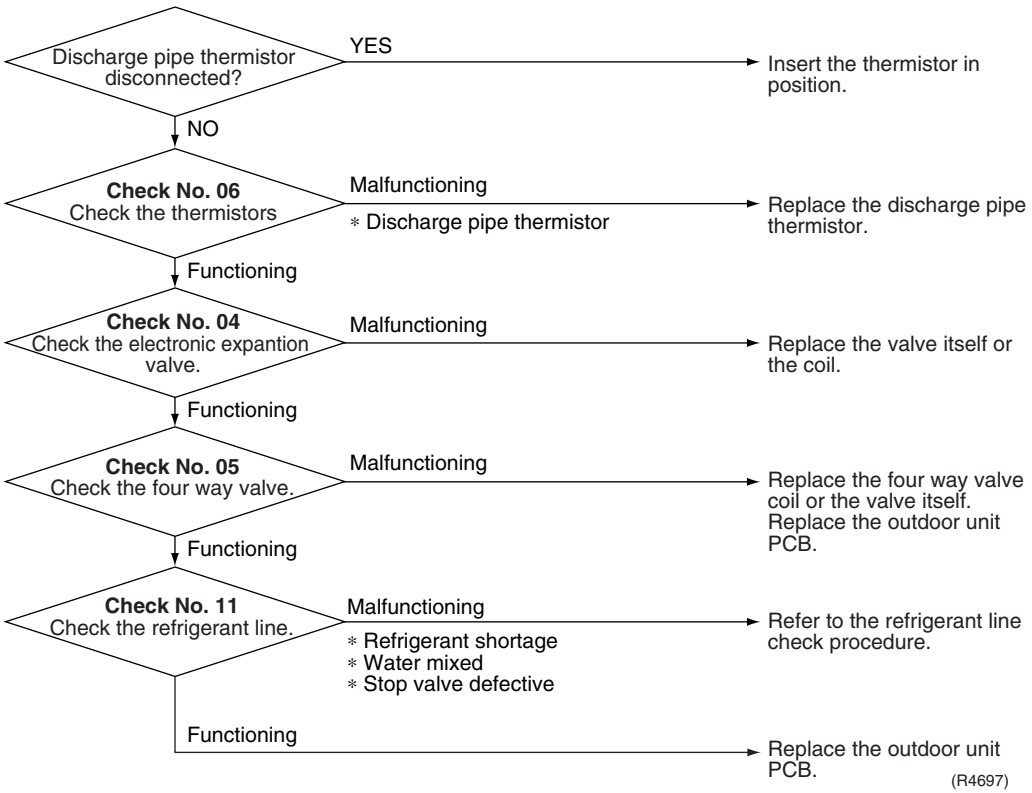
Check No.04 Refer to P.213

Check No.05 Refer to P.214

Check No.06 Refer to P.215

Check No.11 Refer to P.218

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(R4697)

5.12 Compressor Lock

Remote Controller Display

E6

Outdoor Unit LED Display

A ◑ 1 ● 2 ☼ 3 ☼ 4 ●

Method of Malfunction Detection

A compressor lock is detected by checking the compressor running condition through the position detection circuit.

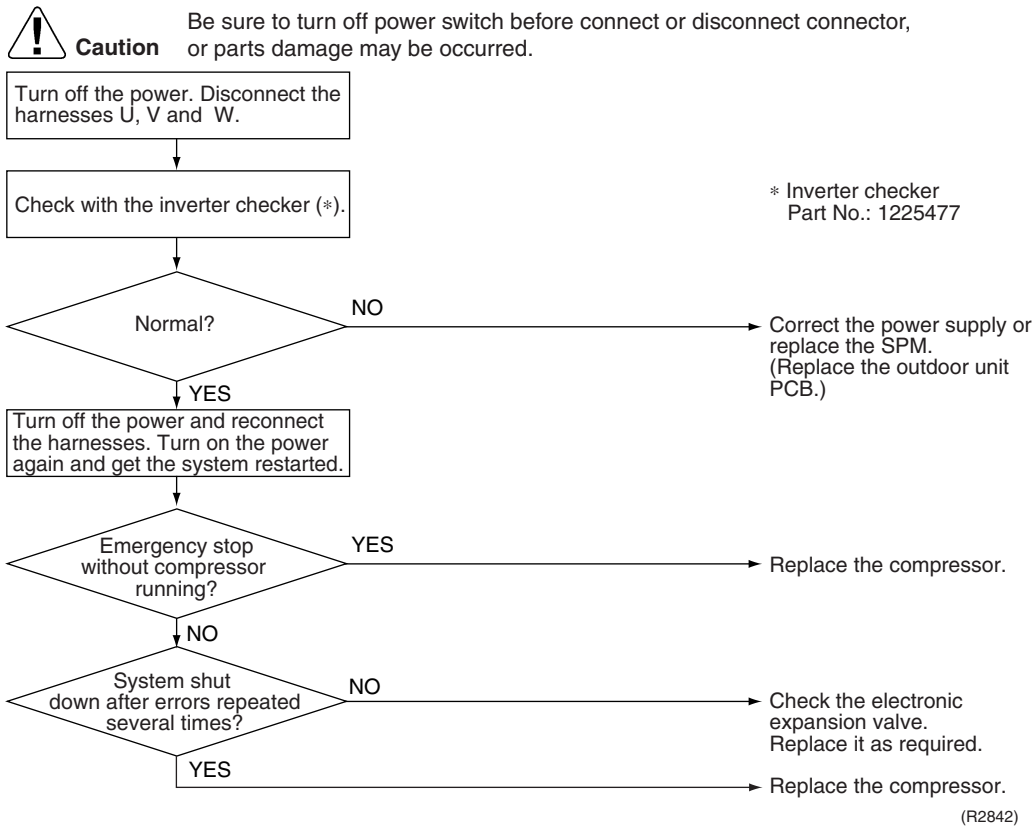
Malfunction Decision Conditions

- The position detection circuit detects a compressor frequency of below 10 Hz for 20 seconds or a frequency of above 160 Hz.
- 40 seconds after the compressor has started, the position detection circuit detects a compressor frequency of above 180 Hz.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

- Compressor locked

Troubleshooting



5.13 DC Fan Lock

Remote Controller Display

E7

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ☼ 4 ☼

Method of Malfunction Detection

A fan motor line error is detected by checking the high-voltage fan motor rpm being detected by the Hall IC.

Malfunction Decision Conditions

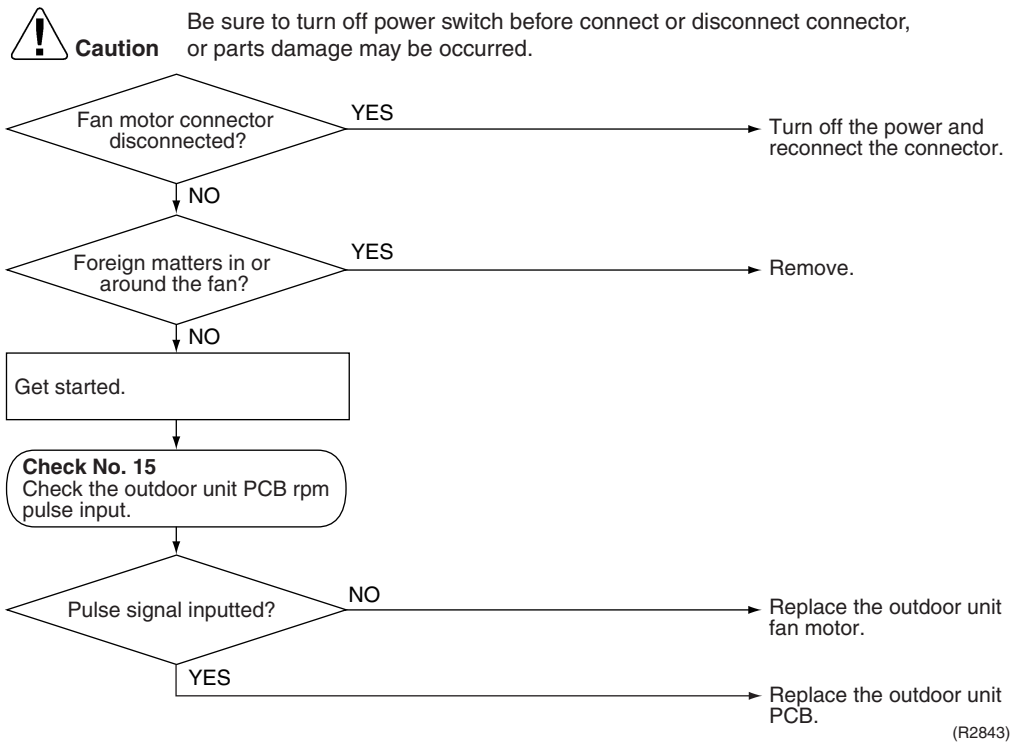
- The fan does not start in 30 seconds even when the fan motor is running.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

- Fan motor breakdown
- Harness or connector disconnected between fan motor and PCB or in poor contact
- Foreign matters stuck in the fan

Troubleshooting

Check No.15
Refer to P.220



5.14 Input Over Current Detection

Remote Controller Display

E8

Outdoor Unit LED Display

A ◑ 1 ● 2 ☼ 3 ● 4 ☼

Method of Malfunction Detection

Malfunction is detected by checking the input current value.

Malfunction Decision Conditions

- The following condition continues for 2.5 seconds.
  Input current ≥ 11A (typical value)
- The compressor halts if the error occurs, and restarts automatically after 3 minutes stand-by.

Supposed Causes

- Over-current due to compressor failure
- Over-current due to defective power transistor
- Over-current due to defective inverter main circuit electrolytic capacitor
- Over-current due to defective outdoor unit PCB
- Error detection due to outdoor unit PCB
- Over-current due to short-circuit

Troubleshooting

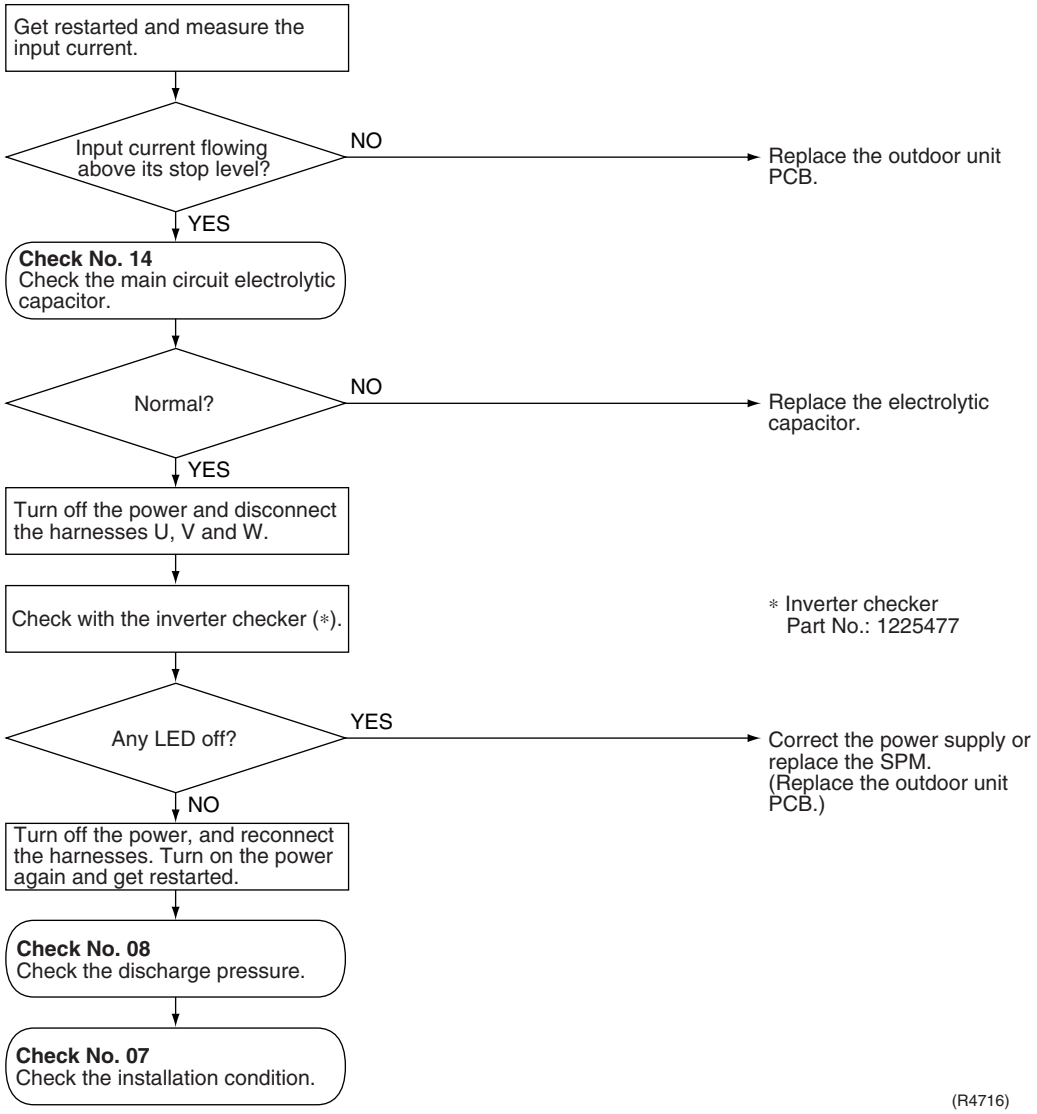
Check No.07
Refer to P.216

Check No.08
Refer to P.217

Check No.14
Refer to P.220

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

* An input over-current may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an input over-current, take the following procedure.



(R4716)

5.15 Four Way Valve Abnormality

Remote Controller Display

EA

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ● 3 ● 4 ●

Method of Malfunction Detection

The liquid pipe thermistor, the outdoor temperature thermistor and the outdoor unit heat exchanger thermistor are checked to see if they function within their normal ranges in the operating mode.

Malfunction Decision Conditions

Either of the following conditions occurs 6 minutes after the compressor has started.

- Cooling / dry operation
  (Outdoor unit heat exchanger temperature – Liquid pipe temperature) < –5°C
- Heating operation
  (Liquid pipe temperature – Outdoor unit heat exchanger temperature) < 0°C

Supposed Causes

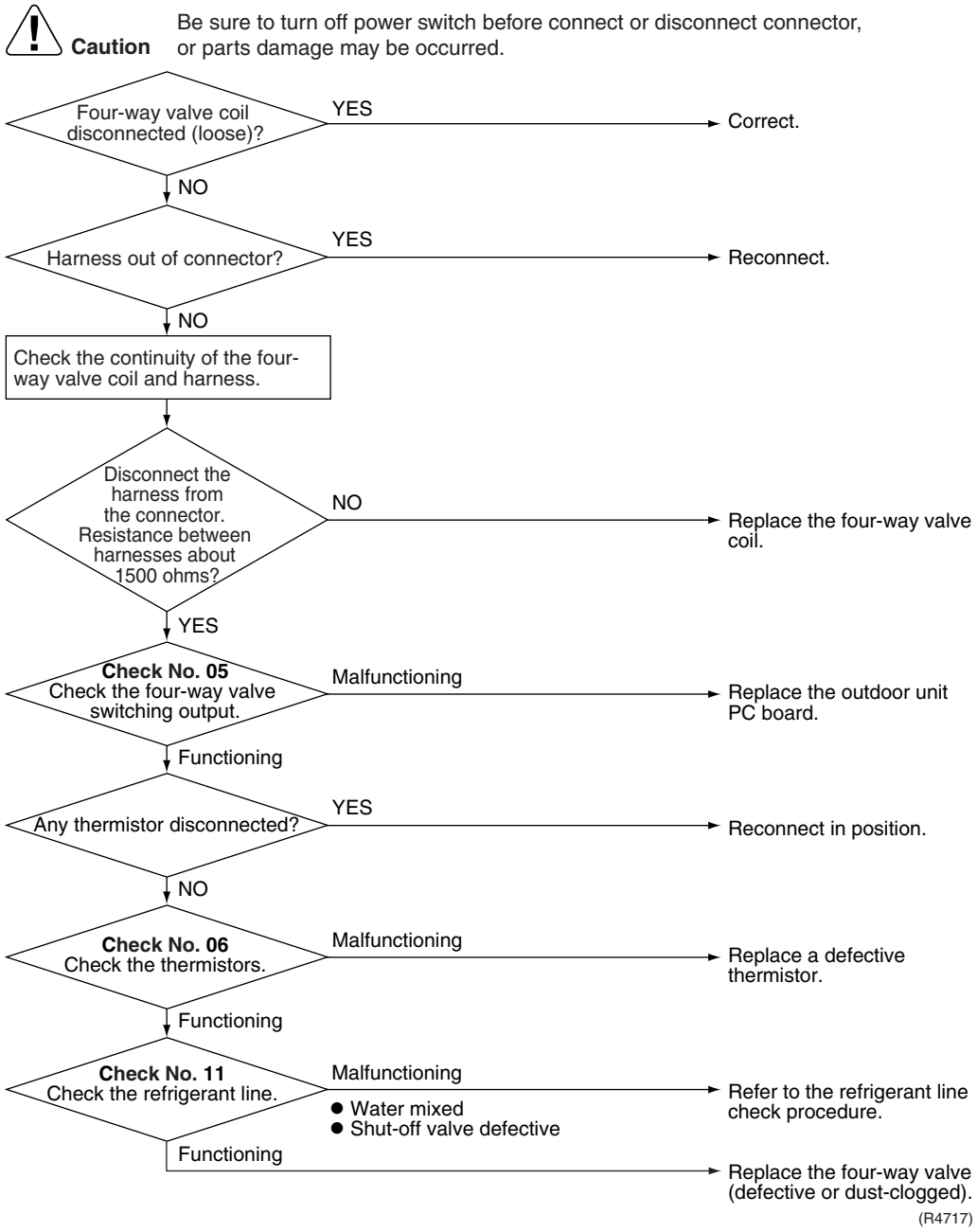
- Connector in poor contact
- Thermistor defective
- Outdoor unit PCB defective
- Four way valve coil or harness defective
- Four way valve defective
- Foreign substance mixed in refrigerant

Troubleshooting

Check No.05
Refer to P.214

Check No.06
Refer to P.215

Check No.11
Refer to P.218



(R4717)

5.16 Discharge Pipe Temperature Control

Remote Controller Display

F3

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ● 3 ☼ 4 ●

Method of Malfunction Detection

The discharge pipe temperature control (stop, frequency drooping, etc.) is checked with the temperature being detected by the discharge pipe thermistor.

Malfunction Decision Conditions

2YC45
If the temperature being detected by the discharge pipe thermistor rises above 120°C, the compressor will stop. (The error is cleared when the temperature has dropped below 107°C.)
2YC32
The temperature at which the compressor halts varies according to the frequency.
(1) 110°C when the frequency is above 45 Hz on ascending or above 40 Hz on descending.
(2) 102°C when the frequency is between 30 Hz and 45 Hz on ascending or between 40Hz and 25Hz on descending.
(3) 98°C when the frequency is below 30 Hz on ascending or below 25 Hz on descending.

- If the compressor stops 6 times straight due to abnormal discharge pipe temperature, the system will be shut down.
- The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

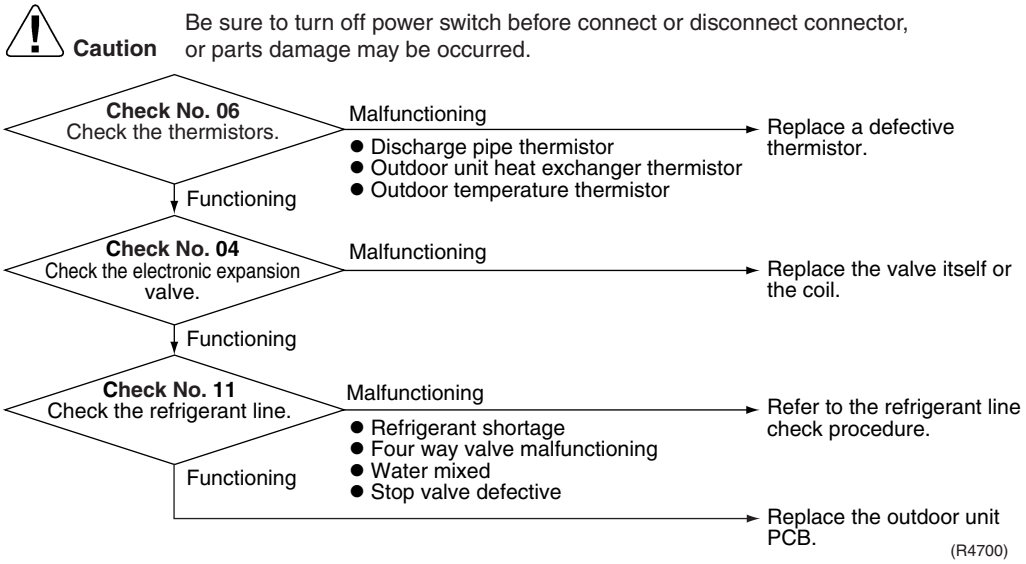
- Refrigerant shortage
- Four way valve malfunctioning
- Discharge pipe thermistor defective
  (heat exchanger or outdoor temperature thermistor defective)
- Outdoor unit PCB defective
- Water mixed in the local piping
- Electronic expansion valve defective
- Stop valve defective

Troubleshooting

Check No.04
Refer to P.213

Check No.06
Refer to P.215

Check No.11
Refer to P.218



5.17 High Pressure Control in Cooling

Remote Controller Display

F6

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ● 3 ☼ 4 ☼

Method of Malfunction Detection

High-pressure control (stop, frequency drop, etc.) is activated in the cooling mode if the temperature being sensed by the heat exchanger thermistor exceeds the limit.

Malfunction Decision Conditions

- Activated when the temperature being sensed by the heat exchanger thermistor rises above 65°C.
- The error is cleared when the temperature drops below 50°C.

Supposed Causes

- The installation space is not large enough.
- Faulty outdoor unit fan
- Faulty electronic expansion valve
- Faulty outdoor unit heat exchanger thermistor
- Faulty outdoor unit PCB
- Faulty stop valve
- Dirty heat exchanger

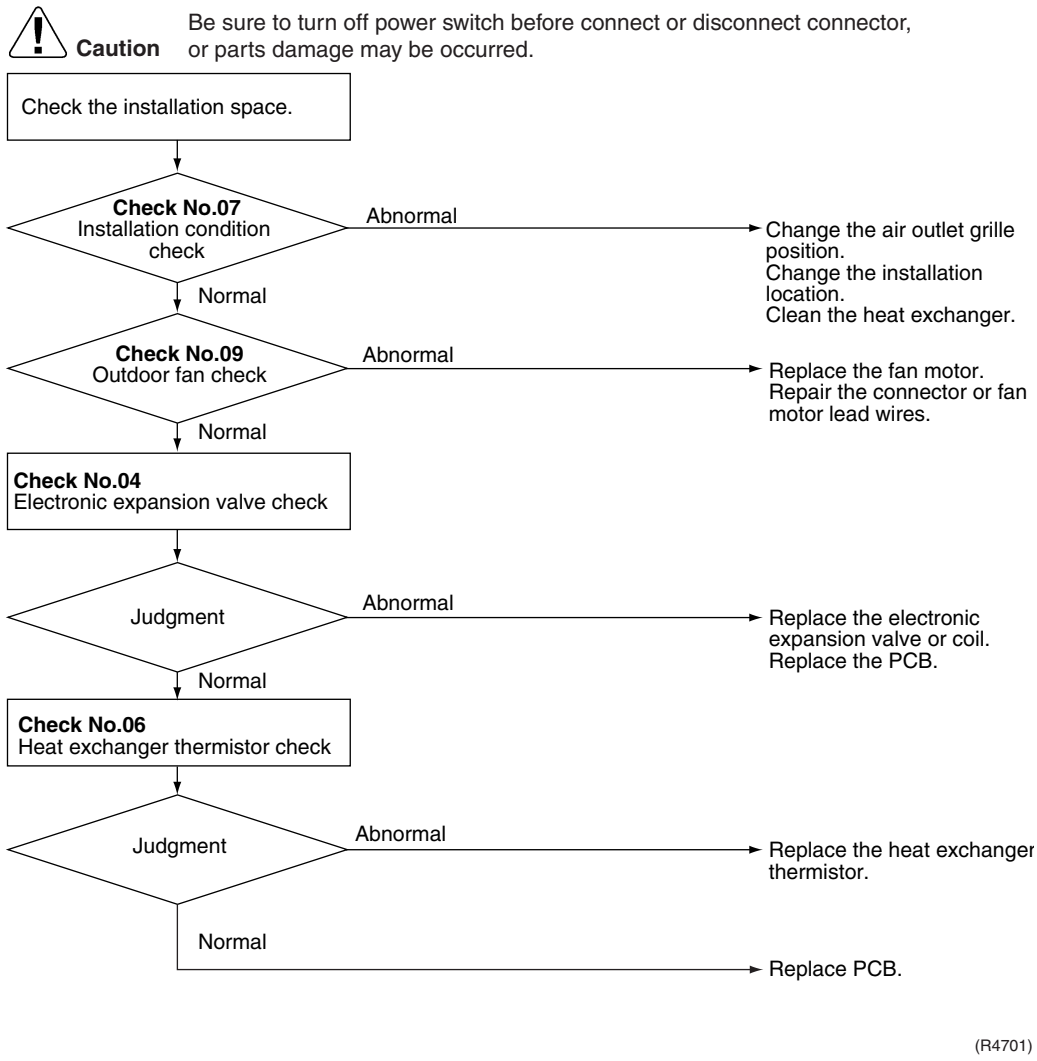
Troubleshooting

Check No.04
Refer to P.213

Check No.06
Refer to P.215

Check No.07
Refer to P.216

Check No.09
Refer to P.217



(R4701)

5.18 Position Sensor Abnormality

Remote Controller Display

H6

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ● 4 ●

Method of Malfunction Detection

A compressor startup failure is detected by checking the compressor running condition through the position detection circuit.

Malfunction Decision Conditions

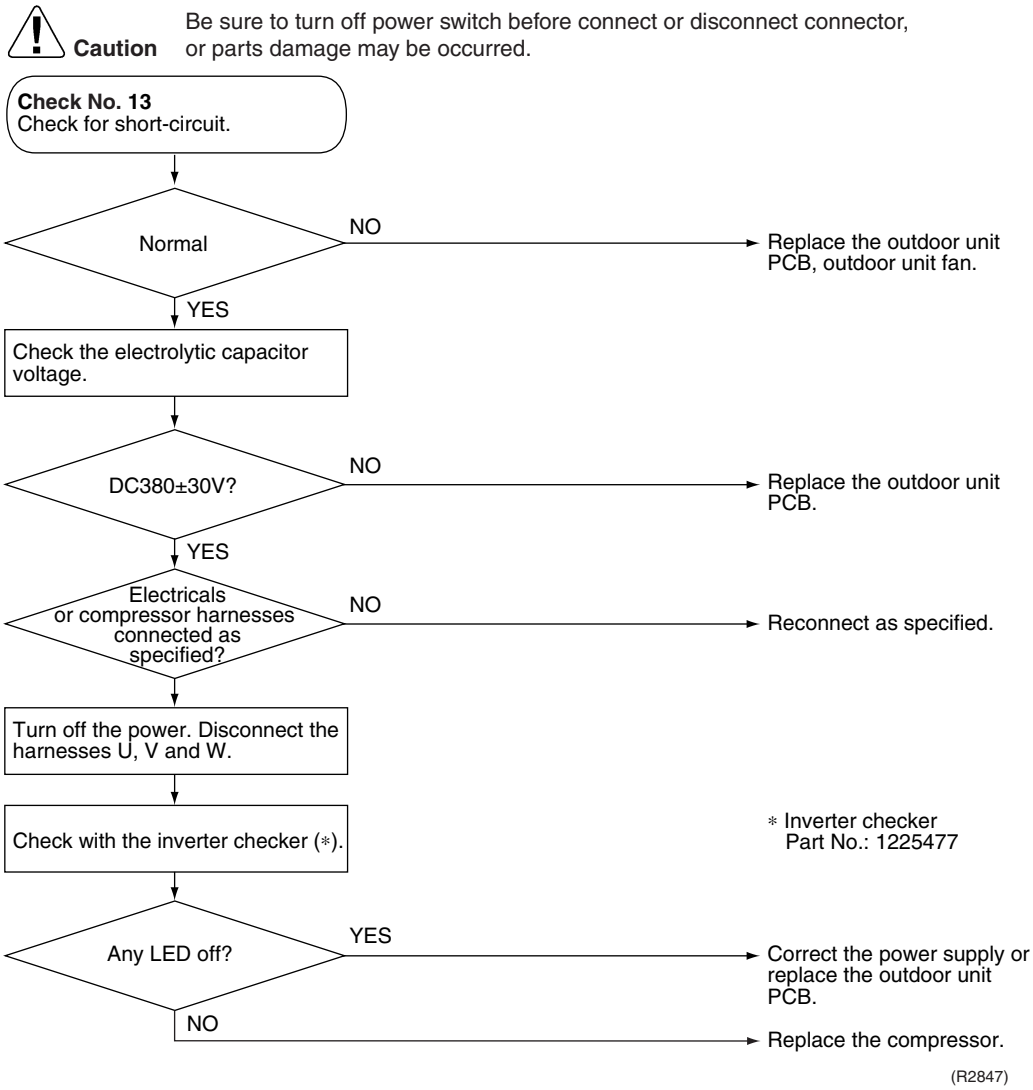
- The compressor fails to start in about 15 seconds after the compressor run command signal is sent.
- Clearing condition: Continuous run for about 5 minutes (normal)
- The system will be shut down if the error occurs 16 times.

Supposed Causes

- Compressor relay cable disconnected
- Compressor itself defective
- Outdoor unit PCB defective
- Stop valve closed
- Input voltage out of specification

Troubleshooting

Check No.13
Refer to P.219



5.19 CT or Related Abnormality

Remote Controller Display

H8

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ● 4 ●

Method of Malfunction Detection

A CT or related error is detected by checking the compressor running frequency and CT-detected input current.

Malfunction Decision Conditions

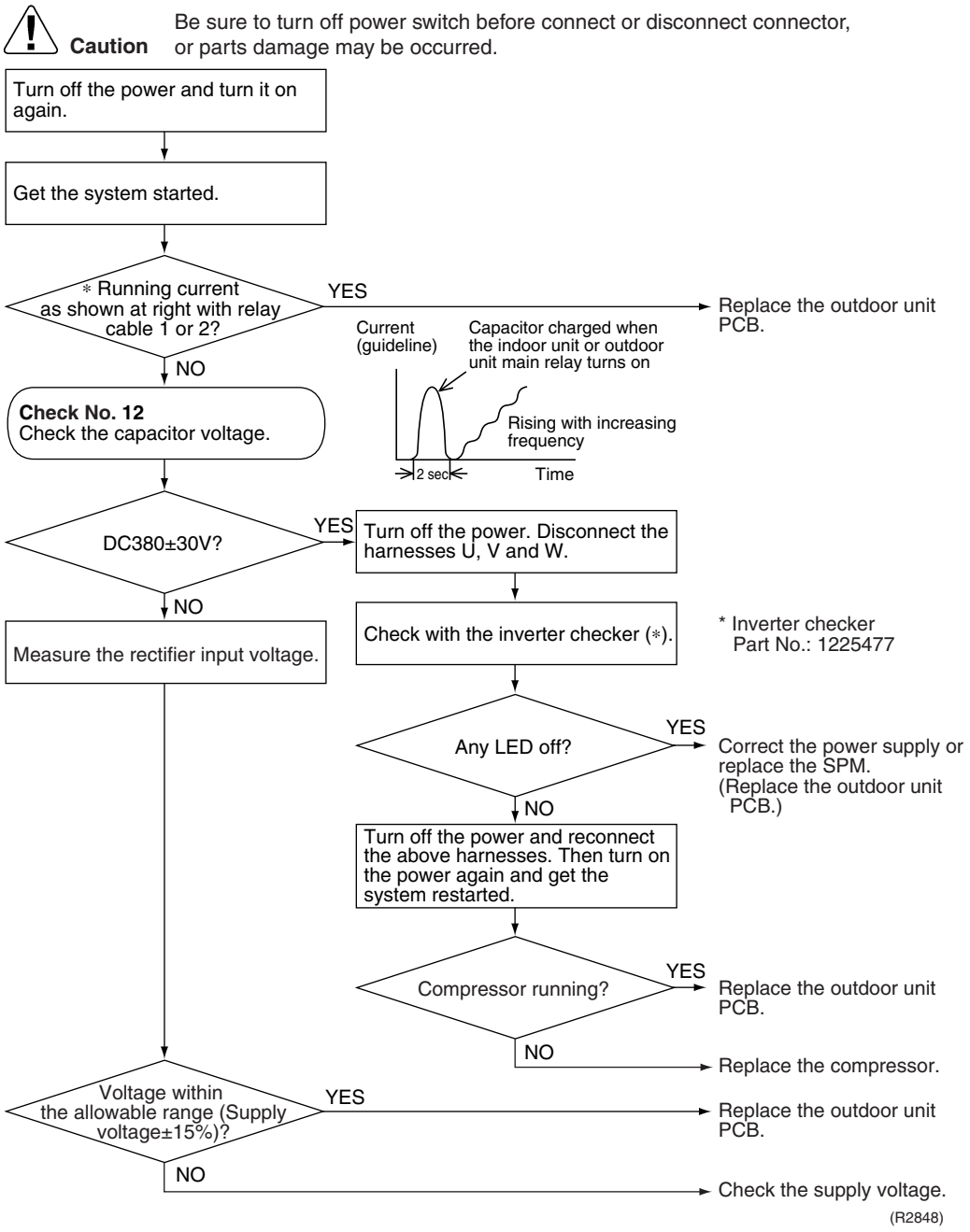
- The compressor running frequency is below 55 Hz and the CT input is below 0.1 V. (The input current is also below 1.25 A.)
- If this error repeats 4 times, the system will be shut down.
- The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

- Power transistor defective
- Internal wiring broken or in poor contact
- Reactor defective
- Outdoor unit PCB defective

Troubleshooting

Check No.12
Refer to P.219



5.20 Thermistor or Related Abnormality (Outdoor Unit)

Remote Controller Display

P4, J3, J6, J8, J9, H9

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ● 4 ●

Method of Malfunction Detection

This type of error is detected by checking the thermistor input voltage to the microcomputer. [A thermistor error is detected by checking the temperature being detected by each thermistor.]

Malfunction Decision Conditions

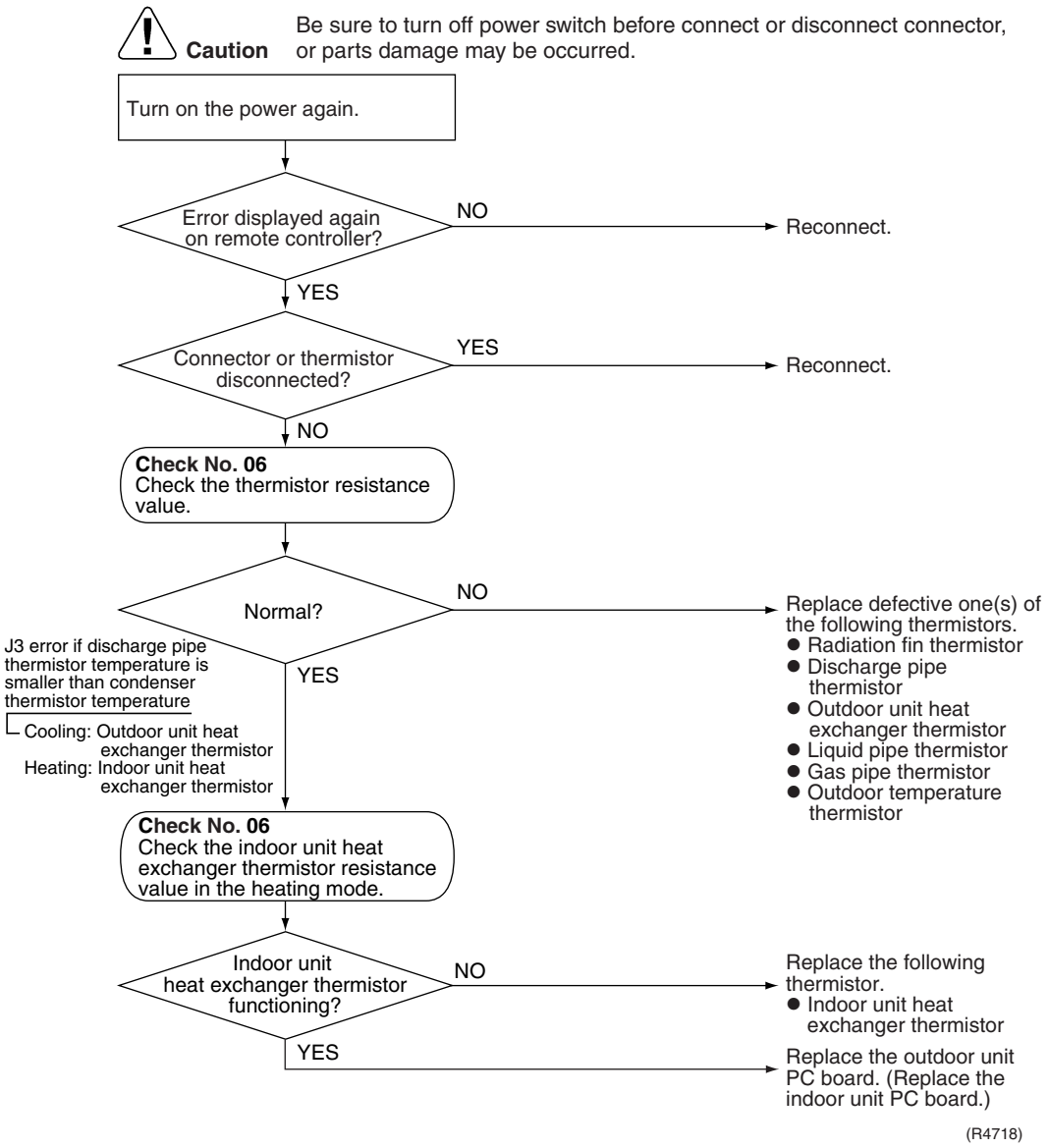
When the thermistor input is above 4.96 V or below 0.04 V with the power on, the J3 error is judged if the discharge pipe thermistor temperature is smaller than the condenser thermistor temperature, or the system will be shut down if all the units are judged with the J8 error.

Supposed Causes

- Connector in poor contact
- Thermistor defective
- Outdoor unit PCB defective
- Indoor unit PCB defective
- Condenser thermistor defective in the case of J3 error (outdoor unit heat exchanger thermistor in the cooling mode, or indoor unit heat exchanger thermistor in the heating mode)

Troubleshooting

Check No.06
Refer to P.215



P4 : Radiation fin thermistor
J3 : Discharge pipe thermistor
J6 : Outdoor unit heat exchanger thermistor
J8 : Liquid pipe thermistor
J9 : Gas pipe thermistor
H9 : Outdoor temperature thermistor

5.21 Electrical Box Temperature Rise

Remote Controller Display

L3

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ● 4 ☼

Method of Malfunction Detection

An electrical box temperature rise is detected by checking the radiation fin thermistor with the compressor off.

Malfunction Decision Conditions

- With the compressor off, the radiation fin temperature is above 80°C (above 75°C for 80 · 90 class).
- The error is cleared when the temperature drops below 70°C (below 65°C for 80 · 90 class).

Supposed Causes

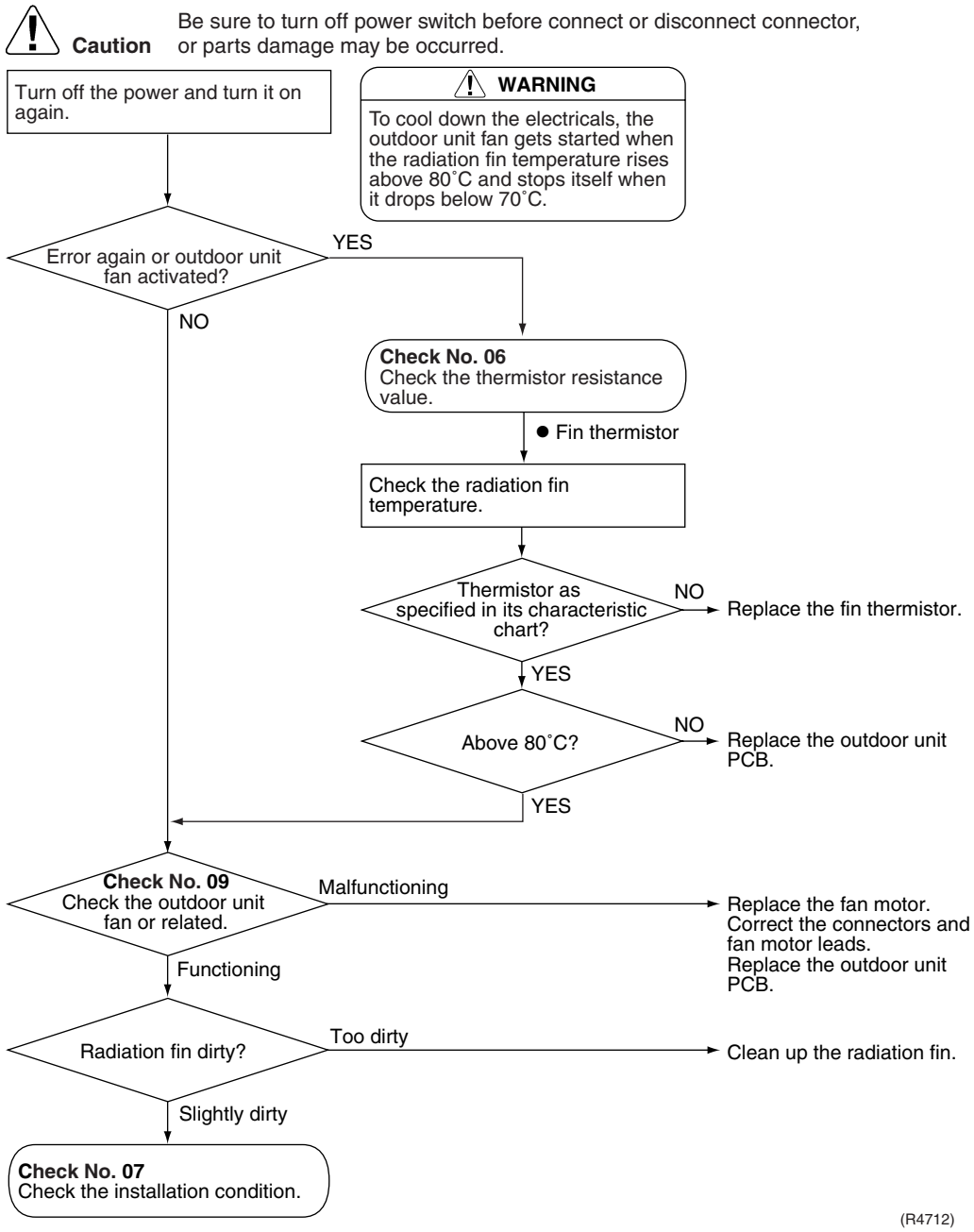
- Fin temperature rise due to defective outdoor unit fan
- Fin temperature rise due to short-circuit
- Fin thermistor defective
- Connector in poor contact
- Outdoor unit PCB defective

Troubleshooting

Check No.06
Refer to P.215

Check No.07
Refer to P.216

Check No.09
Refer to P.217



(R4712)

5.22 Radiation Fin Temperature Rise

Remote Controller Display

L4

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ● 4 ☼

Method of Malfunction Detection

A radiation fin temperature rise is detected by checking the radiation fin temperature being detected by the fin thermistor with the compressor on.

Malfunction Decision Conditions

- The radiation fin temperature with the compressor on is above 90°C (above 85°C for 80 · 90 class).
- The error is cleared when the temperature drops below 85°C (below 80°C for 80 · 90 class).
- If a radiation fin temperature rise takes place 255 times successively, the system will be shut down.
- The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

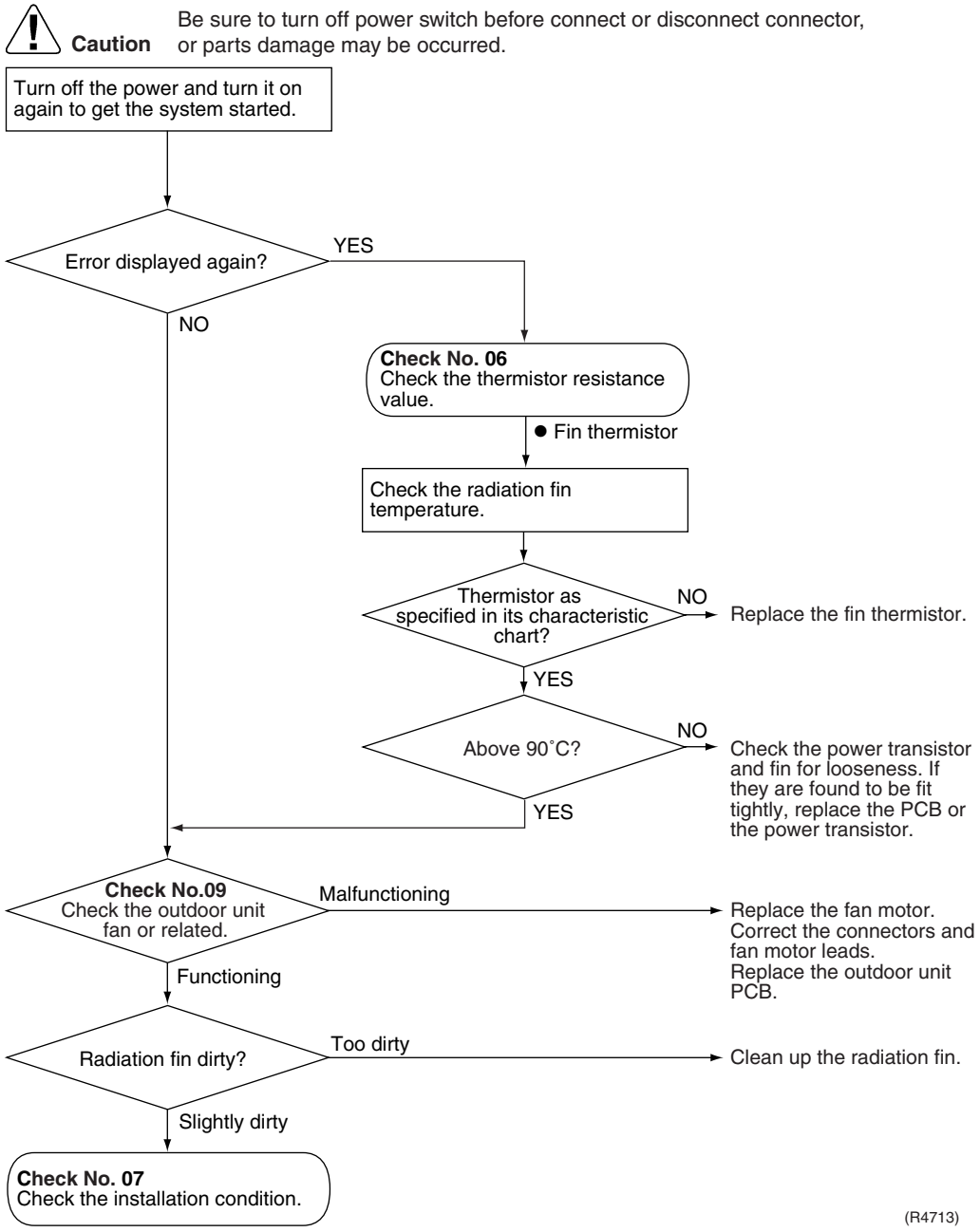
- Fin temperature rise due to defective outdoor unit fan
- Fin temperature rise due to short-circuit
- Fin thermistor defective
- Connector in poor contact
- Outdoor unit PCB defective

Troubleshooting

Check No.06
Refer to P.215

Check No.07
Refer to P.216

Check No.09
Refer to P.217



5.23 Output Over Current Detection

Remote Controller Display

L5

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ☼ 4 ●

Method of Malfunction Detection

An output over-current is detected by checking the current that flows in the inverter DC section.

Malfunction Decision Conditions

- A position signal error occurs while the compressor is running.
- A speed error occurs while the compressor is running.
- An output over-current input is fed from the output over-current detection circuit to the microcomputer.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

- Over-current due to defective power transistor
- Over-current due to wrong internal wiring
- Over-current due to abnormal supply voltage
- Over-current due to defective PCB
- Error detection due to defective PCB
- Over-current due to closed stop valve
- Over-current due to compressor failure
- Over-current due to poor installation condition

Troubleshooting

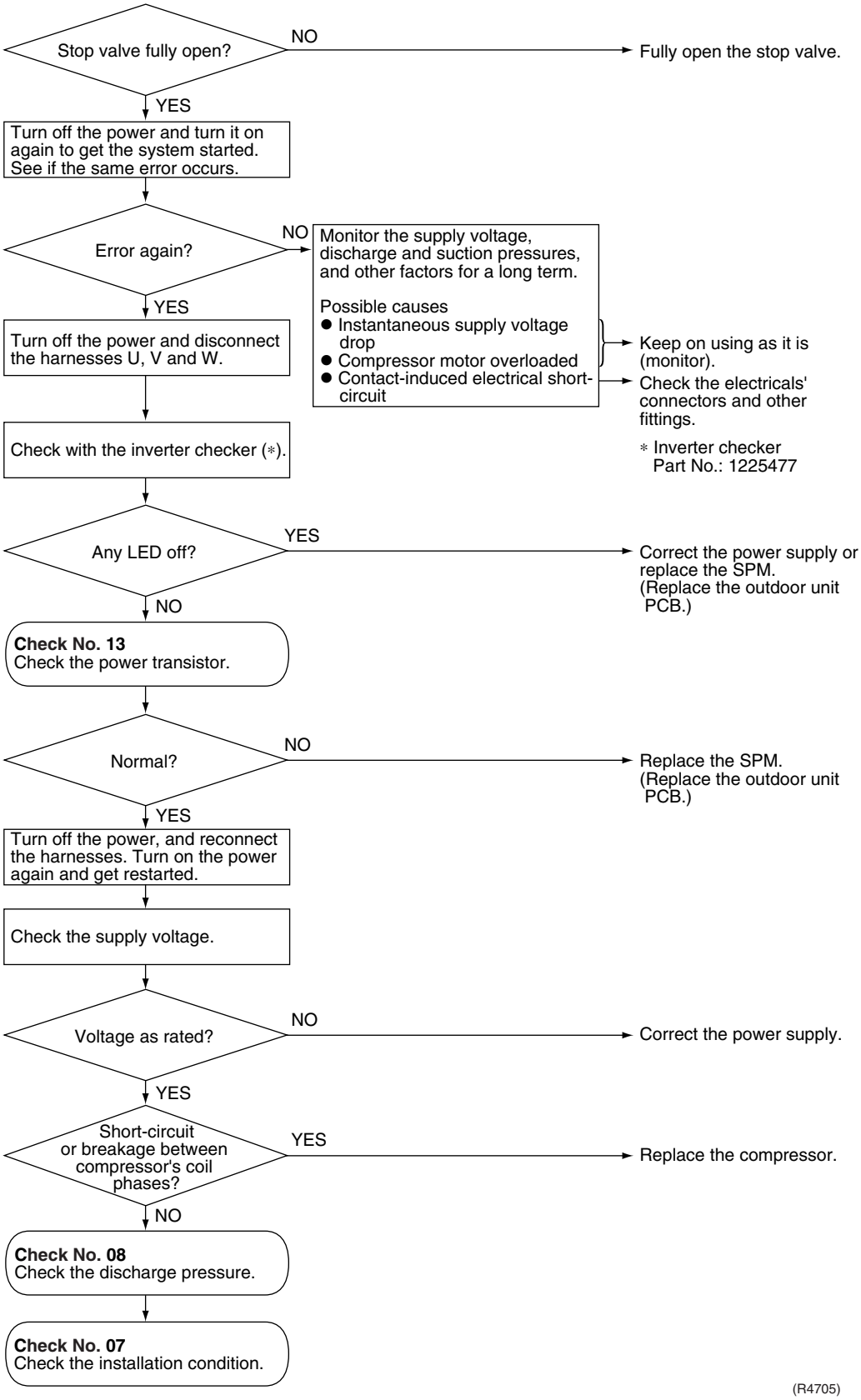
Check No.07
Refer to P.216

Check No.08
Refer to P.217

Check No.13
Refer to P.219

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

* An output over-current may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an output over-current, take the following procedure.



5.24 Insufficient Gas

Remote Controller Display

U0

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ☼ 4 ☼

Method of Malfunction Detection

Gas shortage detection I:
Gas shortage is detected by checking the input current value and the compressor running frequency. If the gas is short, the input current is smaller than the normal value.

Gas shortage detection II:
Gas shortage is detected by checking the discharge temperature and the opening of the electronic expansion valve. If the gas is short, the discharge temperature tends to rise.

Malfunction Decision Conditions

Gas shortage detection I (typical value):
The following conditions continue for 7 minutes.
- Input current × input voltage ≤ 1756 / 256 × output frequency +50 (W)
- Output frequency > 55 (Hz)

Gas shortage detection II:
The following conditions continue for 80 seconds.
- Target opening of the electronic expansion valve ≥ 450 (pulse)
- Cooling: discharge temperature > 255 / 256 × target discharge temperature +20 (°C)
  Heating: discharge temperature > 255 / 256 × target discharge temperature +40 (°C)

If a gas shortage error takes place 4 times straight, the system will be shut down. The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

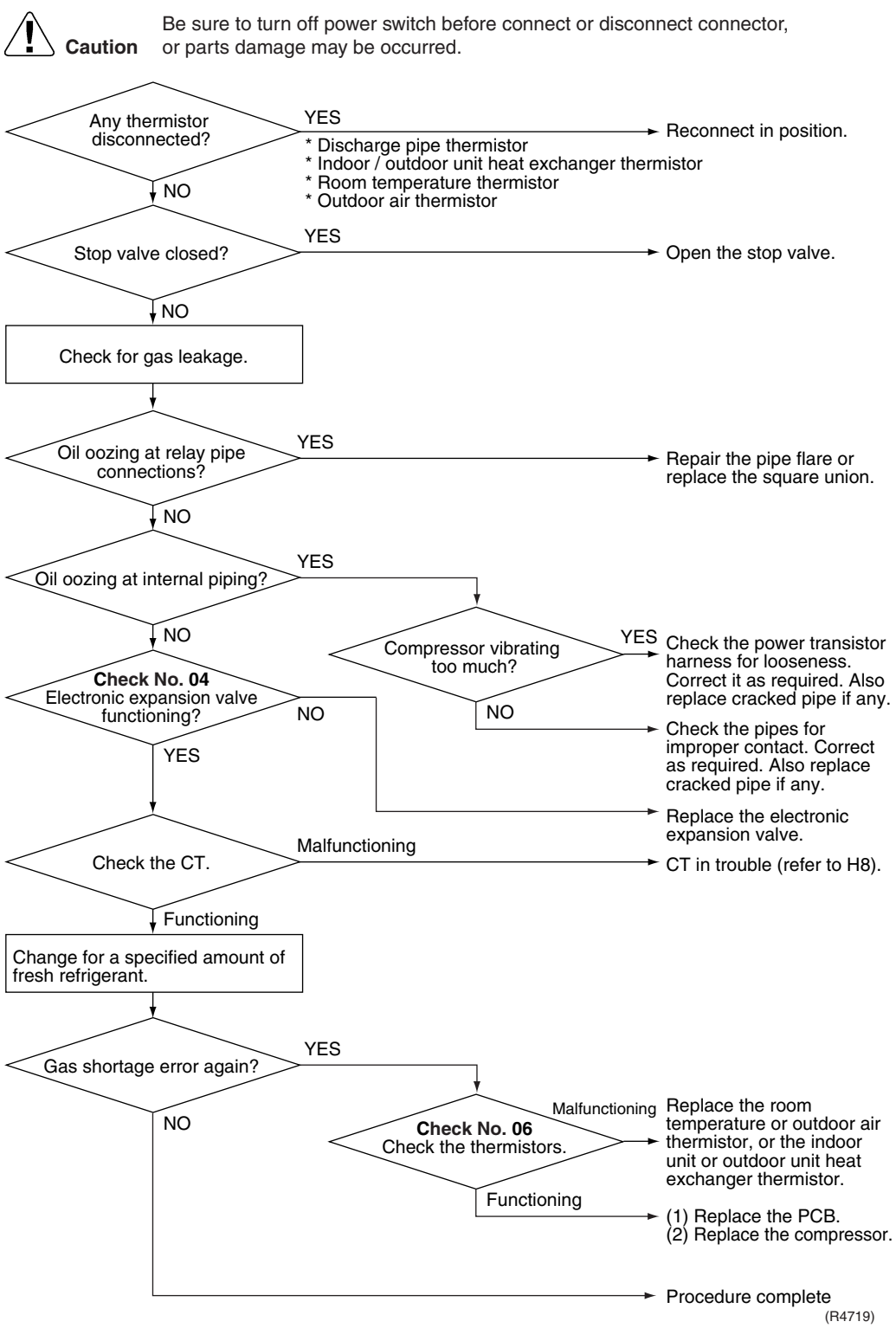
Supposed Causes

- Refrigerant shortage (refrigerant leakage)
- Poor compression performance of compressor
- Discharge pipe thermistor disconnected, or indoor unit or outdoor unit heat exchanger thermistor disconnected, room or outside air temperature thermistor disconnected
- Stop valve closed
- Electronic expansion valve defective

Troubleshooting

Check No.04
Refer to P.213

Check No.06
Refer to P.215



5.25 Low-voltage Detection

Remote Controller Display

U2

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ● 3 ● 4 ☼

Method of Malfunction Detection

An abnormal voltage rise or drop is detected by checking the detection circuit or DC voltage detection circuit.

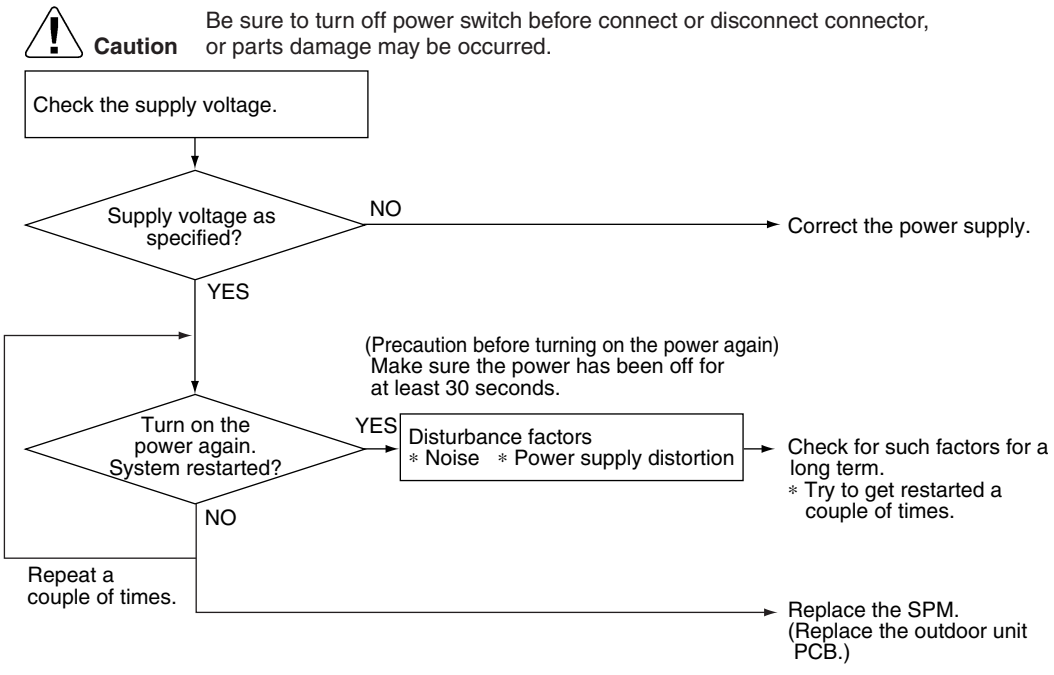
Malfunction Decision Conditions

- An over-voltage signal is fed from the over-voltage detection circuit to the microcomputer, or the voltage being detected by the DC voltage detection circuit is judged to be below 150 V for 0.1 second.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 60 minutes (normal)

Supposed Causes

- Supply voltage not as specified
- Over-voltage detector or DC voltage detection circuit defective
- PAM control part(s) defective

Troubleshooting



5.26 Anti-icing Function in Other Rooms / Unspecified Voltage (between Indoor and Outdoor Units)

Remote Controller Display

UA, UH

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ● 4 ●

Method of Malfunction Detection

A wrong connection is detected by checking the combination of indoor and outdoor units on the microcomputer.

Malfunction Decision Conditions

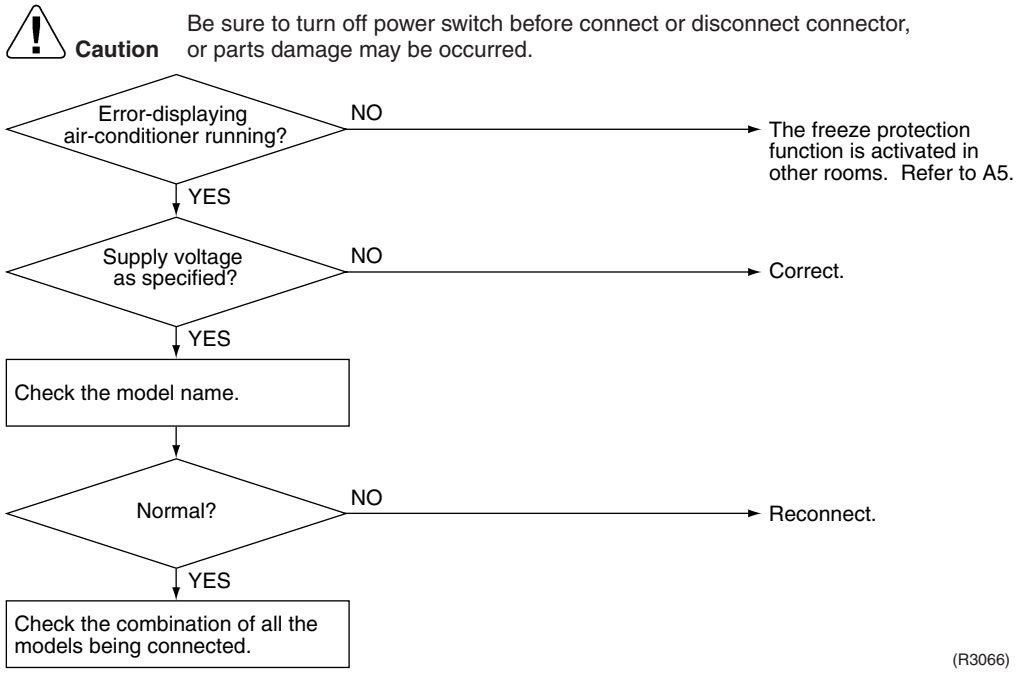
- Operation halt due to the anti-icing function in other rooms
- Operation halt due to unspecified internal and/or external voltages
- Operation halt due to mismatching of indoor and outdoor units

Supposed Causes

- Operation halt due to the anti-icing function in other rooms
- Wrong connections at the indoor unit
- PCB wrongly connected

Troubleshooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



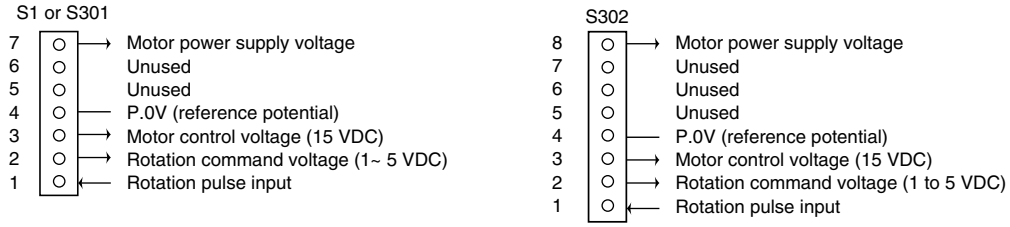
6. Check

6.1 How to Check

6.1.1 Fan Motor Connector Output Check

Check No.01

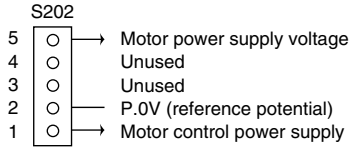
1. Check connector connection.
2. Check motor power supply voltage output (pins 4-7 and 4-8).
3. Check motor control voltage (pins 4-3).
4. Check rotation command voltage output (pins 4-2).
5. Check rotation pulse input (pins 4-1).



(R4684)

Check No.02

1. Check connector connection.
2. Check motor control voltage output (pins 2-1).

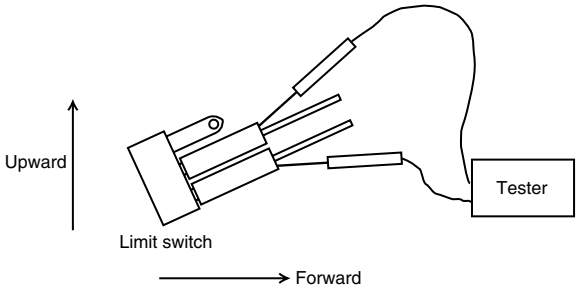


(R1073)

6.1.2 Limit Switch Continuity Check

Check No.03

Remove the front grille. The limit switch is located at the left side of the drain pan assembly. Check the continuity of the switch connection.



Shutter status	Open	Closed
Continuity	Continuity	No continuity

(Q0363)

* The shutter can be opened and closed with hand. Keep the shutter open and closed all the way for each continuity check steps.

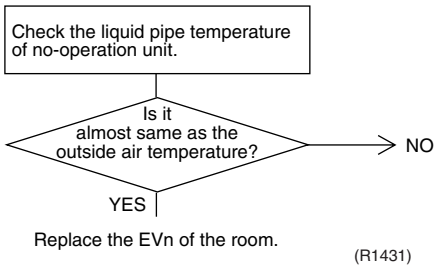
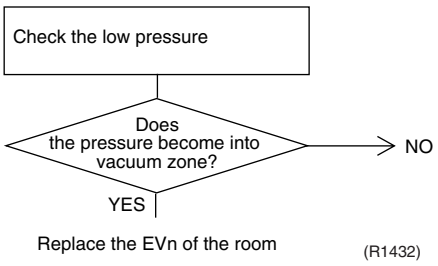
6.1.3 Electronic Expansion Valve Check

Check No.04

Conduct the followings to check the electronic expansion valve (EV).

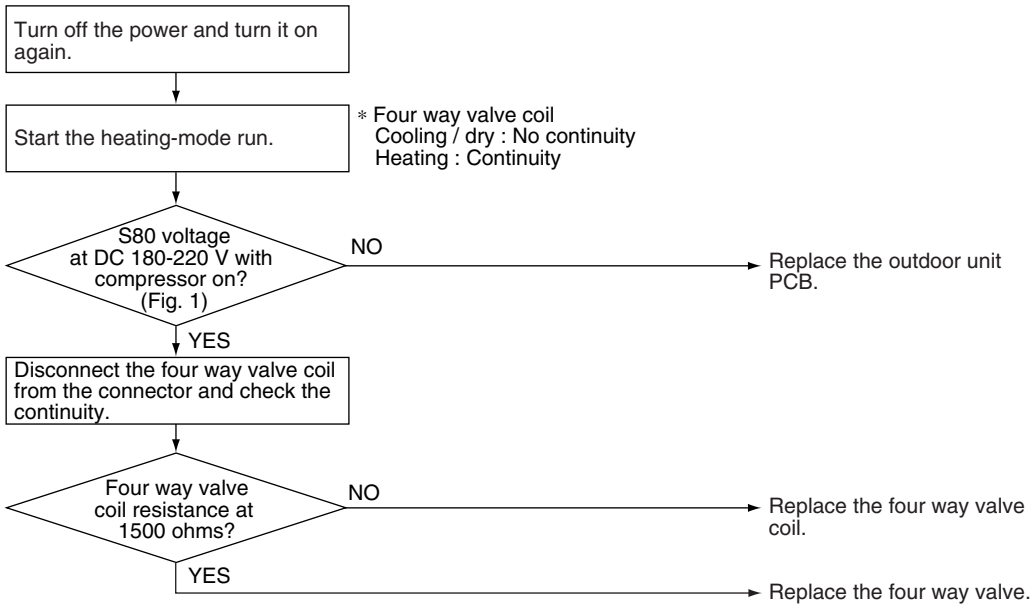
1. Check to see if the EV connector is correctly inserted in the PCB. Compare the EV unit and the connector number.
2. Turn the power off and back on again, and check to see if all the EVs generate latching sound.
3. If any of the EVs does not generate latching noise in the above step 2, disconnect that connector and check the conductivity using a tester.
   Check the conductivity between pins 1, 3 and 6, and between pins 2, 4 and 5. If there is no conductivity between the pins, the EV coil is faulty.
4. If no EV generates latching sound in the above step 2, the outdoor unit PCB is faulty.
5. If the conductivity is confirmed in the above step 2, mount a good coil (which generated latching sound) in the EV unit that did not generate latching sound, and check to see if that EV generates latching sound.
   ∗If latching sound is generated, the outdoor unit PCB is faulty.
   ∗If latching sound is not generated, the EV unit is faulty.

Note: Please note that the latching sound varies depending on the valve type.

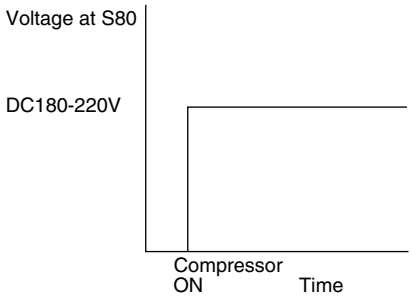
Valve Body Condition (Symptom)	Check Method / Measure
(1) Valve body catches at fully opened or half opened position. (Symptom) Cooling: ■Water leakage at the no-operation unit ■Flow noise of refrigerant in the no-operation unit ■Operation halt due to icing protection Heating: ■The unit does not heat ■Refrigerant flow rate vary by unit (Discharge air temperatures are different by room) ■Peak cut	Reset power supply and conduct cooling operation unit by unit. 
(2) Valve body catches at complete close position. (Symptom) Cooling: ■The only unit having problem does not cool the room . ■When the only faulty unit is in operation, the unit makes pump down. (The low pressure of the unit becomes vacuum) ■IT is activated. ■Abnormal discharge pipe temperature Heating: Insufficient gas due to liquid refrigerant stagnation inside the faulty indoor unit (Only for heat pump model) ■The unit does not heat the room. ■IT is activated. ■Abnormal discharge pipe temperature	Reset power supply and conduct cooling operation unit by unit. 
(3) Valve does not open fully. (Symptom) ■The unit does not cool nor heat (only for heat pump model.) ■IT is actuated. ■Abnormal discharge pipe temperature	Check the number of rotation of shaft if it is 5 and half from full open to complete close using manual coil for electronic expansion valve. When the number of rotation of shaft is less than the above value, the valve may catch anywhere of the body.

6.1.4 Four Way Valve Performance Check

Check No.05



(Fig. 1)



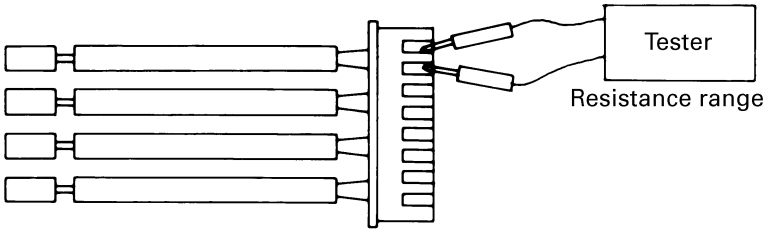
(R2856)

6.1.5 Thermistor Resistance Check

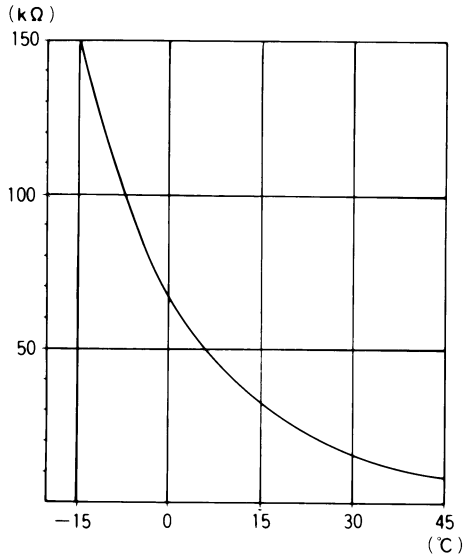
Check No.06

Remove the connectors of the thermistors on the PCB, and measure the resistance of each thermistor using tester.
The relationship between normal temperature and resistance is shown in the graph and the table below.

Thermistor Temperature (°C)	R25°C=20kΩ B=3950
-20	211.0 (kΩ)
-15	150
-10	116.5
-5	88
0	67.2
5	51.9
10	40
15	31.8
20	25
25	20
30	16
35	13
40	10.6
45	8.7
50	7.2



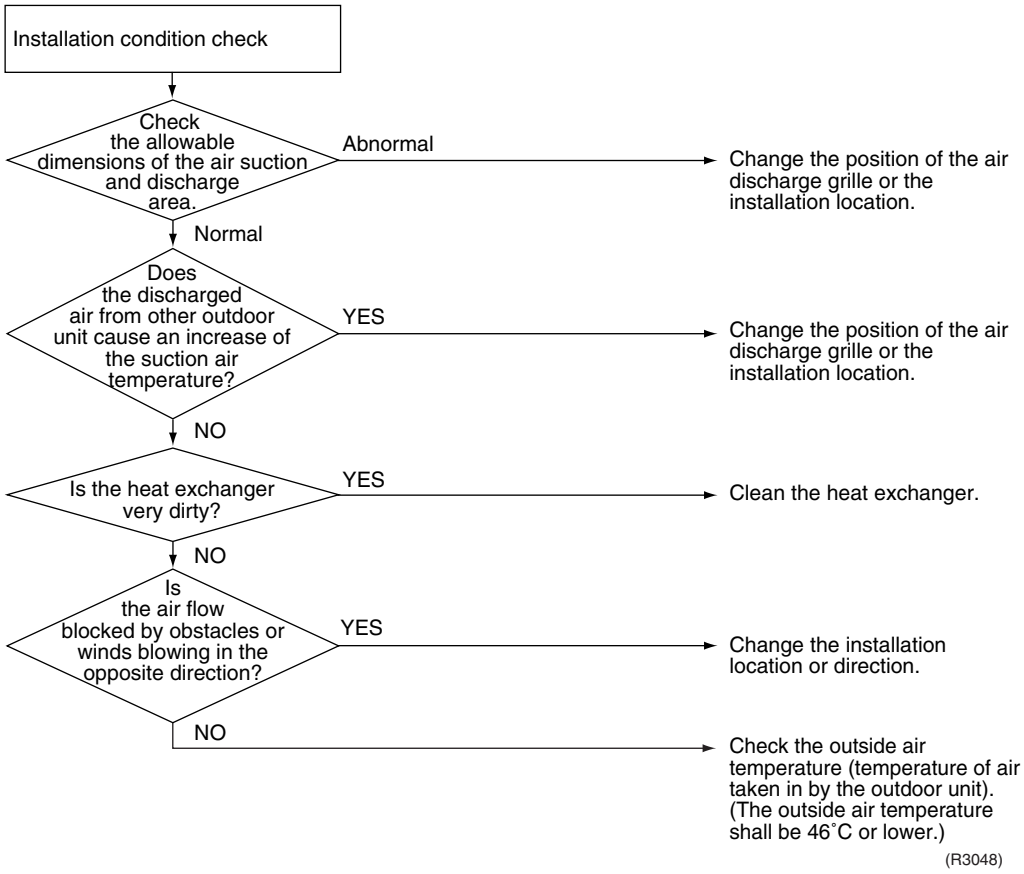
（R25＝20kΩ、B＝3950）



(R1437)

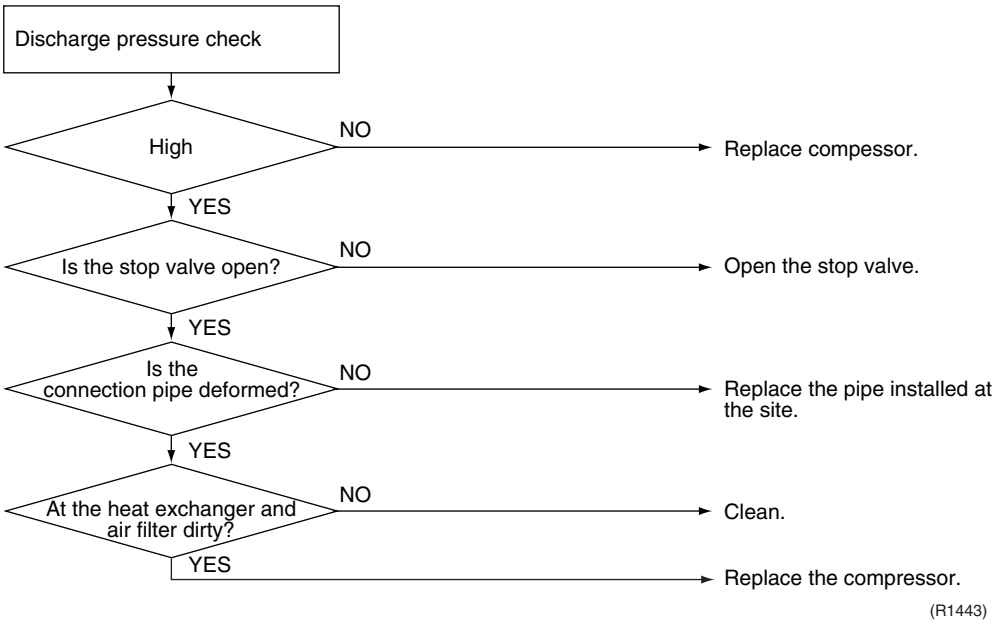
6.1.6 Installation Condition Check

Check No.07



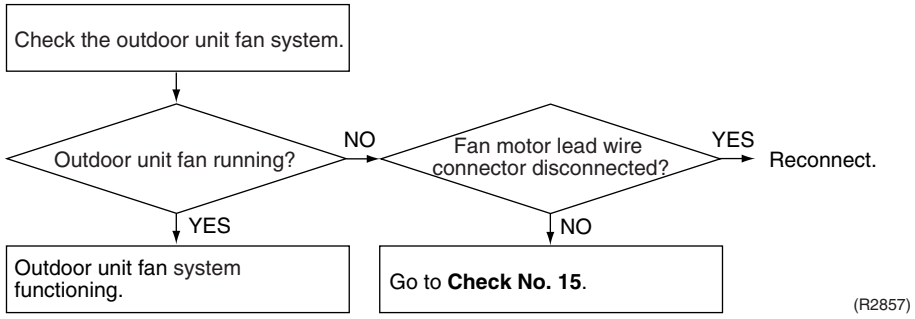
6.1.7 Discharge Pressure Check

Check No.08



6.1.8 Outdoor Unit Fan System Check (With DC Motor)

Check No.09



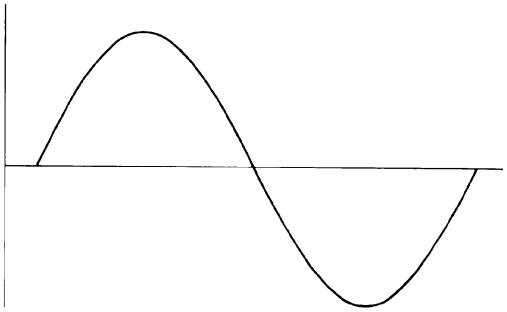
6.1.9 Power Supply Waveforms Check

Check No.10

Measure the power supply waveform between pins 1 and 3 on the terminal board, and check the waveform disturbance.

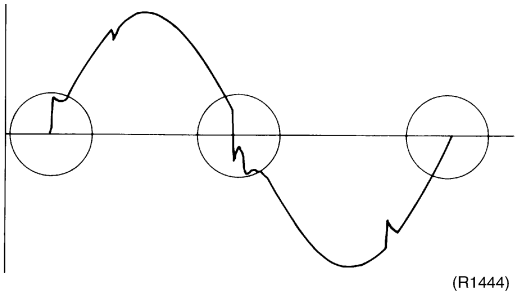
- Check to see if the power supply waveform is a sine wave (Fig.1).
- Check to see if there is waveform disturbance near the zero cross (sections circled in Fig.2)

[Fig.1]



(R1736)

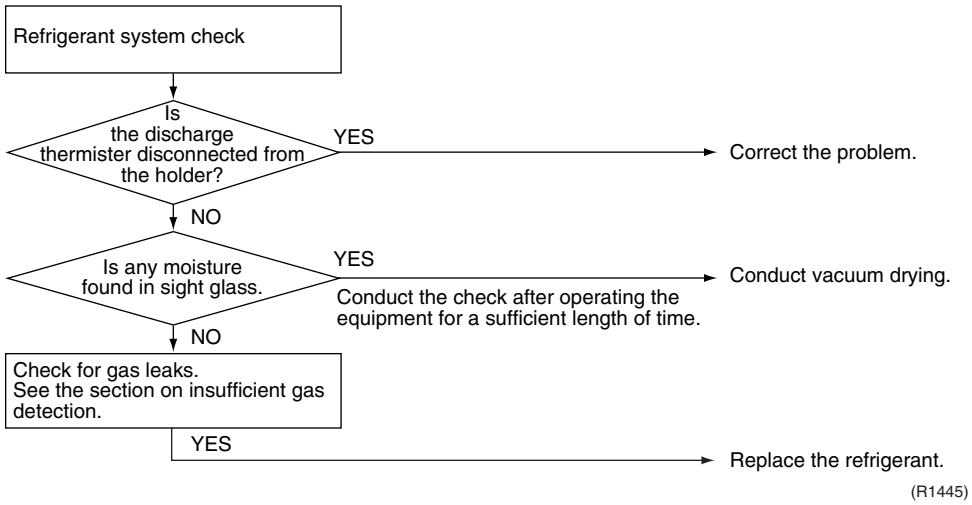
[Fig.2]



(R1444)

6.1.10 Inverter Units Refrigerant System Check

Check No.11



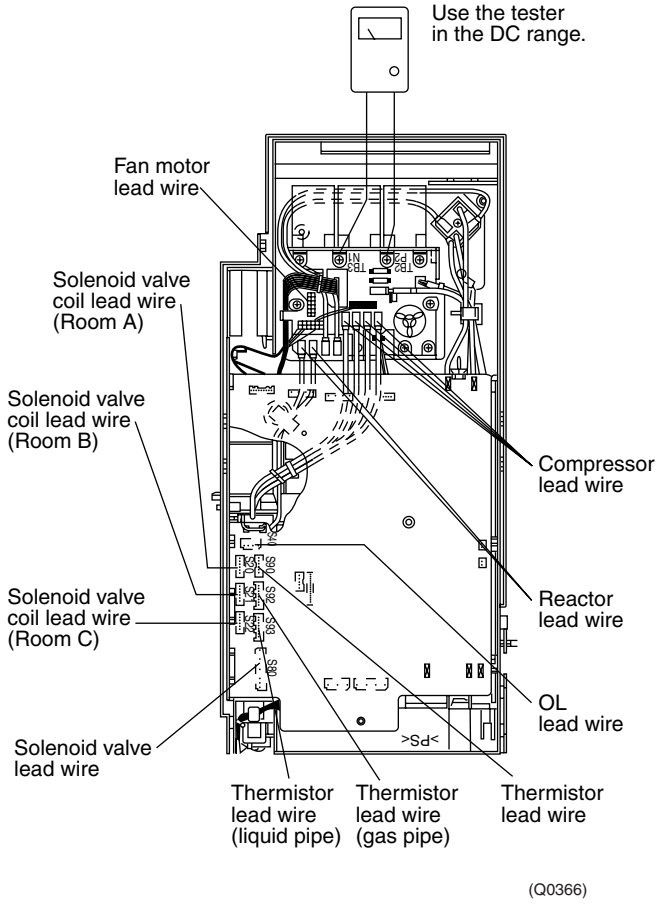
(R1445)

6.1.11 Capacitor Voltage Check

Check No.12

Before this checking, be sure to check the main circuit for short-circuit.

- Checking the capacitor voltage
- With the circuit breaker still on, measure the voltage according to the drawing of the model in question. Be careful never to touch any live parts.



6.1.12 Power Transistor Check

Check No.13

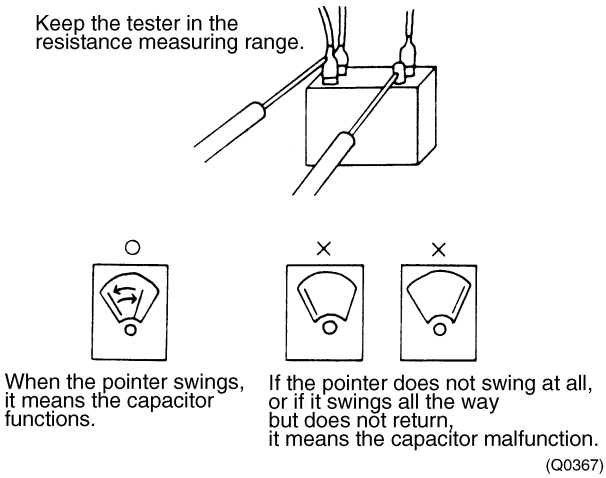
- Checking the power transistor
- Never touch any live parts for at least 10 minutes after turning off the circuit breaker.
- If unavoidably necessary to touch a live part, make sure the power transistor's supply voltage is below 50 V using the tester.
- For the UVW, make measurements at the Faston terminal on the board or the relay connector.

Tester's negative terminal	Power transistor (+)	UVW	Power transistor (–)	UVW
Tester's positive terminal	UVW	Power transistor (+)	UVW	Power transistor (–)
Normal resistance	Several kohms to several Mohms			
Abnormal resistance	0 or ∞			

6.1.13 Main Circuit Electrolytic Capacitor Check

Check No.14

- Checking the main circuit electrolytic capacitor
- Never touch any live parts for at least 10 minutes after turning off the circuit breaker.
- If unavoidably necessary to touch a live part, make sure there is no DC voltage using the tester.
- Check the continuity with the tester. Reverse the pins and make sure there is continuity.

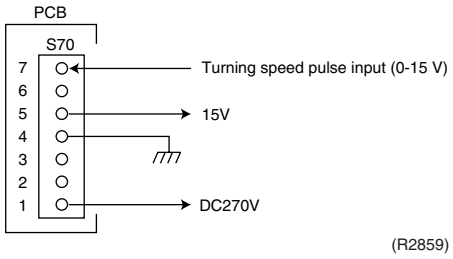


6.1.14 Turning Speed Pulse Input on the Outdoor Unit PCB Check

Check No.15

<Propeller fan motor>
Make sure the voltage of 270±30V is being applied.
(1) Stop the operation first and then the power, and disconnect the connector S70.
(2) Make sure there is about DC 270 V between pins 4 and 7.
(3) With the system and the power still off, reconnect the connector S70.
(4) Make a turn of the fan motor with a hand, and make sure the pulse (0-15 V) appears twice at pins 1 and 4.

If the fuse is blown out, the outdoor-unit fan may also be in trouble. Check the fan too.
If the voltage in Step (2) is not applied, it means the PCB is defective. Replace the PCB.
If the pulse in Step (4) is not available, it means the Hall IC is defective. Replace the DC fan motor.If there are both the voltage (2) and the pulse (4), replace the PCB.



∗ Propeller fan motor : S70

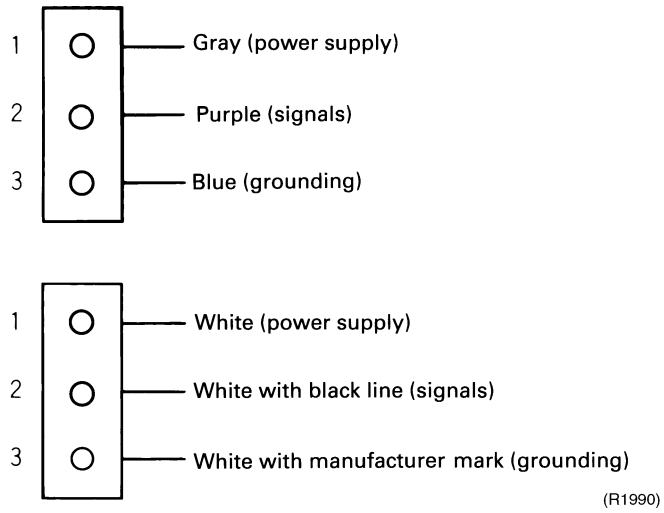
6.1.15 Hall IC Check

Check No.16

1. Check the connector connection.
2. With the power ON, operation OFF, and the connector connected, check the following.
   ∗Output voltage of about 5 V between pins 1 and 3.
   ∗Generation of 3 pulses between pins 2 and 3 when the fan motor is operating.

Failure of (1) → faulty PCB → Replace the PCB.
Failure of (2) → faulty Hall IC → Replace the fan motor.
Both (1) and (2) result → Replace the PCB.

The connector has 3 pins, and there are two patterns of lead wire colors.



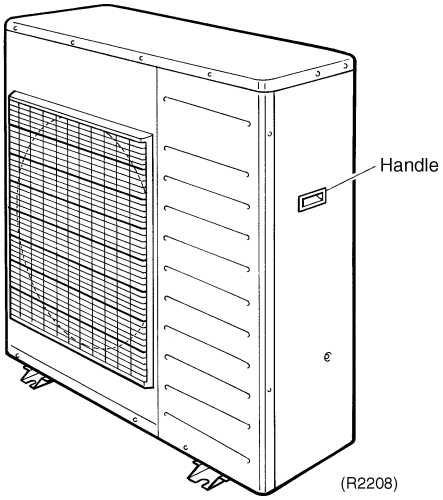
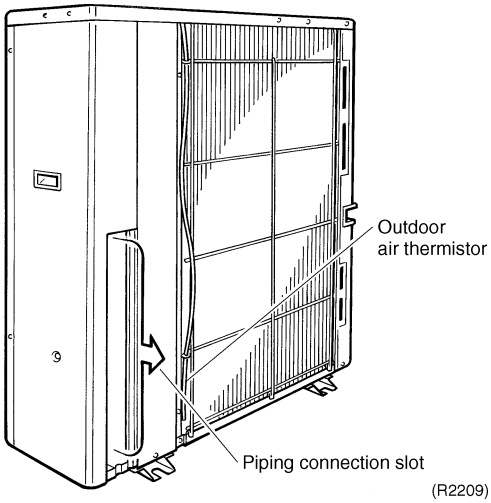
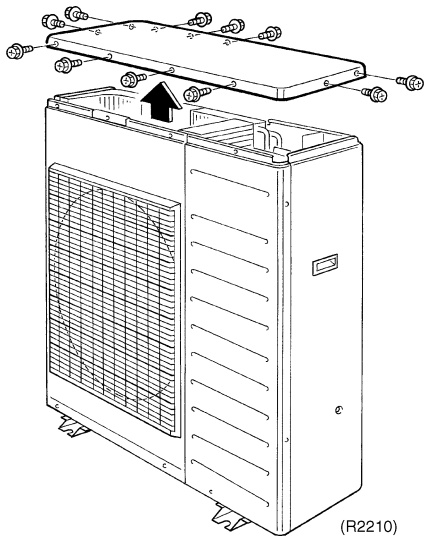
Part 7
Removal Procedure

1. Outdoor Unit (80 / 90 Class)

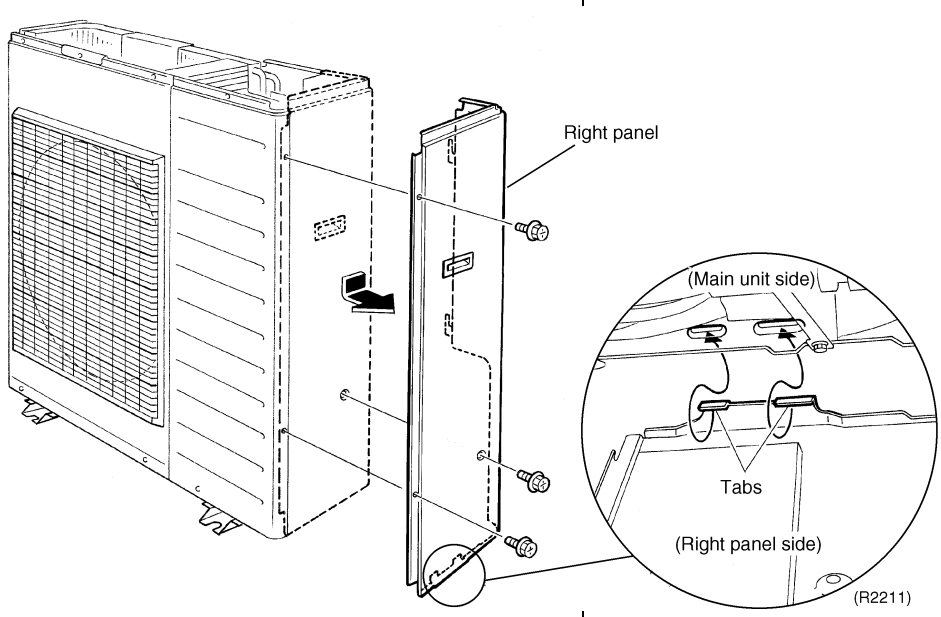
1.1 Removal of Outer Panels

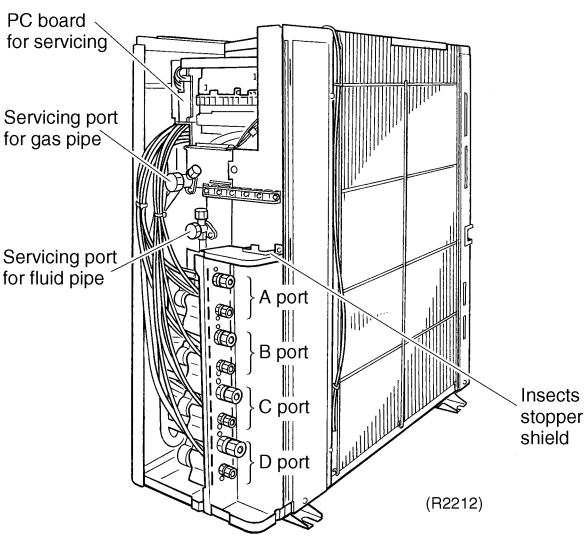
Procedure

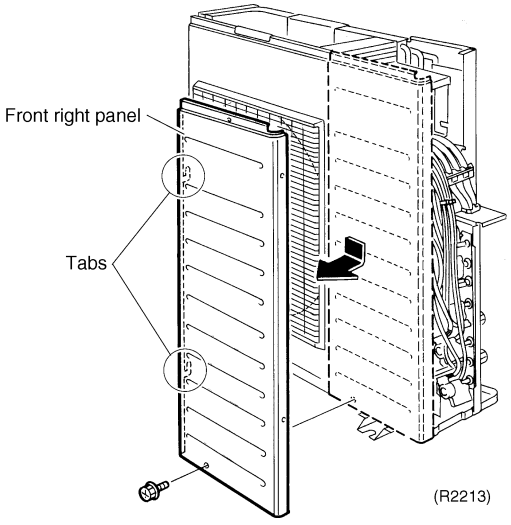
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

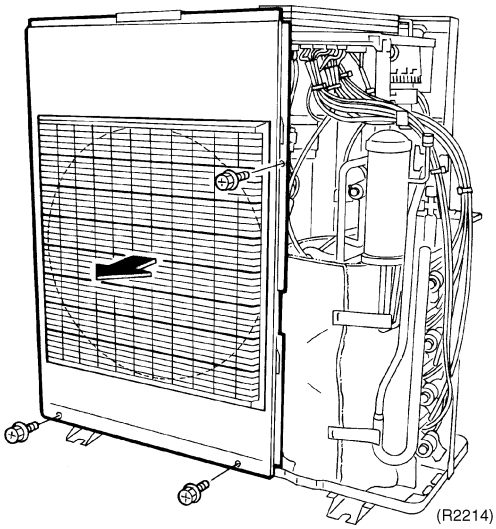
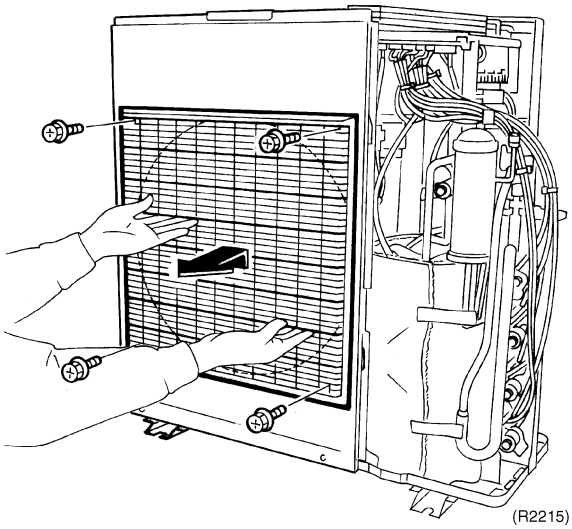
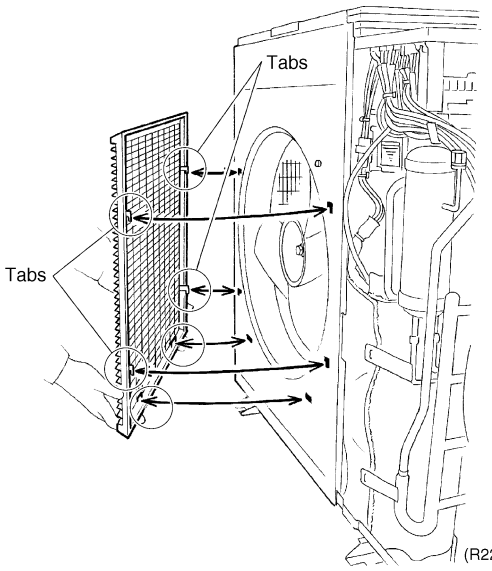
Step	Procedure		Points
1	External appearance.	 (R2208)	
		 (R2209)	■ Remove the piping in the backward direction.
2	Remove 11 screws of the top panel.	 (R2210)	

Step	Procedure	Points
3	Unscrew 3 screws of the right panel, slide it downwards and release the tabs to remove.	
4	The figure shows the view of piping connections.	
5	Unscrew 1 screw of the front right panel, slide it downwards and release the tabs to remove.	







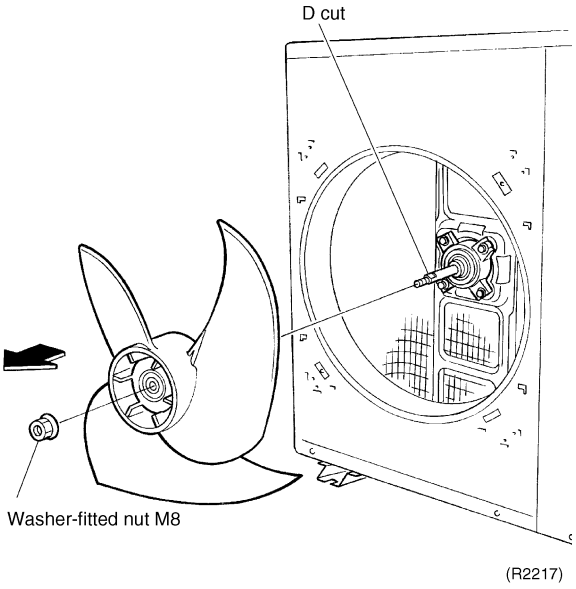
Step	Procedure		Points
6	Unscrew 3 screws of the front panel to remove.	 (R2214)	
7	Remove 4 screws of the discharge outlet grill.	 (R2215)	
8	Slide the discharge outlet grill upwards and release 6 tabs to remove.	 (R2216)	

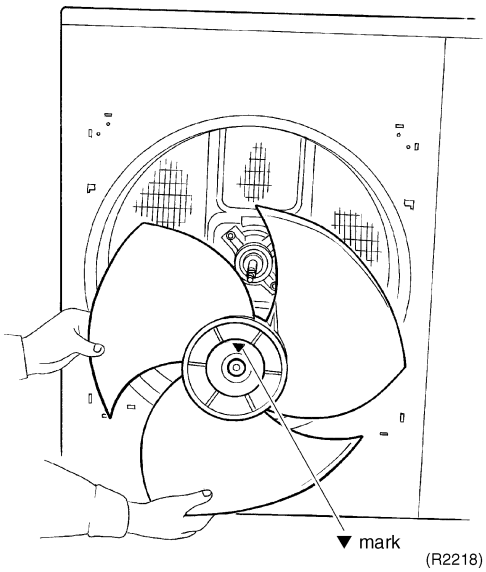
1.2 Removal of Propeller Fans

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
■ Remove the discharge outlet grill		
1	To take off propeller fan, remove the washer-fitted nut M8.	
2	Remove the propeller fan.	■ For reassembling, align ▼ mark of propeller fan with D-cut section of motor shaft. ■ Mount the propeller fan while positioning ▼ mark to the top.

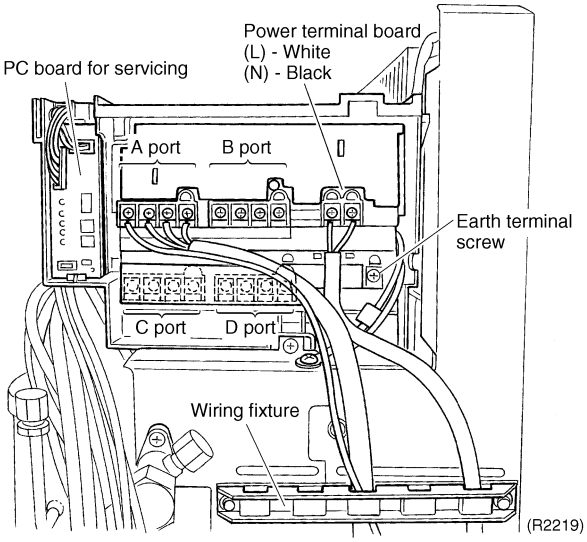
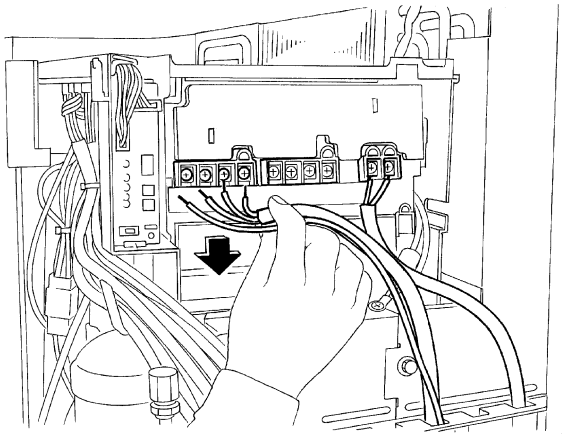
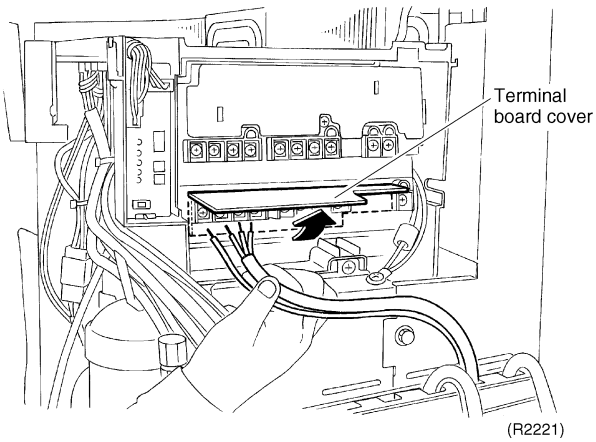


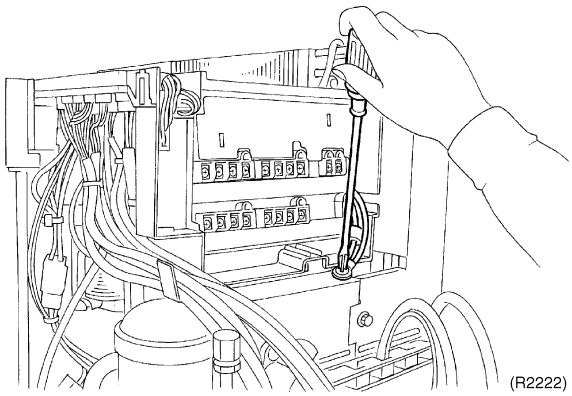
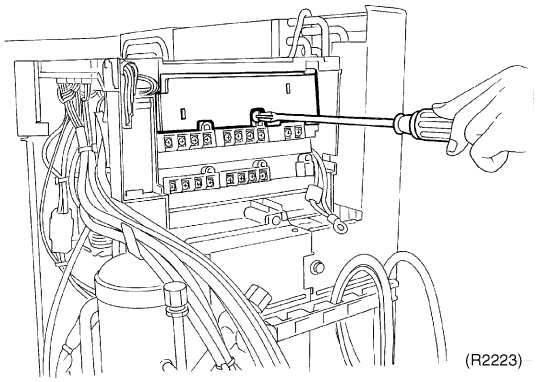
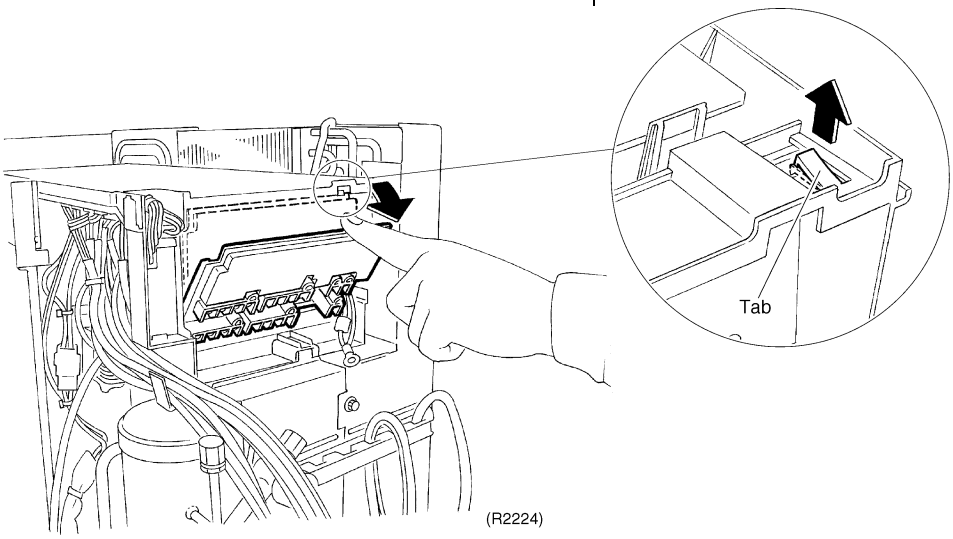
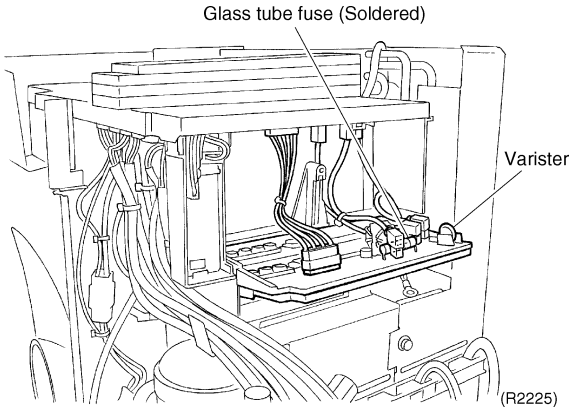


1.3 Removal of Electrical Box

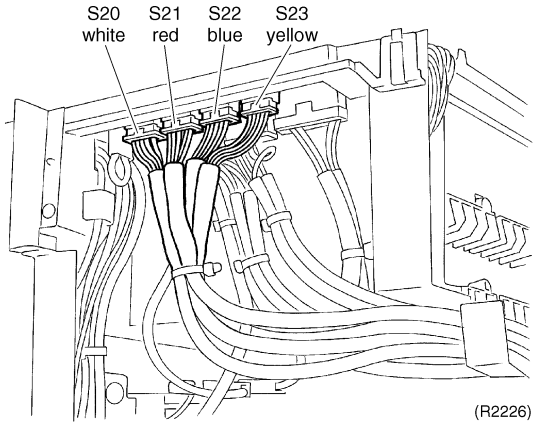
Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

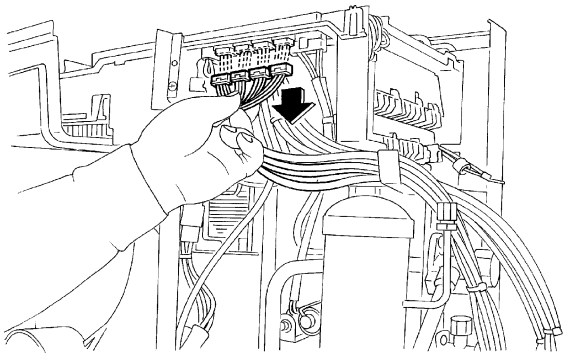
Step	Procedure	Points
■ Remove the outer panels such as top and front panels.		■ Match the colors of the tie wires to A, B, C and D ports as follows. (1) - Black Power (2) - White Power (3) - Red Transmission ■ Wires are fixed to the terminal board with screws.
1 The figure shows the right side view.		
1. Remove the tie wire.		
1 Loosen the terminal board screws, and remove the wires at A and B ports.		
2 Open the terminal board cover, and remove the wires at C and D ports.		■ When reassembling, reconnect the wires to C and D ports.

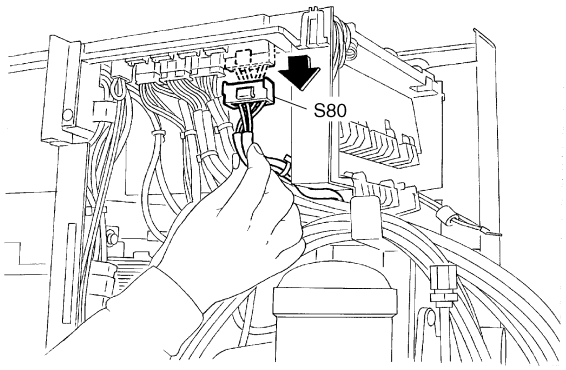
Step	Procedure	Points
3	Remove the earth wire.  (R2222)	
4	Remove 1 screw of the terminal board.  (R2223)	
5	Release the tab on the top right of the terminal board.  (R2224)	
6	Pull out the terminal board and open it.  (R2225)	■ Glass tube fuse and varistor cannot be replaced individually because lead-free soldering is provided.

Step	Procedure	Points
2. Remove each wire harness		
1	Disconnect 4 connectors of the electronic expansion valve lead wires.	
2	Remove the four way valve connector S80.	
3	Remove the connector S93 for liquid pipe thermistor.	

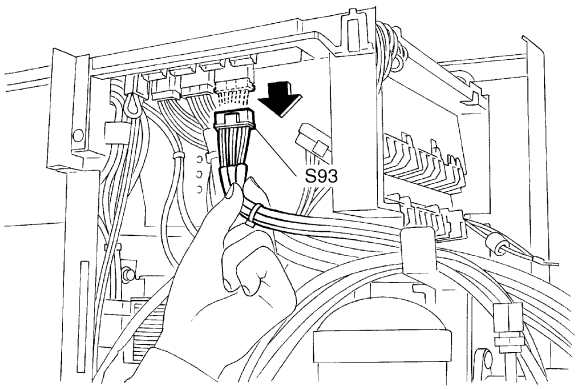


(R2226)


(R2227)



(R2228)

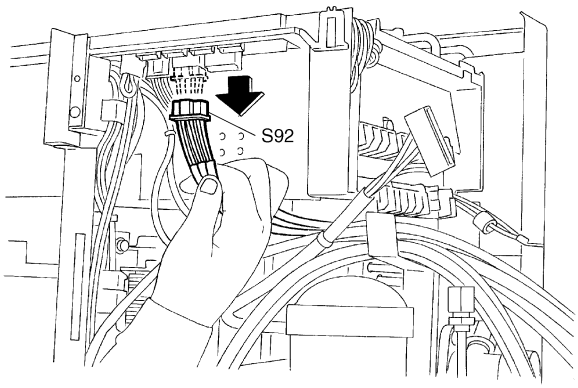


(R2229)

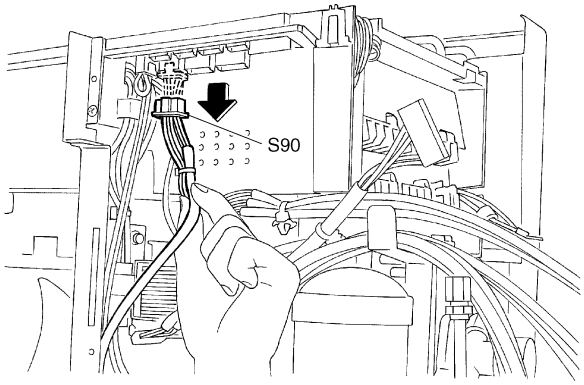
Connector	Electronic expansion valve No.	Harness length
S20 (White)	EVA	630
S21 (Red)	EVB	730
S22 (Blue)	EVC	825
S23 (Yellow)	EVD	940

- When reconnecting, make sure to match the wire to the correct connector.

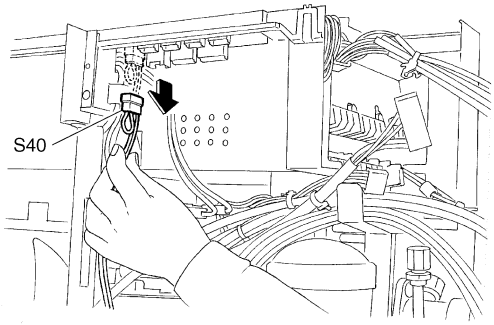
Step	Procedure	Points
4	Remove the connector S92 for gas pipe thermistor.	
5	Remove the connector S90 for thermistor. ■ Outdoor air thermistor (Blue) ■ Discharge pipe thermistor (Black) ■ Heat exchanger thermistor (Gray)	
6	Remove the overload relay connector S40.	
7	Remove the reactor lead wire.	



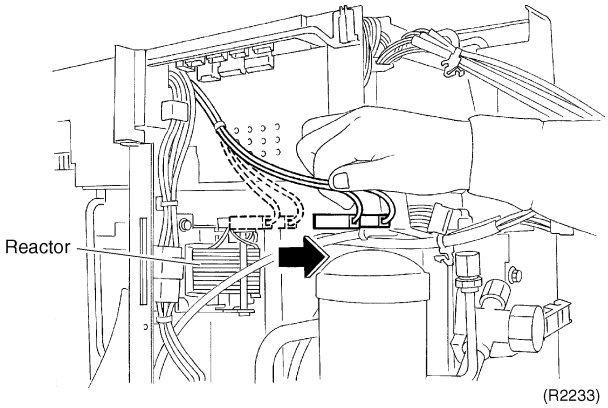
(R2230)



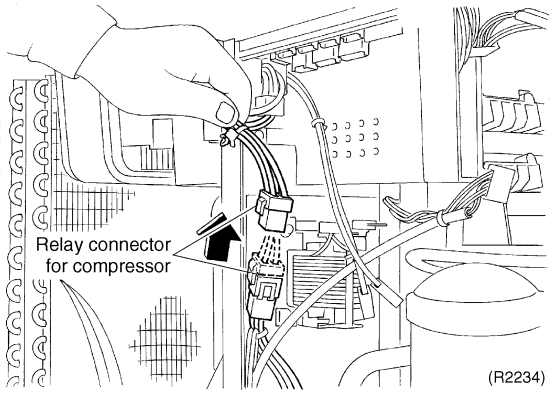
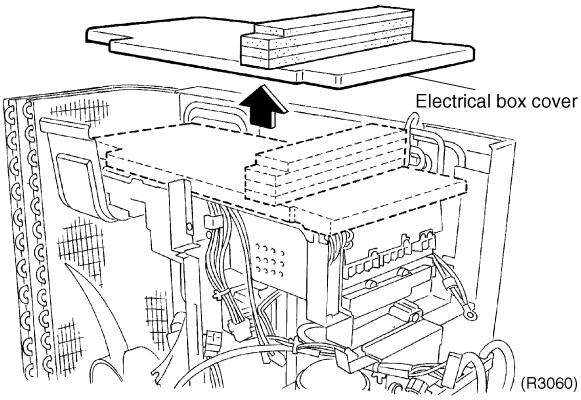
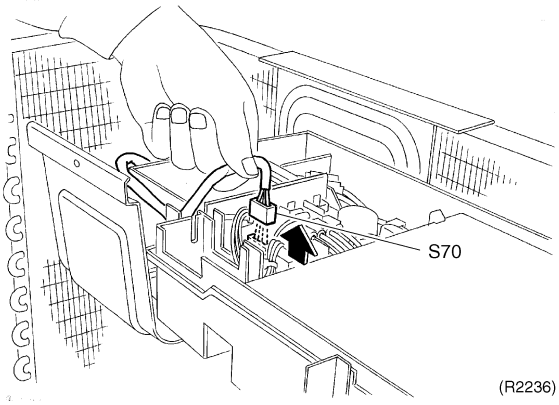
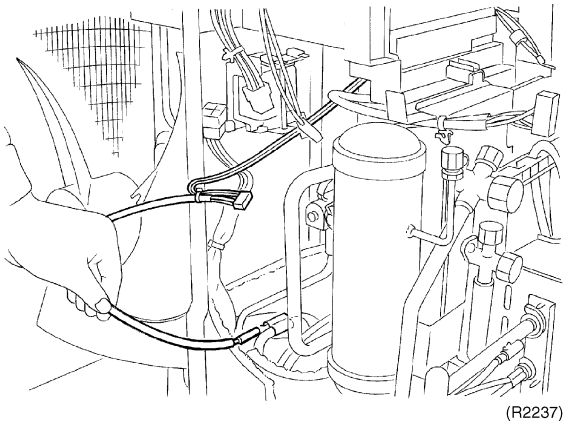
(R2231)

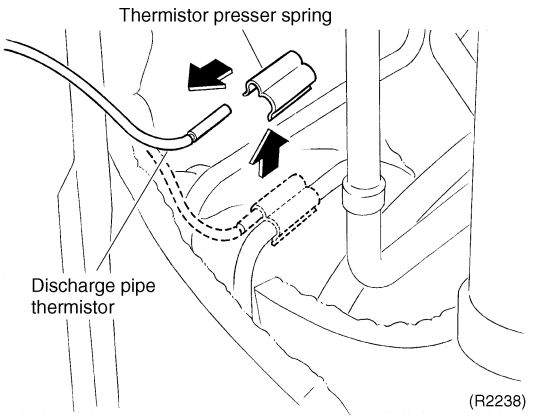


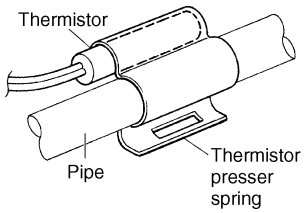
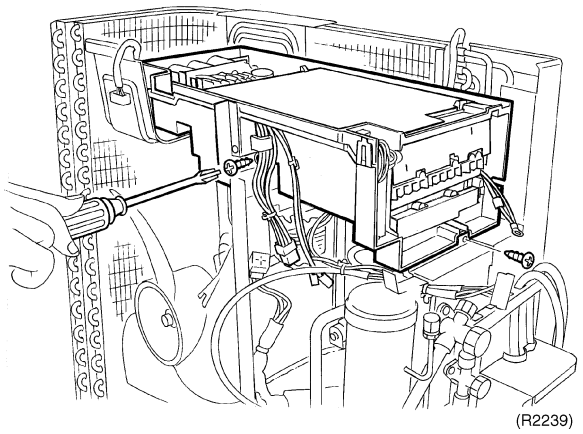
(R2232)

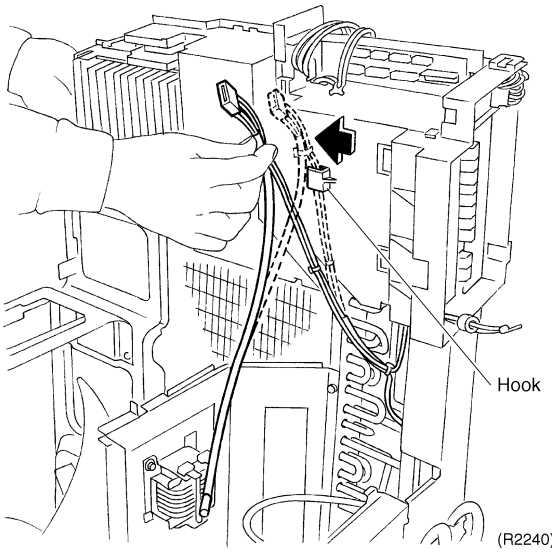


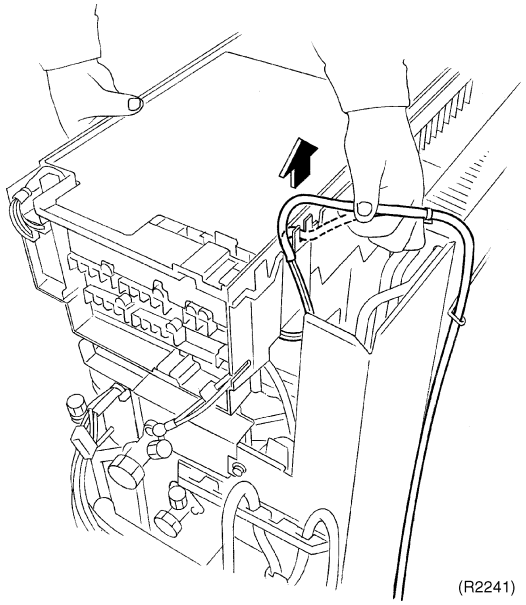
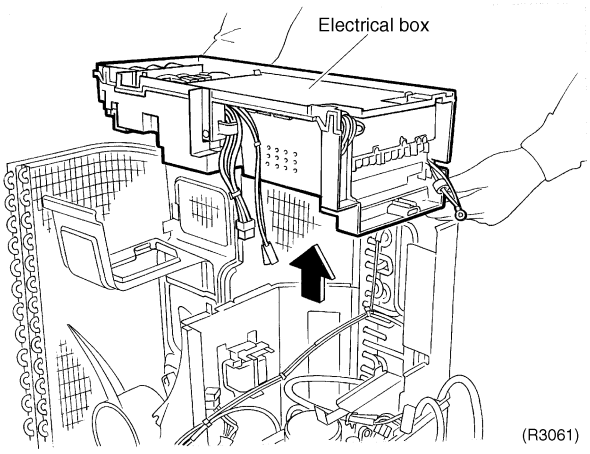
(R2233)

Step	Procedure		Points
8	Remove the relay connector for compressor.		
9	Remove the electrical box cover.		
10	Disconnect the fan motor connector.		
11	Remove the discharge pipe thermistor.		

<table>
<tr><th>Step</th><th colspan="2">Procedure</th><th>Points</th></tr>
<tr><td>12</td><td>Take off the thermistor presser spring, and remove the thermistor.</td><td> 
</td><td>■ Place the thermistor so that its end comes up to the end of the presser spring.

■ Be careful not to lose the presser spring for the discharge pipe thermistor.
 
</td></tr>
<tr><td colspan="2">3. Removing the electrical box</td><td rowspan="3"></td><td rowspan="3"></td></tr>
<tr><td>1</td><td>Remove 2 screws of the electrical box.</td></tr>
<tr><td>2</td><td>Turn the electrical box up side down halfway, and disconnect the thermistor lead wire from the hook.</td></tr>
<tr><td colspan="2"></td><td colspan="2"> 


</td></tr>
</table>

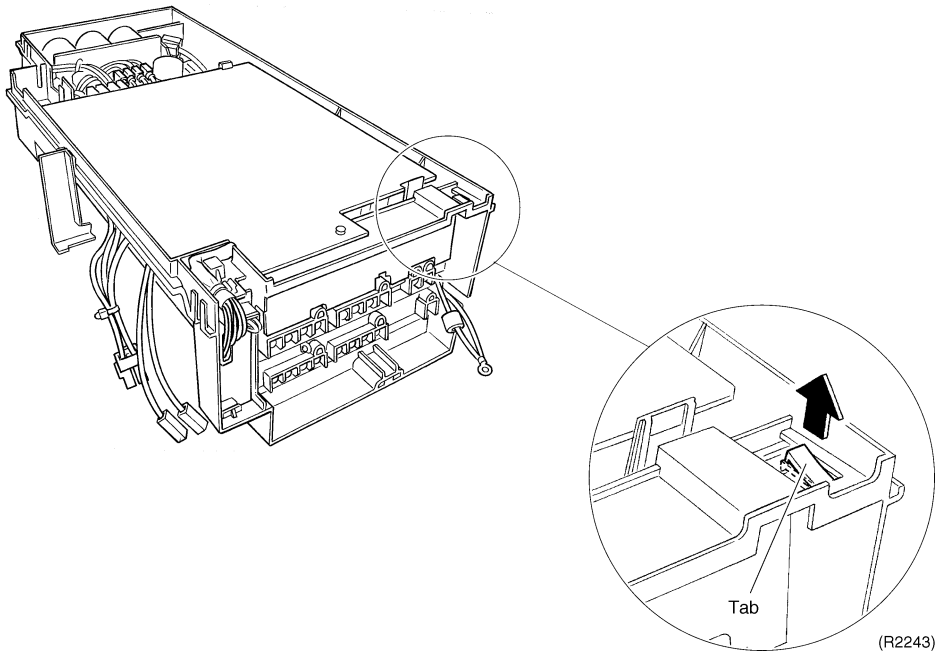
Step	Procedure		Points
3	Remove the outdoor air thermistor lead wire from the groove.		
4	Remove each wire harness, and dismount the electrical box by lifting it.		

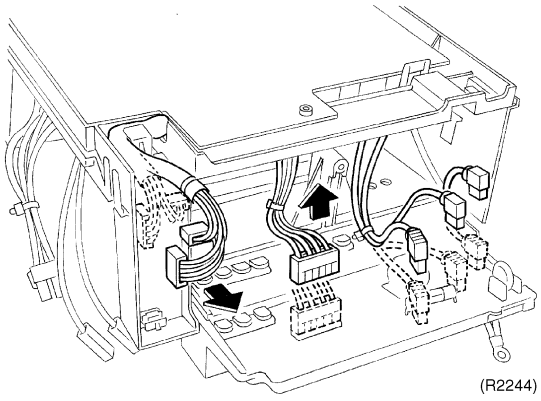
1.4 Removal of PCB

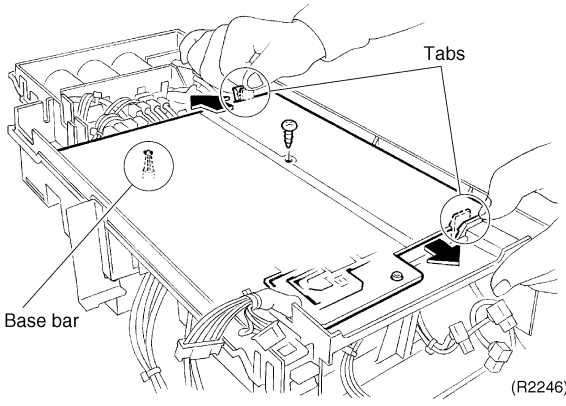
Procedure

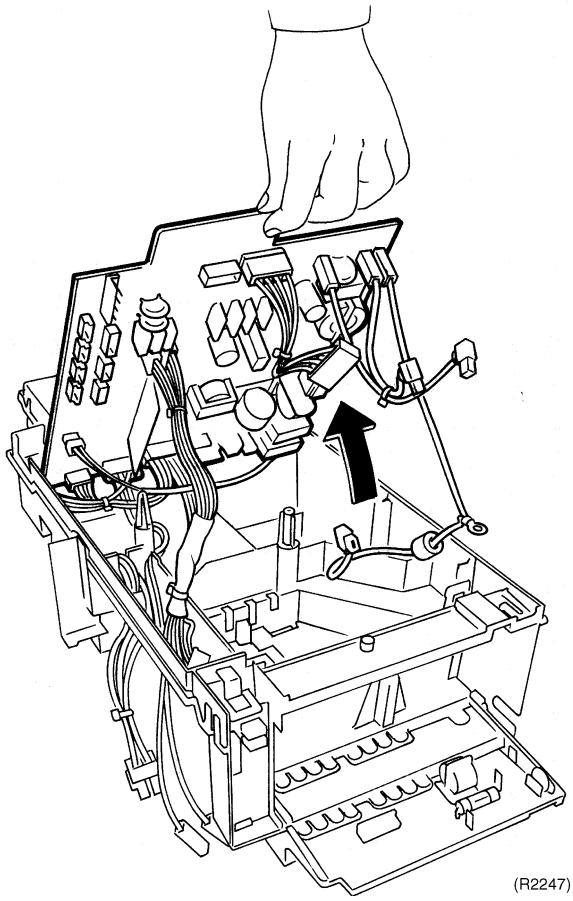
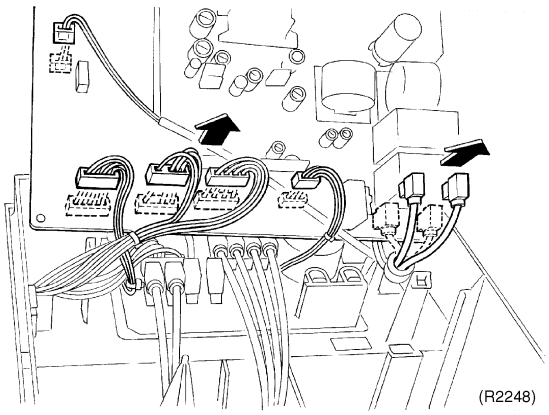
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

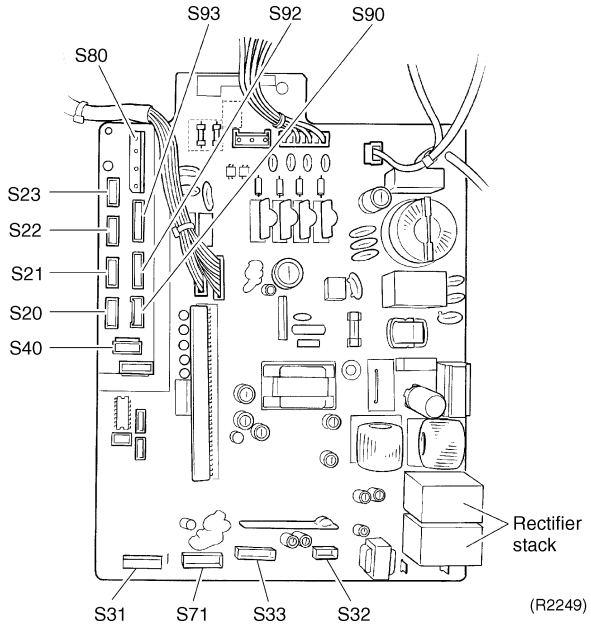
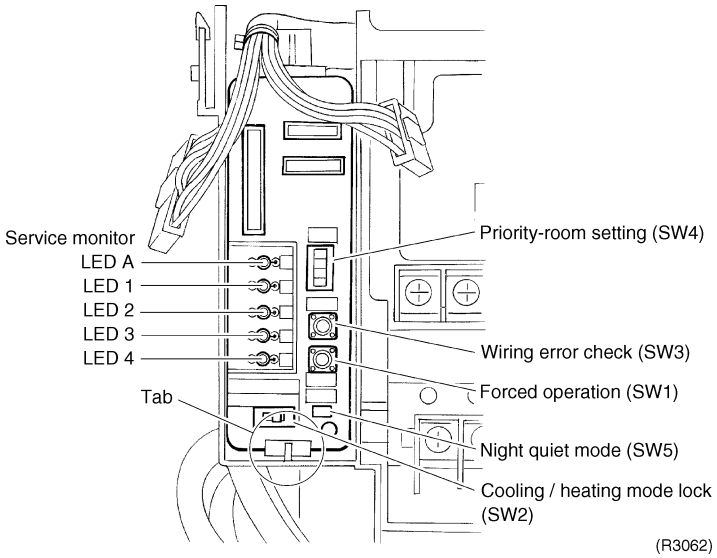
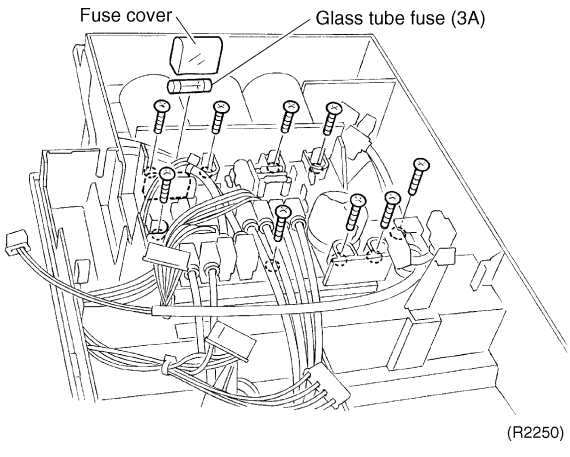
Step	Procedure	Points
1. Removing the controller PCB		
1	Release the tab of the electrical box, and open the terminal board.	
2	Disconnect each connector of the terminal board.	
3	Unscrew 1 screw and release two tabs to remove the PCB	







Step	Procedure		Points
4	Lift the PCB at the terminal board side.	 (R2247)	
5	Disconnect each wire harness connector linked to the inverter PCB.	 (R2248)	

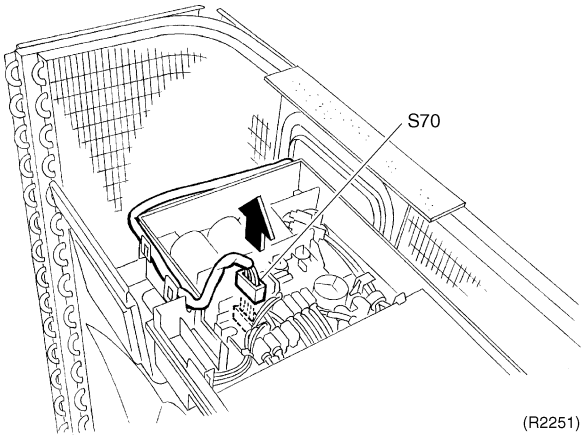
<table>
<tr><th>Step</th><th colspan="2">Procedure</th><th>Points</th></tr>
<tr><td>6</td><td>The figure shows the controller PCB.</td><td> 
</td><td>S20: Electronic expansion valve coil A port
S21: Electronic expansion valve coil B port
S22: Electronic expansion valve coil C port
S23: Electronic expansion valve coil D port
S31: To CN14 (Pin 9)
S32: To CN11 (Pin 5)
S33: To S34 (Pin 10)
S40: Overload relay
S71: To S72 (Pin 8)
S80: Four way valve coil
S90: Thermistor (Outdoor air, heat exchanger, and discharge pipe)
S92: Gas pipe thermistor
S93: Liquid pipe thermistor</td></tr>
<tr><td colspan="2">2. Removing the service monitor PCB</td><td rowspan="2"> 
</td><td rowspan="2"></td></tr>
<tr><td>1</td><td>Remove the service monitor PCB by releasing its tab.</td></tr>
<tr><td colspan="2">3. Removing the inverter PCB</td><td rowspan="2"> 
</td><td rowspan="2"></td></tr>
<tr><td>1</td><td>Remove the 9 screws of the inverter PCB.</td></tr>
</table>

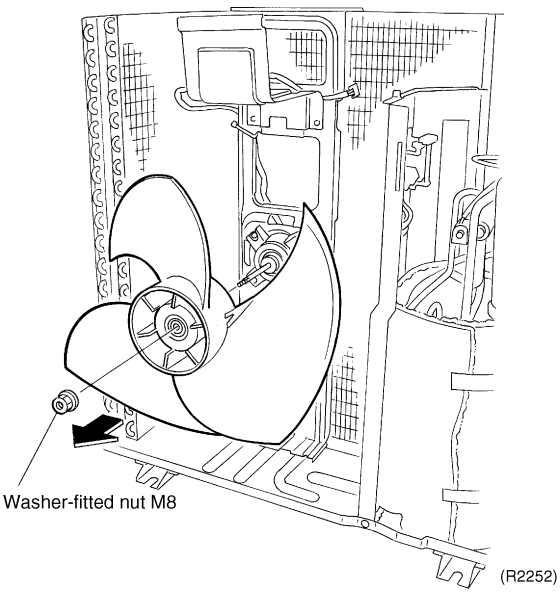
1.5 Removal of Fan Motor

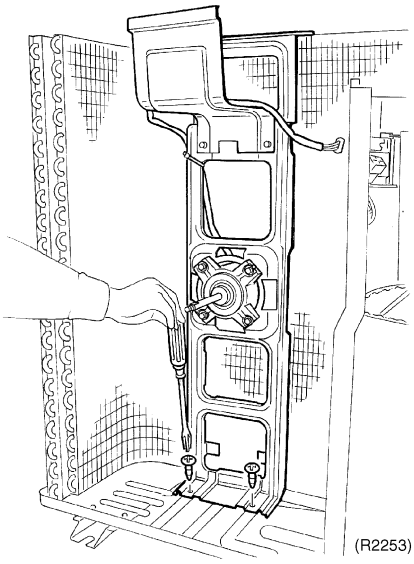
Procedure

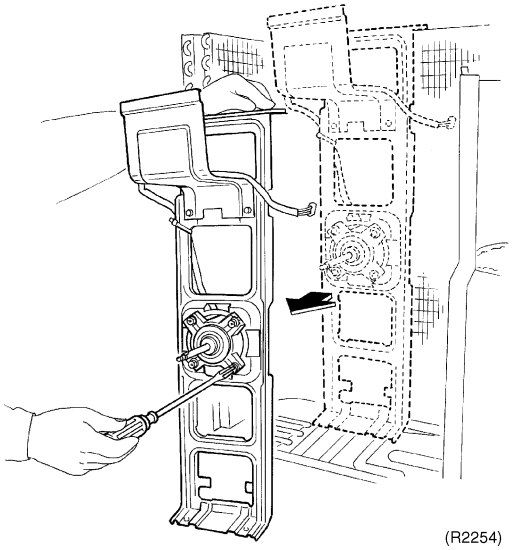
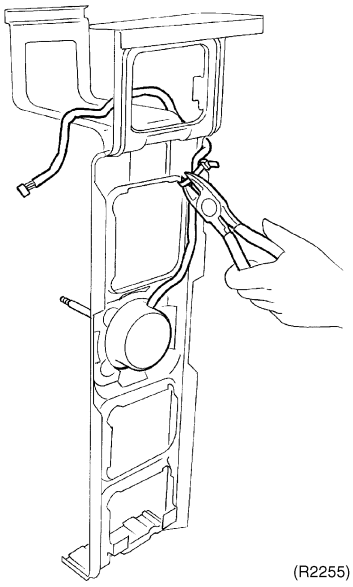
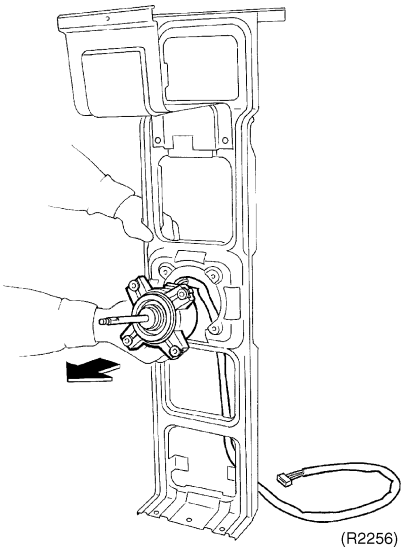
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
■ Remove the outer panels.		
1	Remove the fan motor lead wire connector S70.	
2	Remove the propeller fans.	■ For reassembling, align ▼ mark of propeller fan with D-cut section of motor shaft. ■ Mount the fan motor so as to position ● mark on the top.
3	Remove 2 screws of the fan motor mount.	





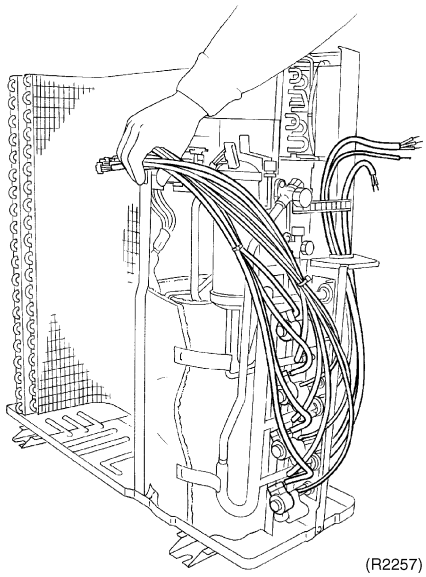
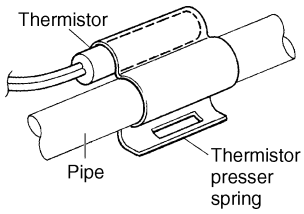
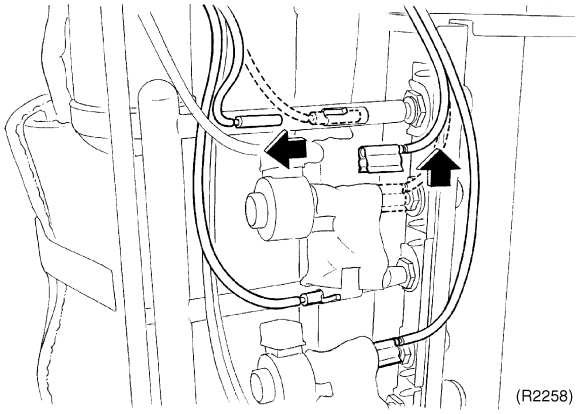
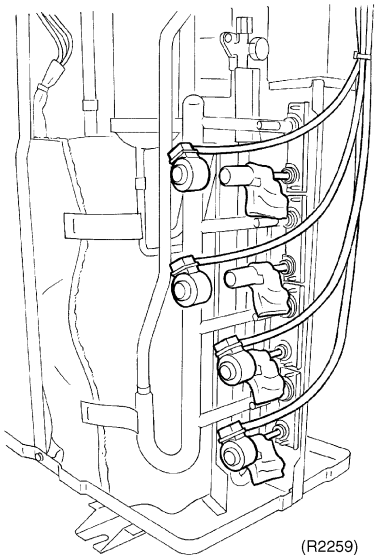


Step	Procedure		Points
4	Remove 4 screws of the fan motor.	 (R2254)	
5	Cut the wrapper fixing the lead wire.	 (R2255)	■ When reassembling, fix the lead wire to avoid contact with the propeller fan.
6	Remove the fan motor.	 (R2256)	

1.6 Removal of Electronic Expansion Valve and Thermistor

Procedure

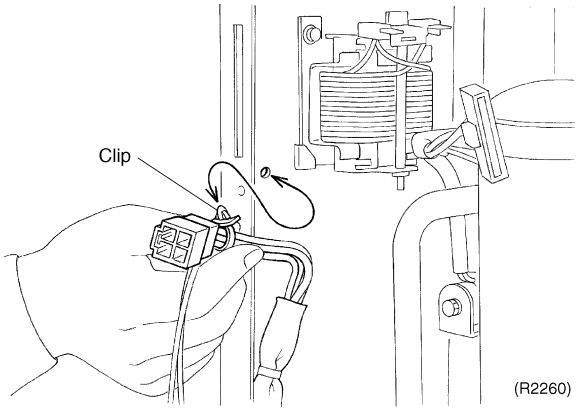
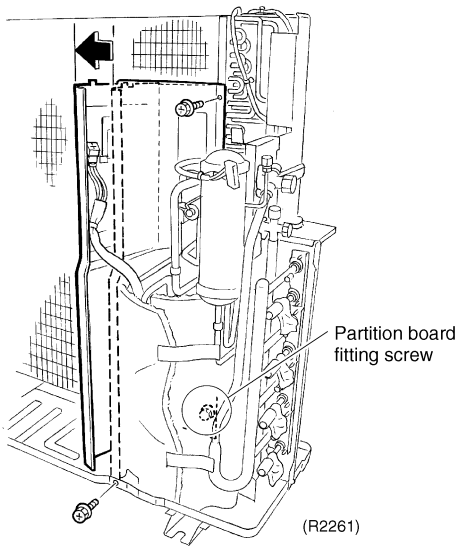
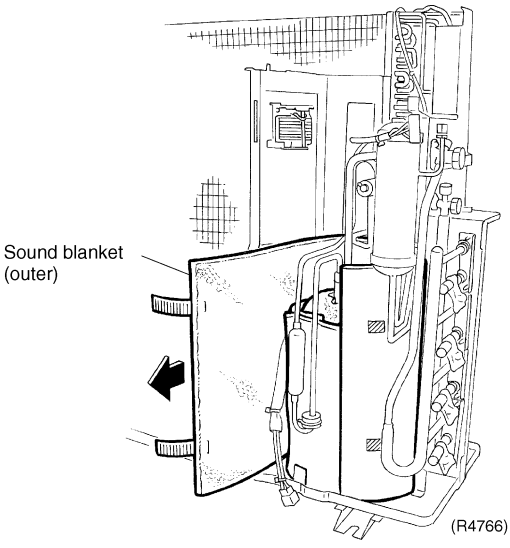
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

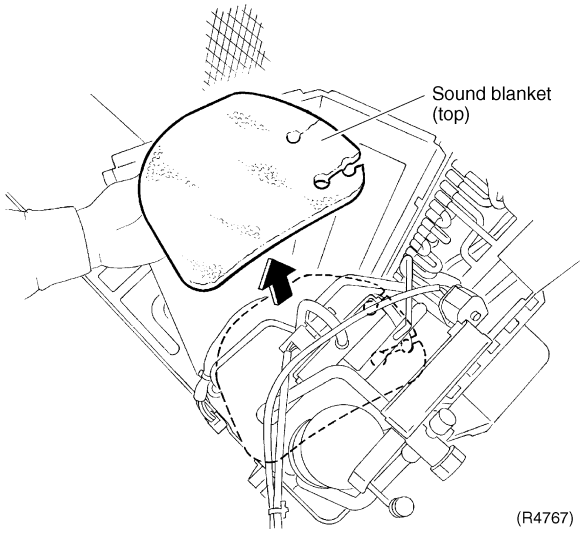
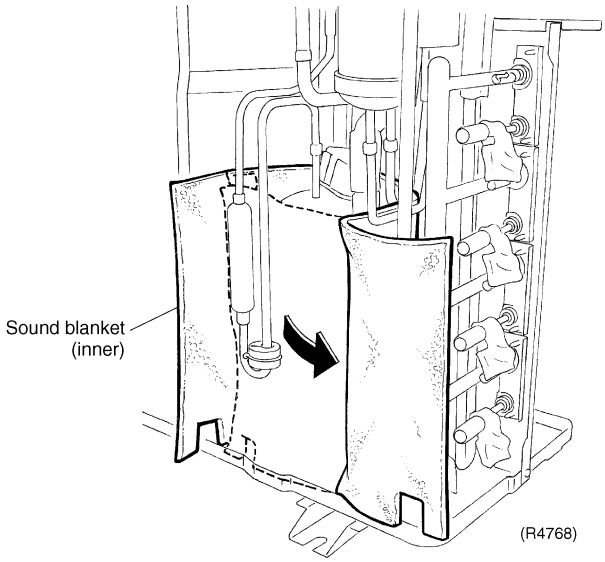
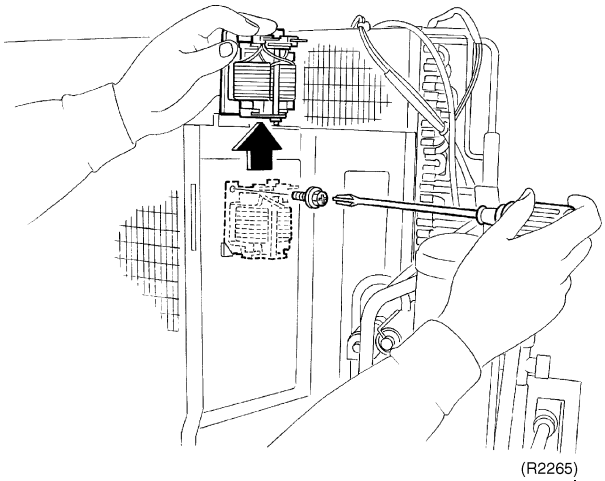
Step	Procedure		Points
1	Remove each wire harness.	 (R2257)	■ Place the thermistor so that its end comes up to the end of the presser spring. ■ Be careful not to lose the presser spring for the discharge pipe thermistor. 
2	Take off the putty, and remove each thermistor.	 (R2258)	S90: ■ Outdoor air thermistor (Blue) ■ Heat exchanger thermistor (Gray) ■ Discharge pipe thermistor (Black) S92: Gas pipe thermistor ■ Room A (Black) ■ Room B (Gray) ■ Room C (Brown) ■ Room D (Red) S93: Liquid pipe thermistor ■ Room A (Black) ■ Room B (Gray) ■ Room C (Yellow) ■ Room D (Blue)
3	Remove the electronic expansion valve coil.	 (R2259)	

1.7 Removal of Sound Blanket and Reactor

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure		Points
1	Release the clip fixing the compressor lead wire.		
2	Remove 2 screws of the partition board, and move the board leftward.		■ The partition board is not removable as it is fixed with the fitting screw in the rear bottom.
3	Remove the sound blanket (outer).		■ Carefully remove the sound blanket, which is easily torn in the piping section.

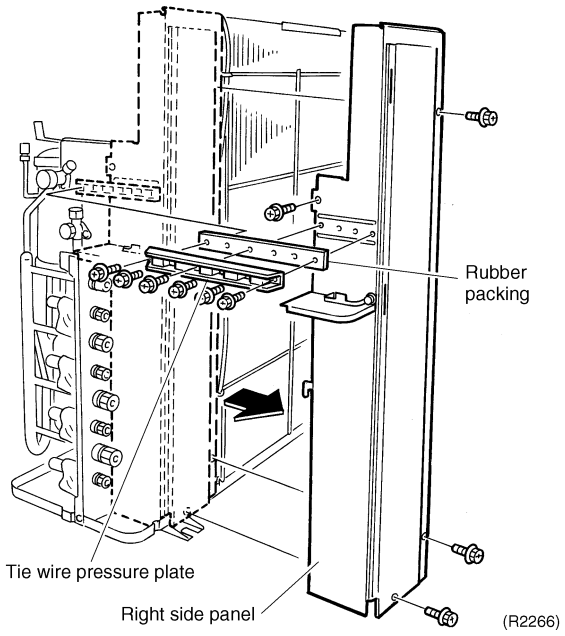
Step	Procedure		Points
4	Remove the sound blanket (top).		■ Carefully remove the sound blanket, which is easily torn in the piping section.
5	Remove the sound blanket (inner).		
6	Remove 1 screw of the reactor.		

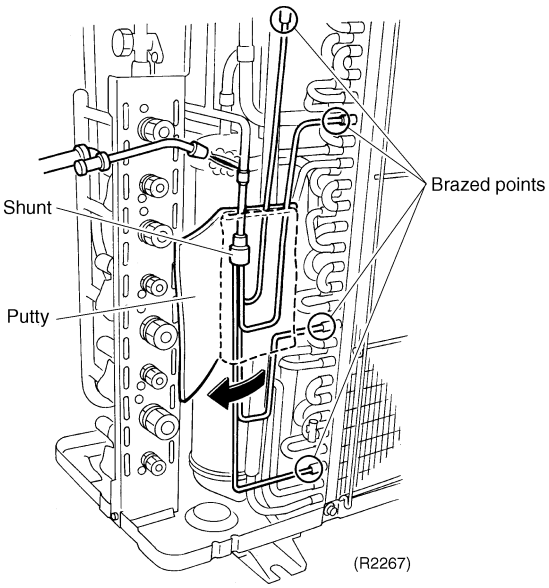
1.8 Removal of Shunt

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1	Remove 6 screws of the tie wire presser plate.	■ Fasten the rubber packing with double-faced adhesive tape when mounting.
2	Remove 4 screws of the right side panel.	
3	Remove the putty.	**Caution** Be careful not to get yourself burnt with the pipes and other parts that are heated by the gas welding rod.
■ Before taking this procedure, make sure there is no refrigerant gas left in the refrigerant pipes.		**Warning** If refrigerant gas leaks during the job, ventilate the room. (Bear in mind that if the refrigerant gas is exposed to open flames, noxious gas may be generated.)
4	Disconnect the 5 brazed points of the shunt.	

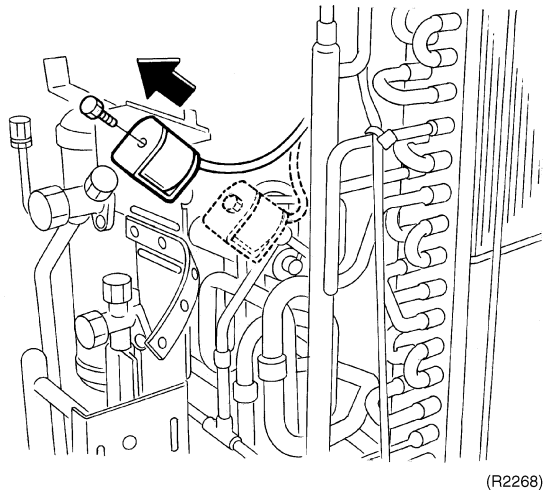
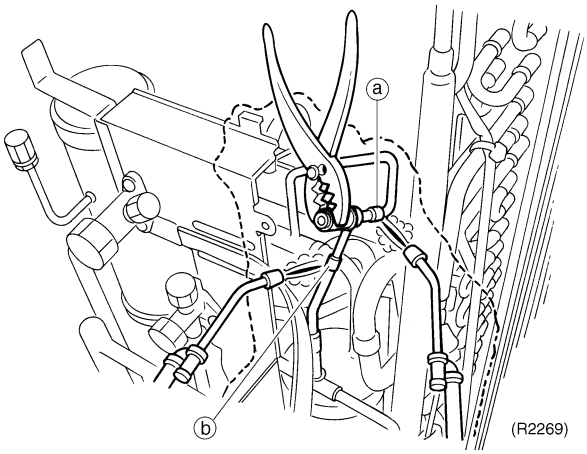
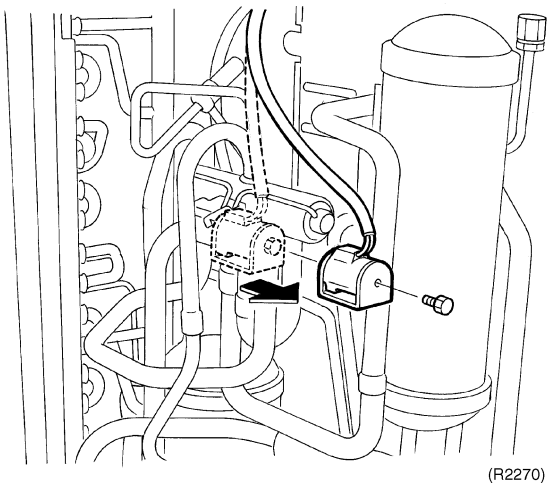


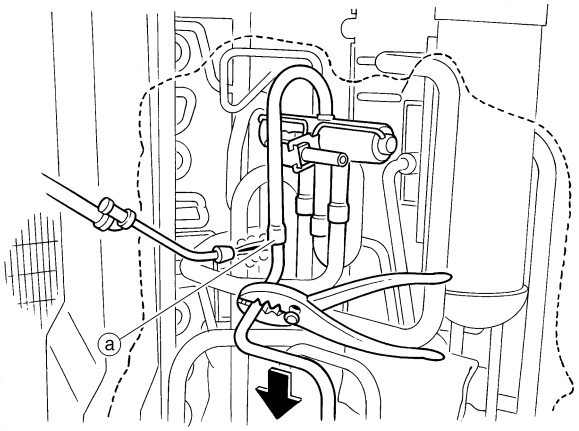
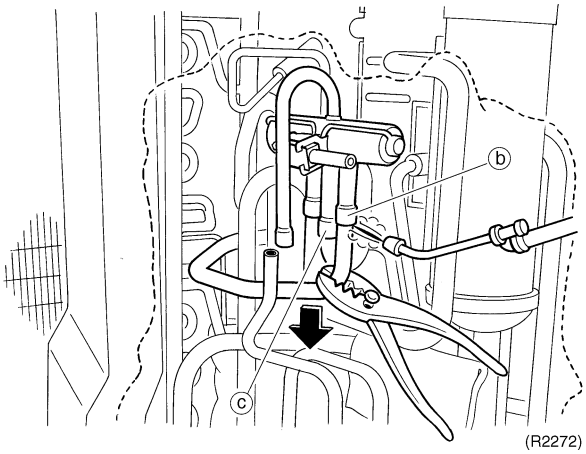
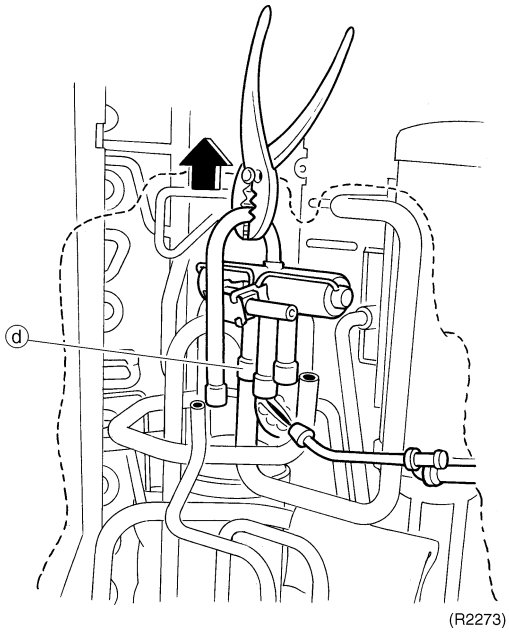


1.9 Removal of Solenoid Valve and Four Way Valve

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

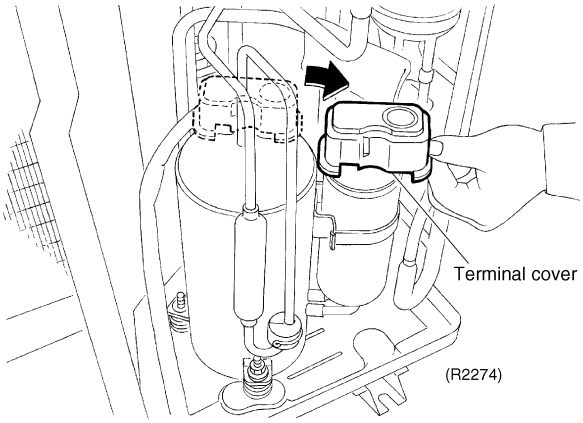
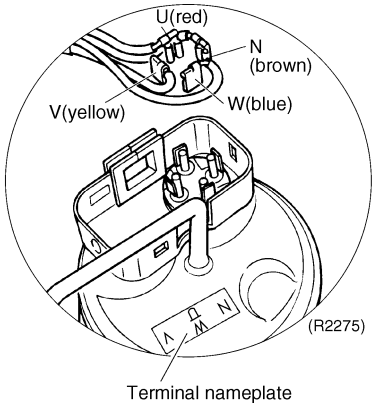
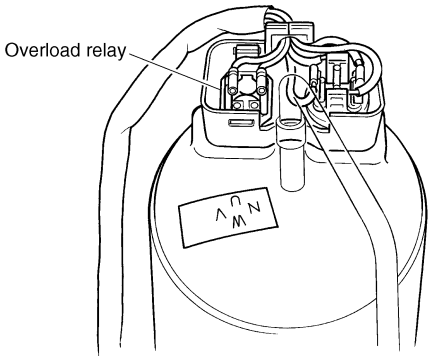
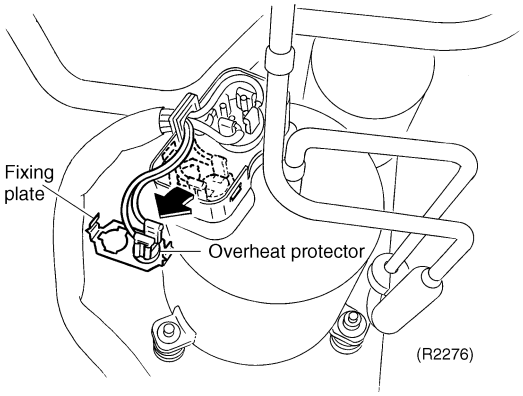
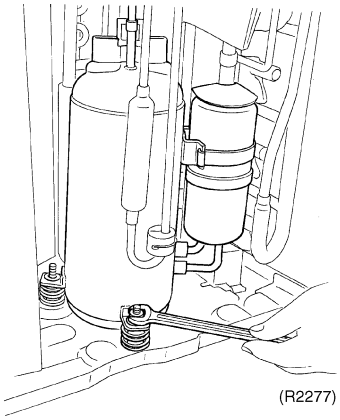
Step	Procedure	Points
■ Remove the outer panels.	 (R2268)	
1. Removing the solenoid valve		
1 Remove 1 screw of the solenoid valve coil.		
■ Before taking this procedure, make sure there is no refrigerant gas left in the refrigerant pipes.		**Caution** Be careful not to get yourself burnt with the pipes and other parts that are heated by the gas welding rod.
2 Disconnect the 2 brazed points (a) and (b) in this order.	 (R2269)	**Warning** If refrigerant gas leaks during the job, ventilate the room. (Bear in mind that if the refrigerant gas is exposed to open flames, noxious gas may be generated.)
2. Removing the four way valve		**Reassembling precautions** Wrap the solenoid valve body with wet cloth. Splash water over the cloth before it is dried to prevent the valve from being overheated.
1 Remove 1 screw of the four way valve coil.	 (R2270)	

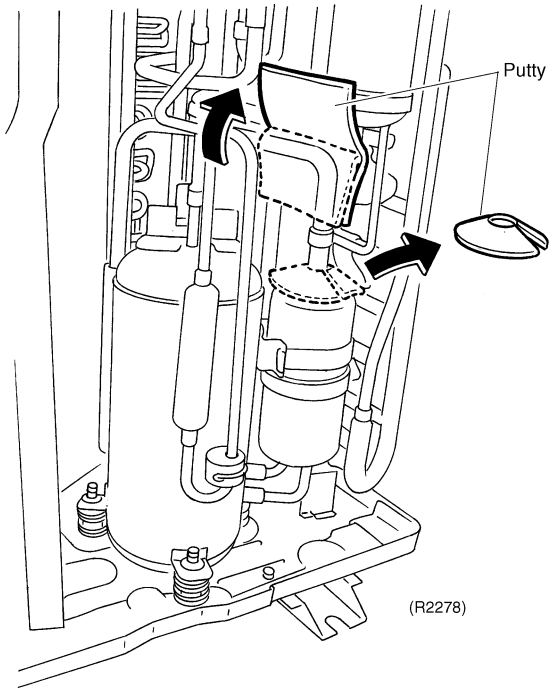
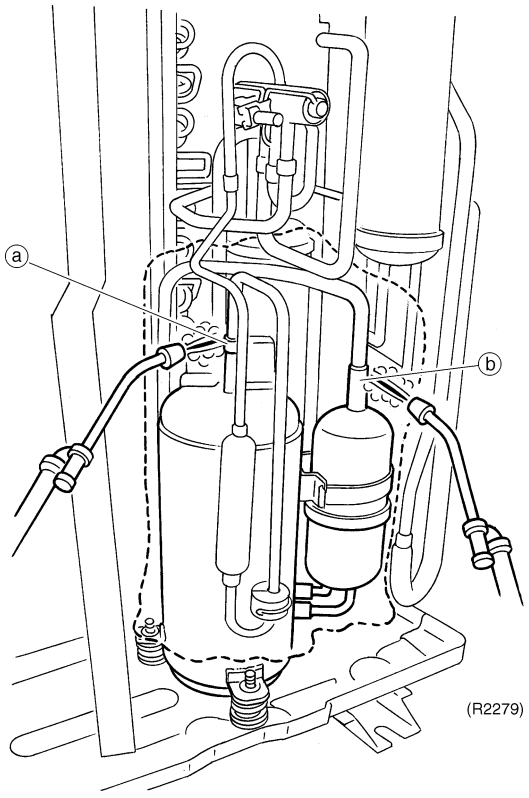
Step	Procedure	Points
■ Before taking this procedure, make sure there is no refrigerant gas left in the refrigerant pipes.	 (R2271)	**Reassembling precautions** 1. Use non-oxidizing brazing method. If nitrogen gas is not available, braze the parts speedily. 2. Avoid deterioration of the gaskets due to carbonization of oil inside the four way valve or thermal influence. For this purpose, wrap the four way valve with wet cloth. Splash water over the cloth against becoming too hot (keep it below 120°C). ■ In pulling the pipes, be careful not to over-tighten them with pliers. The pipes may get deformed.
2 Place welding protective sheet or iron plate around the four way valve to prevent the flames of a gas welding rod from affecting the valve. 3 Heat the 4 brazed points of the four way valve. Disconnect the point (a) first. 4 Disconnect the points (b) and (c).	 (R2272)	If the gas welding machine fails to remove the four way valve, take the steps below. 1. Disconnect the brazed pipe sections that are readily easy to separate and join together later. 2. With a small copper tube cutter, cut off the internal pipes to easily take out the four way valve. **Note:** Never use a hack saw. The sawdust may come into the circuit.
5 Disconnect the point (d).	 (R2273)	

1.10 Removal of Compressor

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure		Points
1	Remove the terminal cover.		
2	Remove the overload relay.		■ Be careful to avoid burning the compressor terminals or the nameplate.
3	Disconnect the flag shape terminal.		As precaution, keep the contents in memorandum.
4	There is one nut fixing the compressor. Remove the nut with a spanner.		

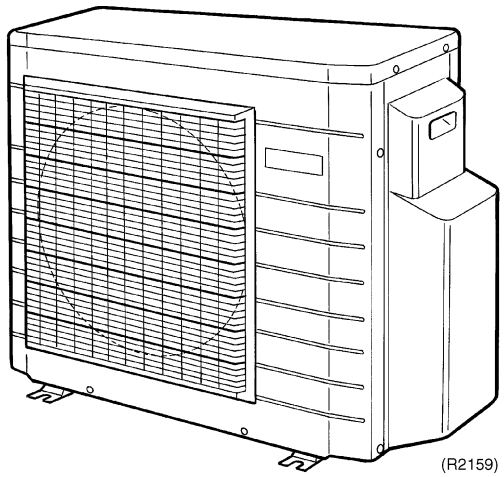
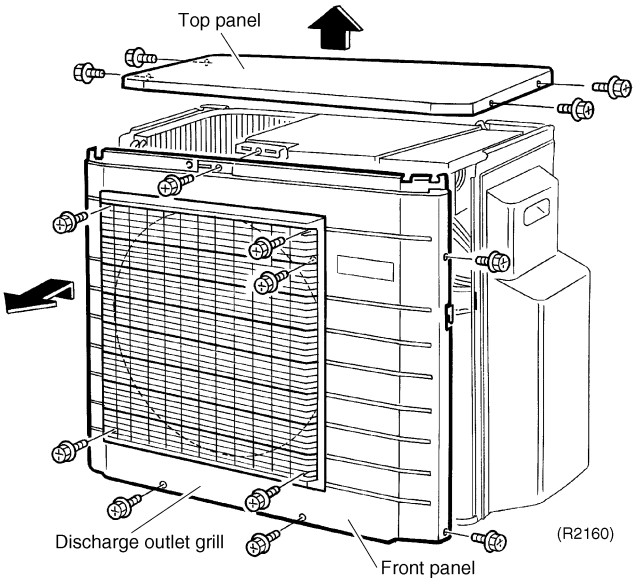
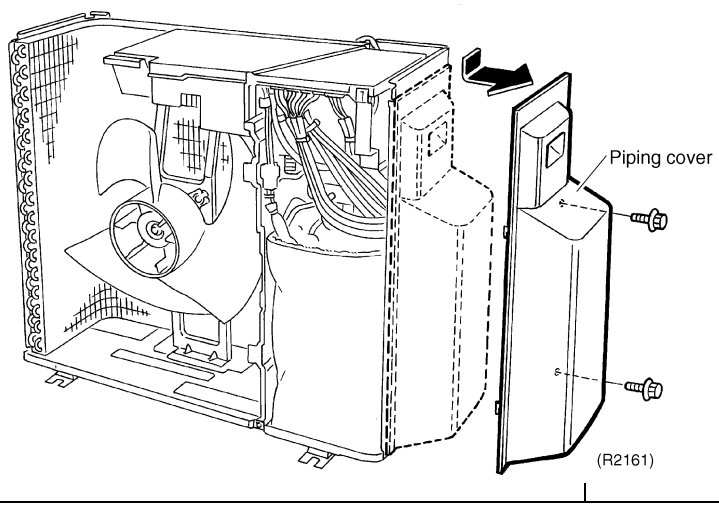
Step	Procedure	Points
■ Make sure there is no refrigerant gas left inside the refrigerant pipes before starting the job. ■ When heating up the brazed parts, make sure to carry out the N2 replacement.		**Warning** The compressor's refrigerating machine oil may catch fire. Have wet cloth at hand for quickly putting out the fire. **Warning** If refrigerant gas leaks during the job, ventilate the room. (Bear in mind that if the refrigerant gas is exposed to open flames, noxious gas may be generated.) **Caution** Be careful not to get yourself burnt with the pipes and other parts that are heated by the gas welding rod.
5 Remove the 2 sheets of putty.		
6 Disconnect the brazed part (a) at discharge side of the compressor. 7 Disconnect the brazed part (b) at suction side of the compressor.		

2. Outdoor Unit (50 / 52 / 58 / 68 / 75 Class)

2.1 Removal of Outer Panels

Procedure

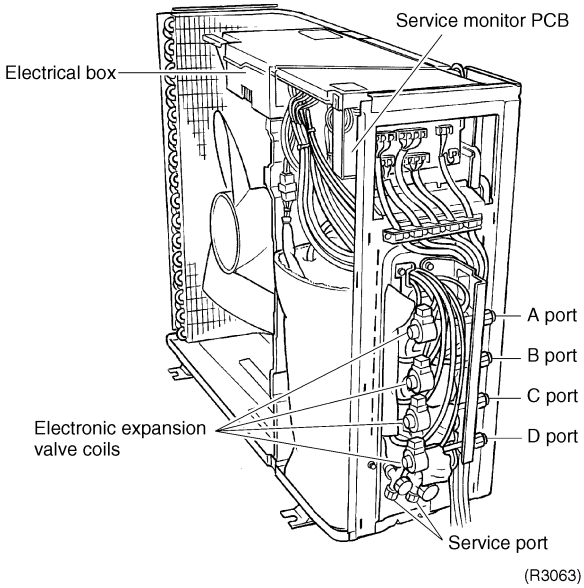
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

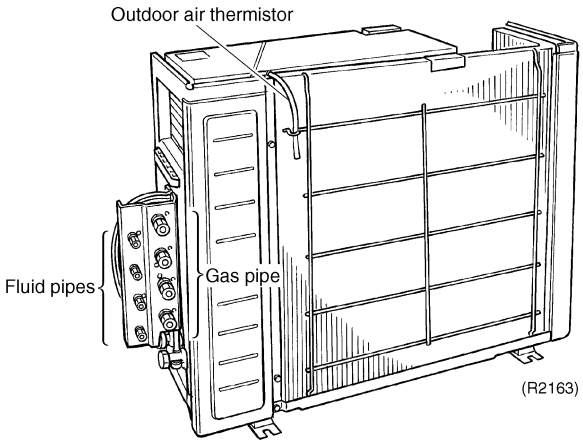
Step	Procedure	Points
1	External appearance.  (R2159)	
2	Remove 4 screws of the top panel and 6 screws of the front panel.	
3	Remove 4 screws of the discharge outlet grill. 	
4	Remove 2 screws of the piping cover. 	

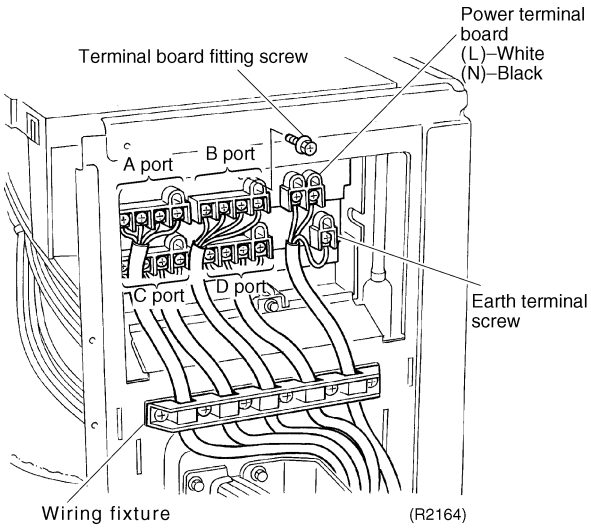
2.2 Removal of Electrical BOX

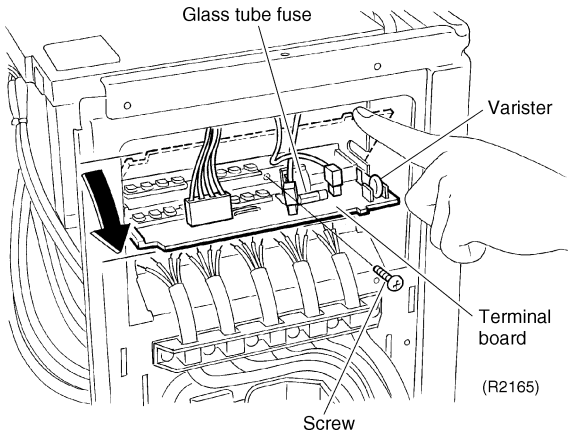
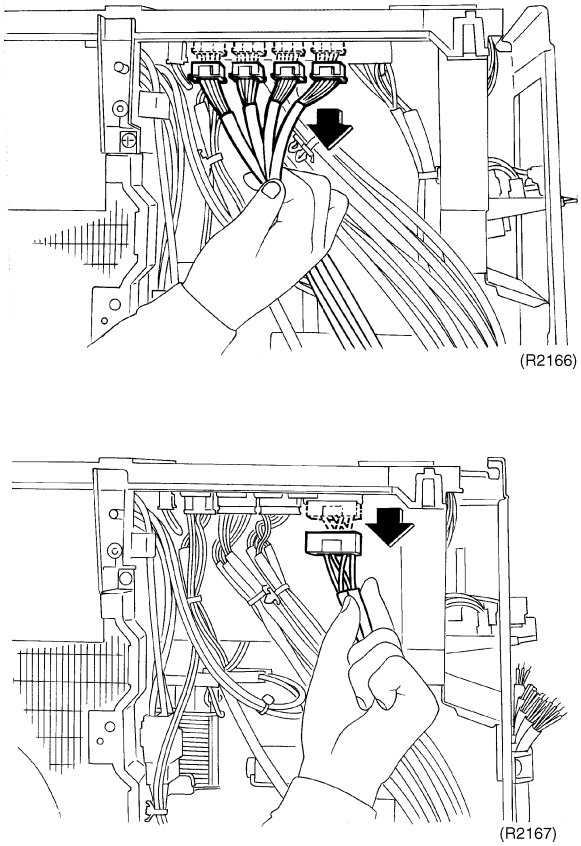
Procedure **Warning** **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1. Removing the tie wires		
1	The figure shows the tie pipe connections.	■ Remove the piping in the backward direction.
2	Remove the terminal board fitting screw.	■ Match the colours of the tie wires to A, B, C and D ports as follows. (1) - Black Power (2) - White Power (3) - Red Transmission ■ Wires are fixed to the terminal board with screws. ■ Terminal board is made of integral moulded resin.

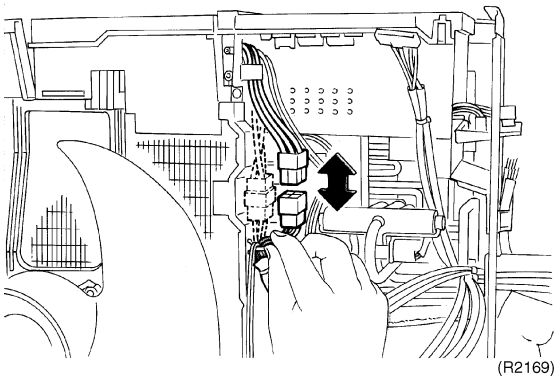
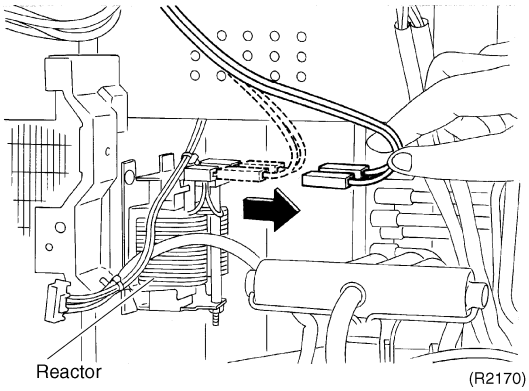
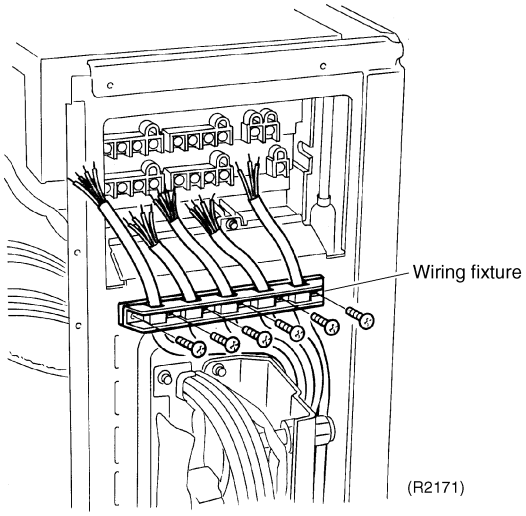
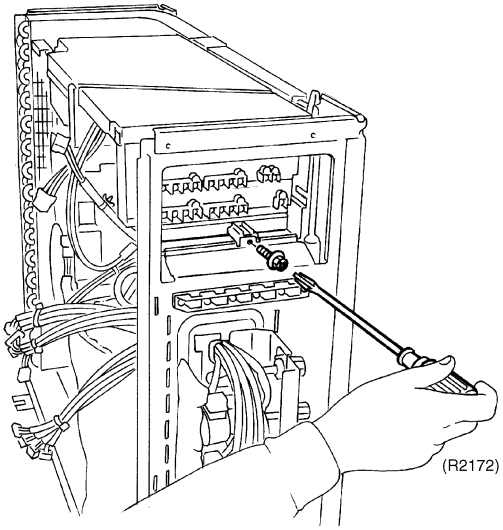


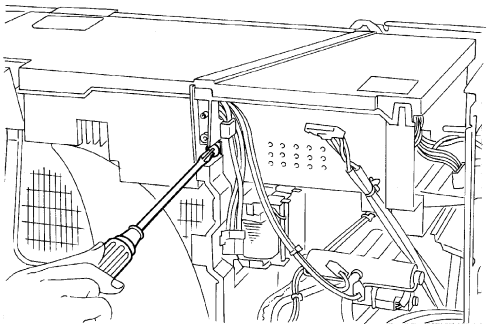
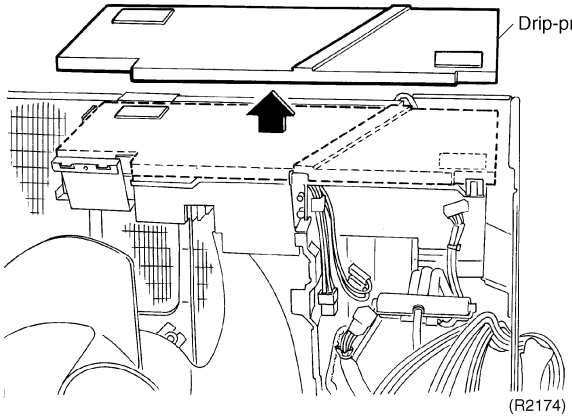
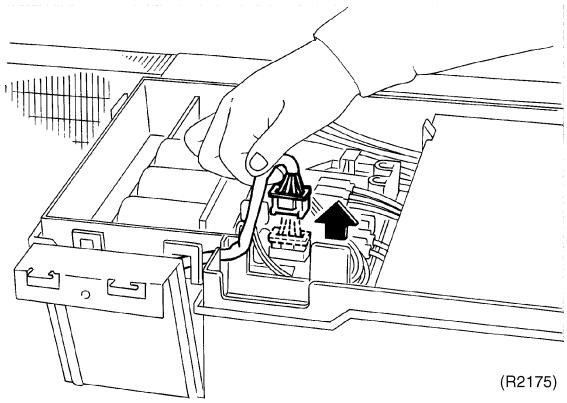
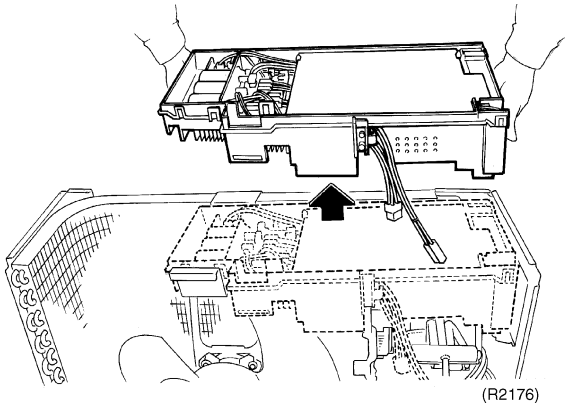




<table>
<tr><th>Step</th><th colspan="2">Procedure</th><th>Points</th></tr>
<tr><td>3</td><td>Pull out the terminal board to open.</td><td> 
</td><td>■ Glass tube fuse and varistor cannot be replaced individually because lead-free soldering is provided.</td></tr>
<tr><td colspan="2">2. Remove each wire harness</td><td rowspan="3"></td><td rowspan="3"></td></tr>
<tr><td>1</td><td>Disconnect 4 connectors of the electronic expansion valve lead wires.</td></tr>
<tr><td>2</td><td>Remove the four way valve connector S80.</td></tr>
<tr><td>3</td><td>Disconnect the thermistor connector and the overload relay connector.</td><td> 
</td><td>
<table>
<tr><th>Connector</th><th>Electronic expansion valve No.</th><th>Harness length</th></tr>
<tr><td>S20 (White)</td><td>EVA</td><td>630</td></tr>
<tr><td>S21 (Red)</td><td>EVB</td><td>730</td></tr>
<tr><td>S22 (Blue)</td><td>EVC</td><td>825</td></tr>
<tr><td>S23 (Yellow)</td><td>EVD</td><td>940</td></tr>
</table>
■ When reconnecting, make sure to match the wire to the correct connector.

S40:Overload relay
S90:Thermistor
(Outdoor air, heat exchanger, discharge pipe)
S92:Gas pipe thermistor
S93:Liquid pipe thermistor</td></tr>
</table>

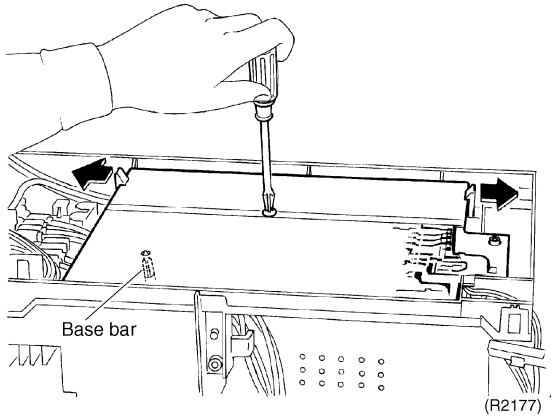
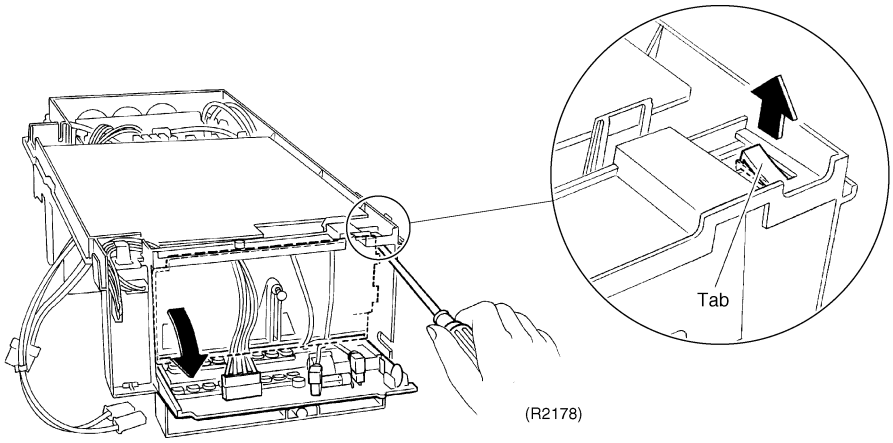
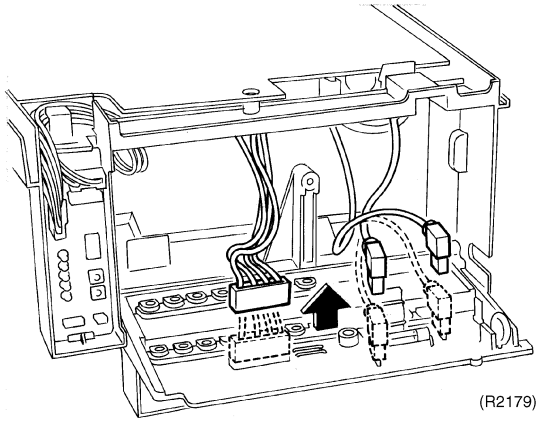
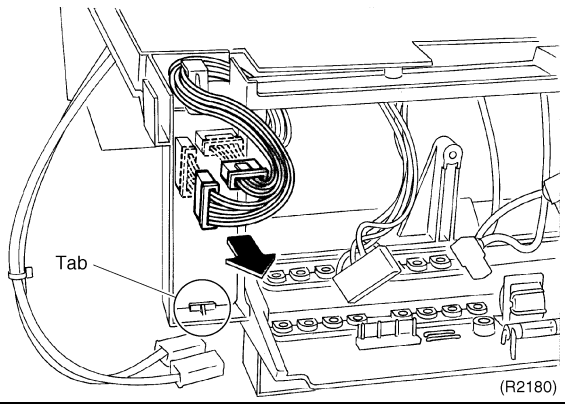
Step	Procedure		Points
4	Disconnect the compressor relay connector.	 (R2169)	
5	Remove the reactor lead wire.	 Reactor (R2170)	
3. Removing the wiring fixture			
1	Remove 6 screws of the wiring fixture.	 Wiring fixture (R2171)	
4. Removing the electrical box.			
1	Remove 1 screw of the electrical box.	 (R2172)	

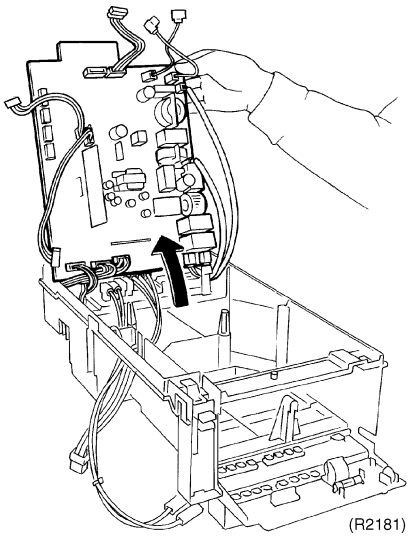
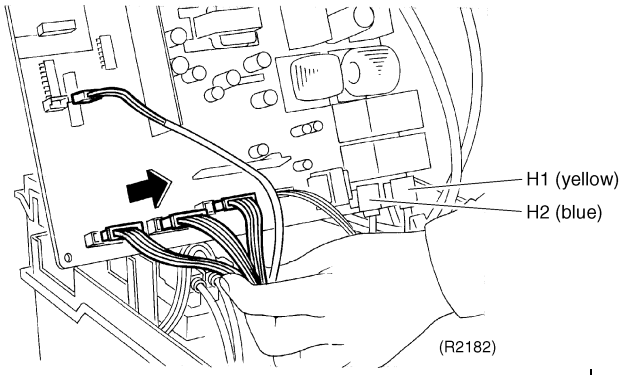
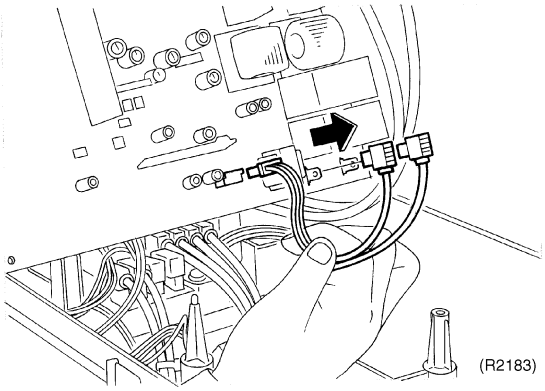
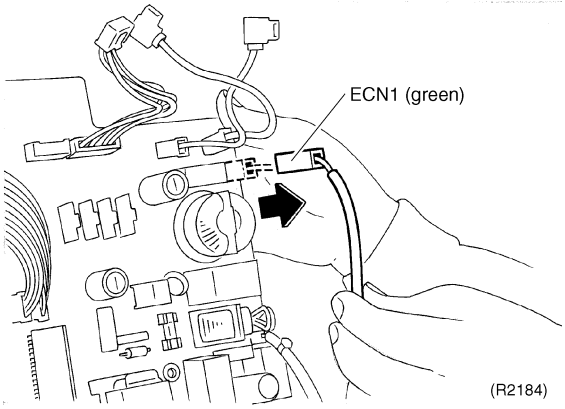
Step	Procedure	Points
2	Remove 1 screw of the electrical box.  (R2173)	
3	Remove the drip-proof cover.  (R2174)	
4	Disconnect the fan motor lead wire.  (R2175)	
5	Lift up the electrical box and dismount it.  (R2176)	

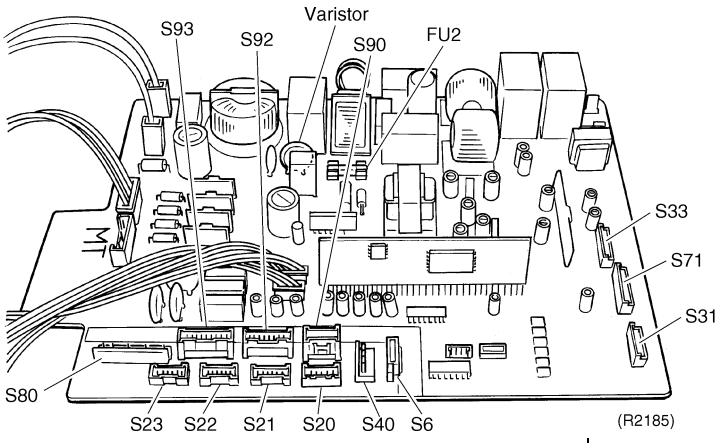
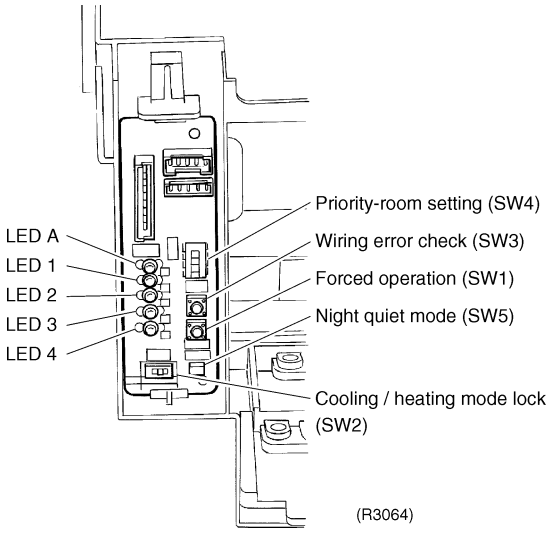
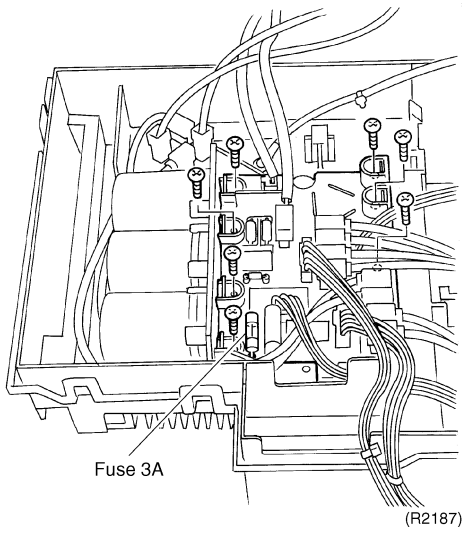
2.3 Removal of PCB

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1. Removing the controller PCB		
1 Remove 1 screw of the PCB, and release two tabs.		
2 Release the tabs of the terminal board, and open the terminal board.		
3 Disconnect each connector on the back of the terminal board.		
4 Disconnect the service monitor PCB connector.		■ Release the tab to remove the service monitor PCB.

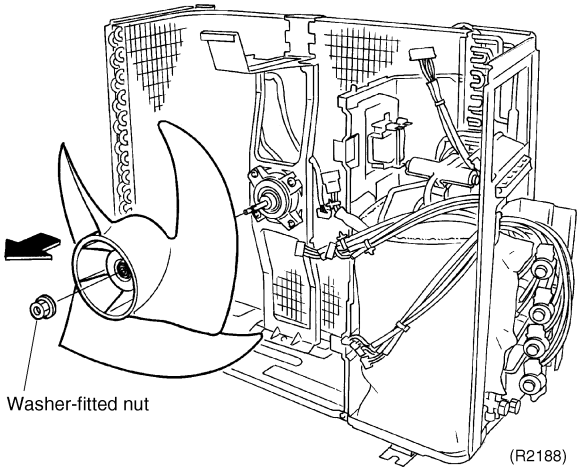
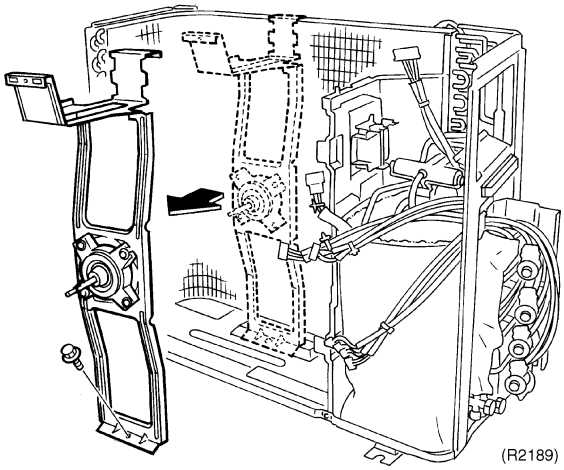
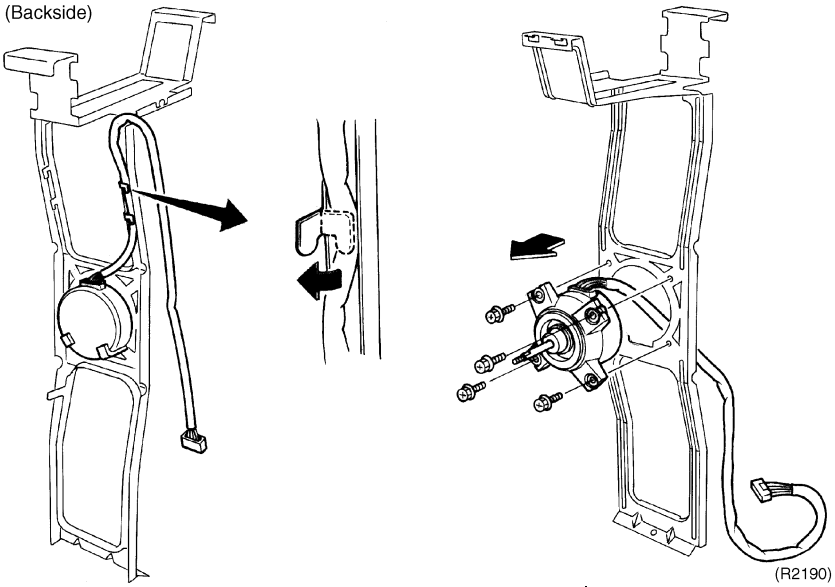
Step	Procedure	Points
5	Lift up the control PCB.  (R2181)	
6	Disconnect each wire harness connector linked to the control PCB. S31 (Pin 9): To CN14 S32 (Pin 5): To CN11 S33 (Pin 10): To S34 S71 (Pin 8): To S72  (R2182)  (R2183)  (R2184)	

Step	Procedure		Points
7	The figure shows the control PCB.		■ Glass tube fuse 3A
2. Removing the service monitor PCB			
1	The figure shows the service monitor PCB.		
3. Removing the inverter PCB.			
1	Remove the 7 screws of the inverter PCB.		

2.4 Removal of Fan Motor

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

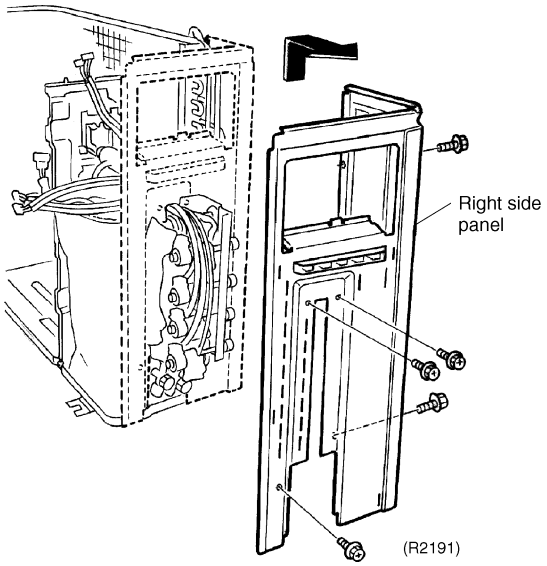
Step	Procedure	Points
■ Remove the fan motor lead wire connector.		■ For reassembling, align ▼ mark of propeller fan with D-cut section of motor shaft. ■ Mount the propeller fan while positioning ● mark to the top.
1 Remove the propeller fan by removing the washer-fitted nut.		
2 Remove the fan motor. Remove 1 screw of the fan motor mount.		■ When reassembling, fix the lead wire to avoid contact with the propeller fan.
3 Disconnect the lead wire by releasing the 2 clamps fixing the wire. Remove 4 screws of the fan motor.		

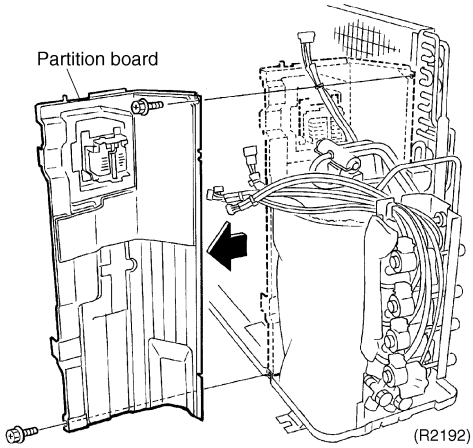
2.5 Removal of Sound Blanket

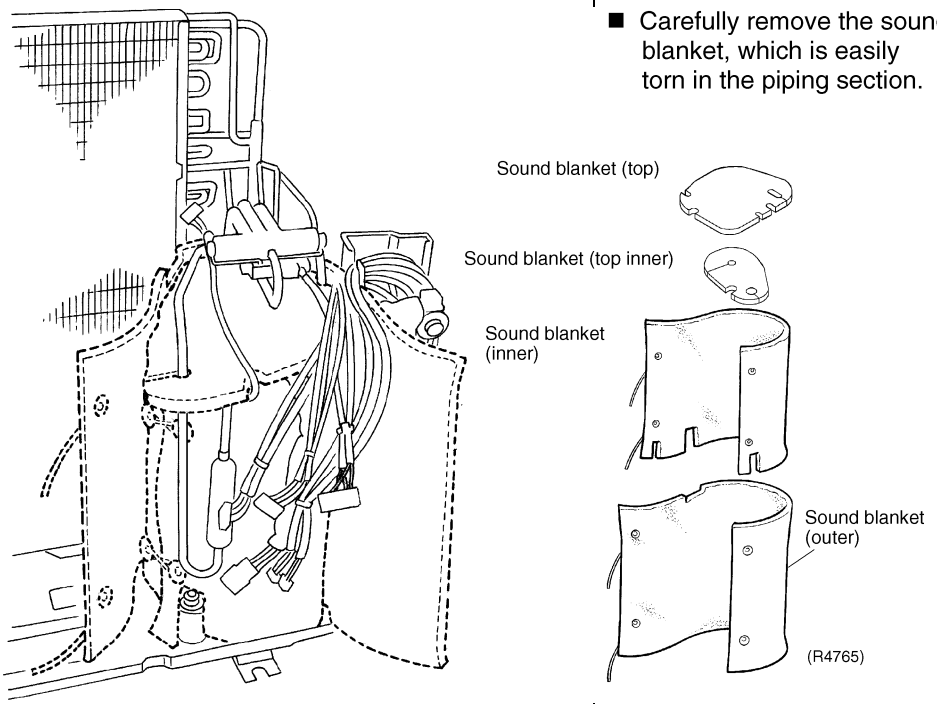
Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1	Remove 5 screws of the right side panel.	
2	Remove 2 screws of the partition board, and remove the board.	
3	Remove the sound blanket (top, outer and inner).	■ Carefully remove the sound blanket, which is easily torn in the piping section.



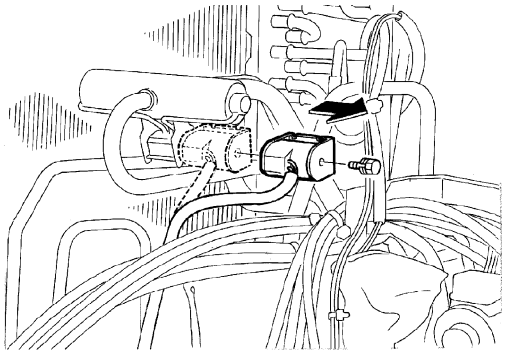
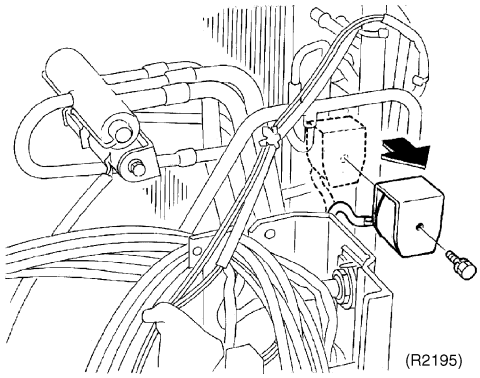
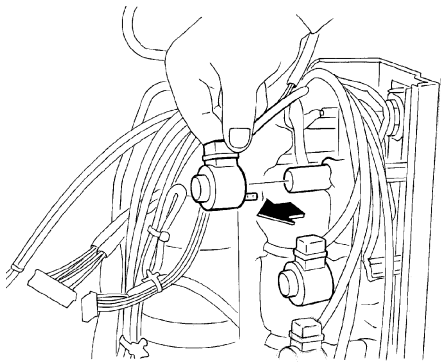
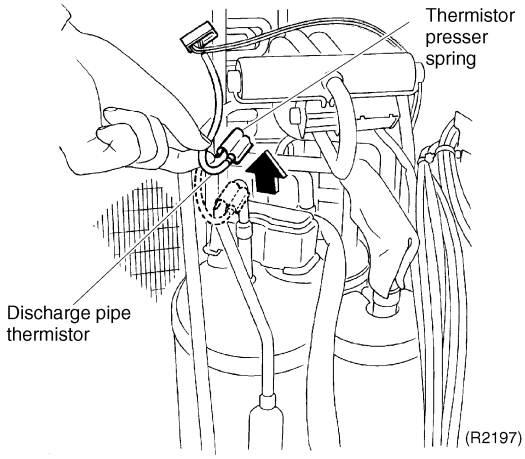
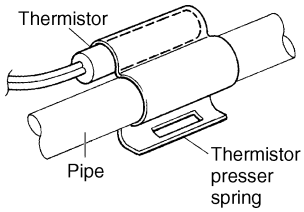


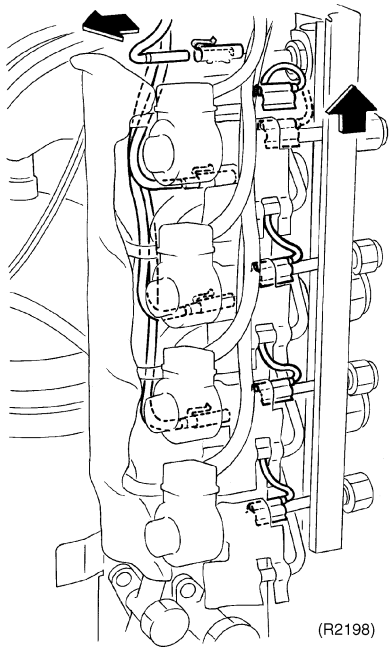
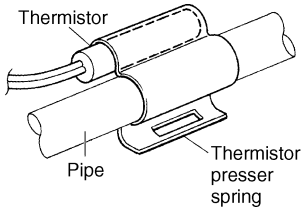
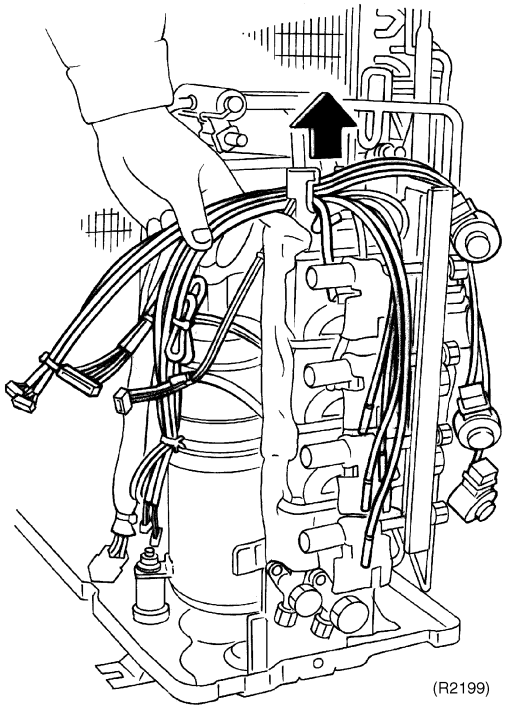


2.6 Removal of Four Way Valve Coil, Solenoid Valve Coil, Electronic Expansion Valve Coil and Thermistor

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

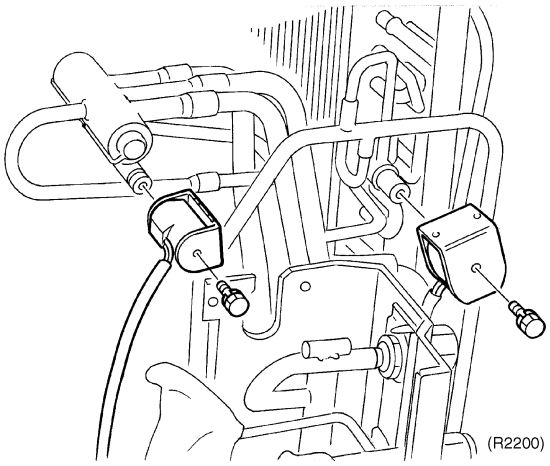
Step	Procedure		Points
1	Remove 1 screw of the four way valve coil.	 (R2194)	
2	Remove one screw of the solenoid valve coil.	 (R2195)	
3	Remove the electronic expansion valve coil for each room.	 (R2196)	■ Place the thermistor so that its end comes up to the end of the presser spring. ■ Be careful not to lose the presser spring for the discharge pipe thermistor.
4	Release the thermistor presser spring, and remove the discharge pipe thermistor.	 (R2197)	

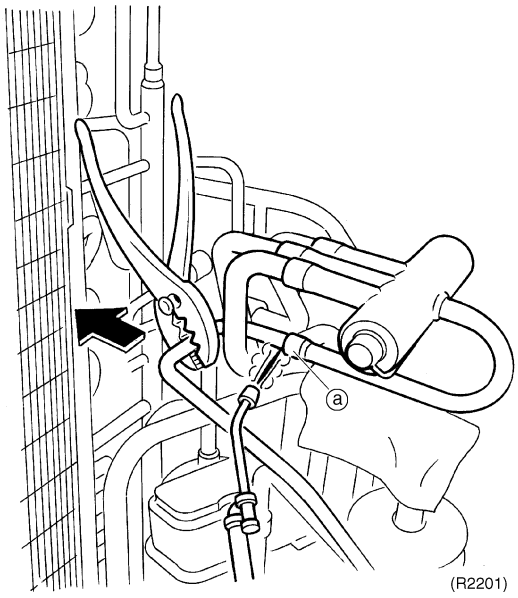
Step	Procedure		Points
5	Take off the putty, and remove each thermistor.	 (R2198)	■ Place the thermistor so that its end comes up to the end of the presser spring. ■ Be careful not to lose the presser spring for the discharge pipe thermistor. 
6	Remove the wire harness.	 (R2199)	S90: ■ Outdoor air thermistor (Blue) ■ Heat exchanger thermistor (Gray) ■ Discharge pipe thermistor (Black) S92: Gas pipe thermistor ■ Room A (Black) ■ Room B (Gray) ■ Room C (Brown) ■ Room D (Red) S93: Liquid pipe thermistor ■ Room A (Black) ■ Room B (Gray) ■ Room C (Yellow) ■ Room D (Blue)

2.7 Removal of Four Way Valve, Solenoid Valve and Shunt

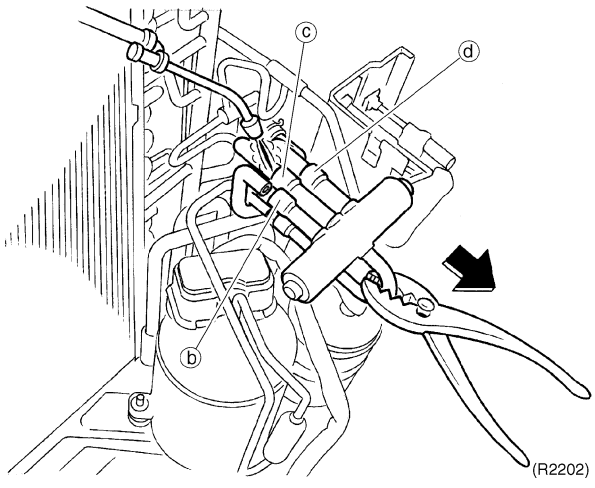
Procedure ⚠ **Warning** **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1	Remove 1 screw of the four way valve coil.	**Reassembling precautions** 1. Use non-oxidizing brazing method. If nitrogen gas is not available, braze the parts speedily. 2. Avoid deterioration of the gaskets due to carbonization of oil inside the four way valve or thermal influence. For this purpose, wrap the four way valve with wet cloth. Splash water over the cloth against becoming too hot (keep it below 120°C).
2	Remove 1 screw of the solenoid valve coil.	
■	Before taking this procedure, make sure there is no refrigerant gas left in the refrigerant pipes.	■ In pulling the pipes, be careful not to over-tighten them with pliers. The pipes may get deformed.
3	Place welding protective sheet or iron plate around the four way valve to prevent the flames of a gas welding rod from affecting the valve.	If the gas welding machine fails to remove the four way valve, take the steps below. 1. Disconnect the brazed pipe sections that are readily easy to separate and join together later. 2. With a small copper tube cutter, cut off the internal pipes to easily take out the four way valve.
4	Heat the four brazed points of the four way valve. Disconnect the point (a) first.	**Note:** Never use a hack saw. The sawdust may come into the circuit.
5	Disconnect the points (b) and (c).	
6	Disconnect the point (d).	


(R2200)



(R2201)

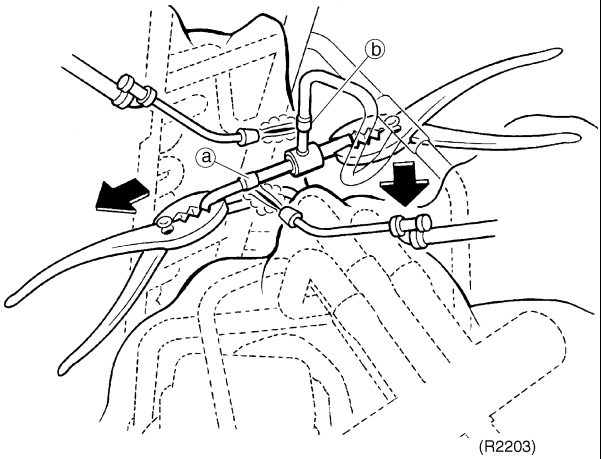
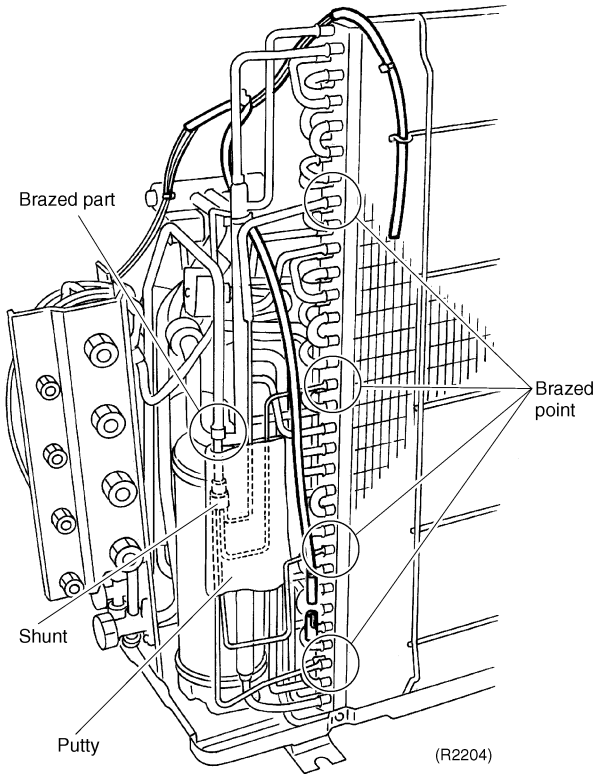


(R2202)

2.8 Removal of Solenoid Valve and Shunt

Procedure

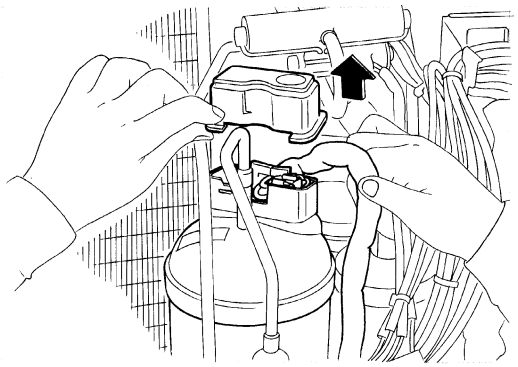
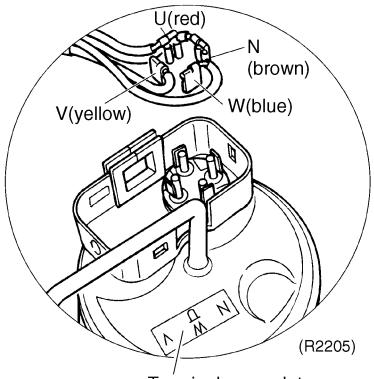
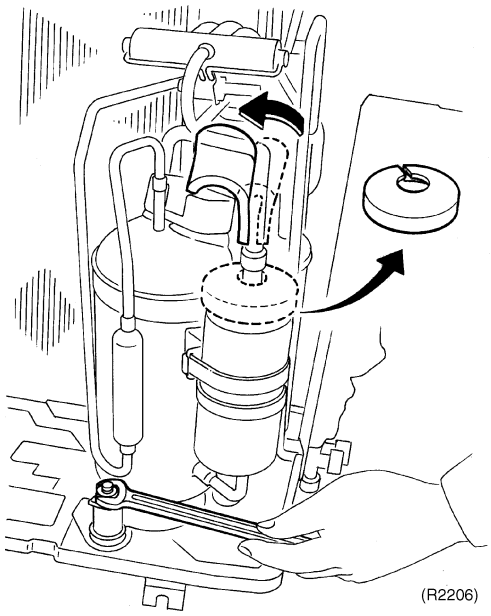
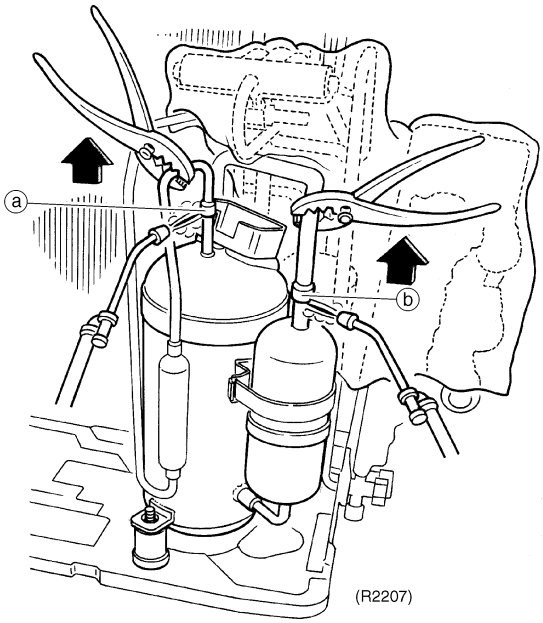
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
■ Before taking this procedure, make sure there is no refrigerant gas left in the refrigerant pipes.		**Caution** Be careful not to get yourself burnt with the pipes and other parts that are heated by the gas welding rod. **Warning** If refrigerant gas leaks during the job, ventilate the room. (Bear in mind that if the refrigerant gas is exposed to open flames, noxious gas may be generated.)
1 Disconnect the 2 brazed points (a) and (b) in this order. 2 Remove the putty of the shunt. 3 Disconnect the 5 brazed points of the shunt.		**Reassembling precautions** Wrap the solenoid valve body with wet cloth. Splash water over the cloth before it is dried to prevent the valve from being overheated.

2.9 Removal of Compressor

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1	Remove the terminal cover.	  Terminal nameplate
2	Disconnect the compressor lead wire.	As precaution, keep the contents in memorandum.
3	Remove the 2 sheets of putty.	■ Be careful to avoid burning the compressor terminals or the nameplate.
4	There is one nut fixing the compressor. Remove the nut with an open-end spanner.	
■ Make sure there is no refrigerant gas left inside the refrigerant pipes before starting the job.		
■ When heating up the brazed parts, make sure to carry out the N2 replacement.		**Warning** The compressor's refrigerating machine oil may catch fire. Have wet cloth at hand for quickly putting out the fire.
1	Disconnect the brazed part (a) at discharge side of the compressor.	
2	Disconnect the brazed part (b) at suction side of the compressor.	**Warning** If refrigerant gas leaks during the job, ventilate the room. (Bear in mind that if the refrigerant gas is exposed to open flames, noxious gas may be generated.)
		Caution Be careful not to get yourself burnt with the pipes and other parts that are heated by the gas welding rod.

Part 8
Others

1. Others

1.1 Test Run from the Remote Controller

For Heat pump

In cooling mode, select the lowest programmable temperature; in heating mode, select the highest programmable temperature.

- Trial operation may be disabled in either mode depending on the room temperature.
- After trial operation is complete, set the temperature to a normal level. (26°C to 28°C in cooling mode, 20°C to 24°C in heating mode)
- For protection, the system disables restart operation for 3 minutes after it is turned off.

For Cooling Only

Select the lowest programmable temperature.

- Trial operation in cooling mode may be disabled depending on the room temperature. Use the remote control for trial operation as described below.
- After trial operation is complete, set the temperature to a normal level (26°C to 28°C).
- For protection, the machine disables restart operation for 3 minutes after it is turned off.

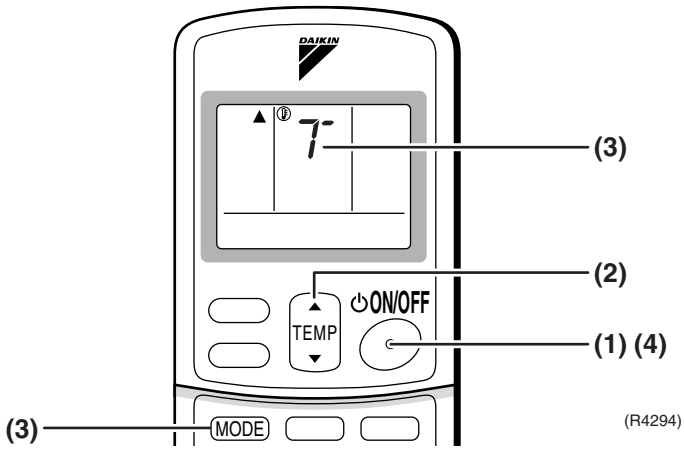
Trial Operation and Testing

1. Measure the supply voltage and make sure that it falls in the specified range.
2. Trial operation should be carried out in either cooling or heating mode.
3. Carry out the test operation in accordance with the Operation Manual to ensure that all functions and parts, such as louver movement, are working properly.

- The air conditioner requires a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

Trial operation from Remote Controller

(1) Press ON/OFF button to turn on the system.
(2) Simultaneously press center of TEMP button and MODE buttons.
(3) Press MODE button twice.
("T" will appear on the display to indicate that Trial Operation mode is selected.)
(4) Trial run mode terminates in approx. 30 minutes and switches into normal mode. To quit a trial operation, press ON/OFF button.



1.2 Jumper Settings

1.2.1 When Two Units are Installed in One Room

When two indoor units are installed in one room, the two wireless remote controllers can be set for different addresses.

How to set the different addresses

■ Control PCB of the indoor unit

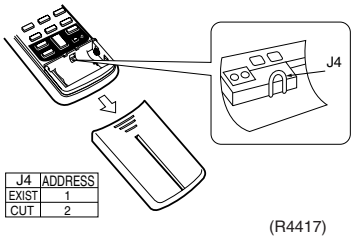
(1) Remove the electrical box.

(2) Cut the address jumper JA on the control PCB.

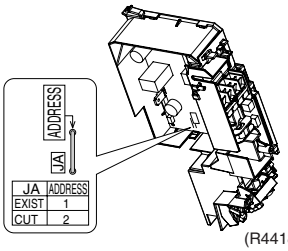
■ Wireless remote controller

(1) Slide the front cover and take it off.

(2) Cut the address jumper J4.



(R4417)



(R4418)

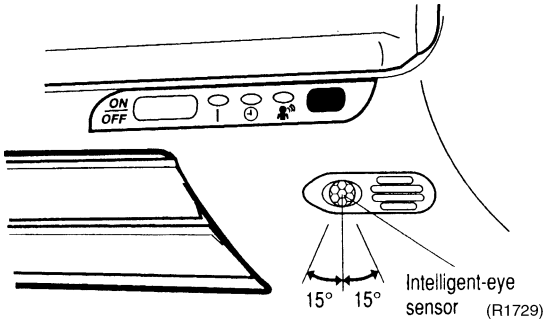
1.2.2 Jumper Setting

Jumper (On indoor PCB)	Function	When connected (factory set)	When cut
JC	Power failure recovery function	Auto start	Unit does not resume operation after recovering from a power failure. Timer ON-OFF settings are cleared.
JB	Fan speed setting when compressor is OFF on thermostat.	Fan speed setting ; Remote controller setting	Fan rpm is set to “0” <Fan stop>

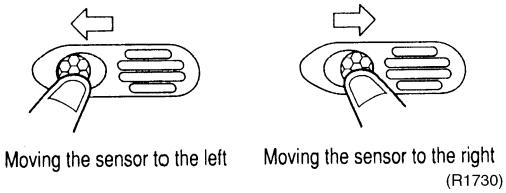
1.2.3 Adjusting the Angle of the Intelligent Eye Sensor

FTK(X)S20-35C, ATXS20-35D, ATXS20-35C

- Once installation of the indoor unit is complete, adjust the angle of the Intelligent eye sensor to ensure the detection area properly covers the room.
  (Adjustable angle : 15° to right and left of center)



- Gently push and slide the sensor to adjust the angle. Aim so that the sensor is pointing to the center of the room, or to the part of the room that is most frequently used.



- After adjusting the angle, gently wipe the sensor with a clean cloth, being careful not to scratch the sensor.

Caution

- Do not hit or violently push the Intelligent eye sensor. This can lead to damage and malfunction.
- Do not place large objects near the sensor. Also keep heating units or humidifiers outside the sensor's detection area.

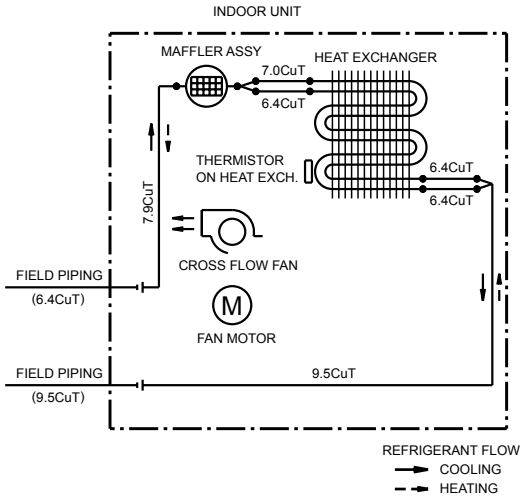
Part 9
Appendix

1. Piping Diagrams

1.1 Indoor Units

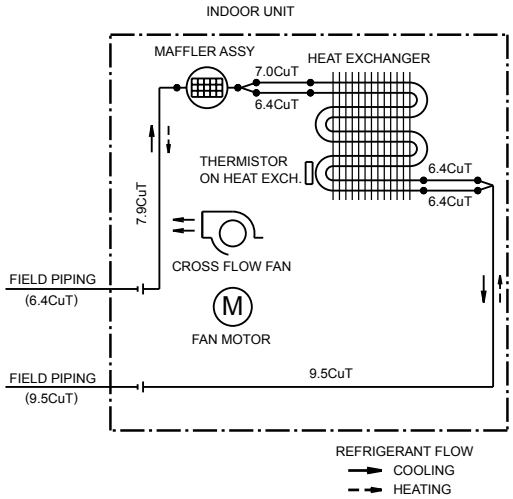
1.1.1 Wall Mounted Type

FTK(X)S20/25/35D(2)VMW(L)(9)



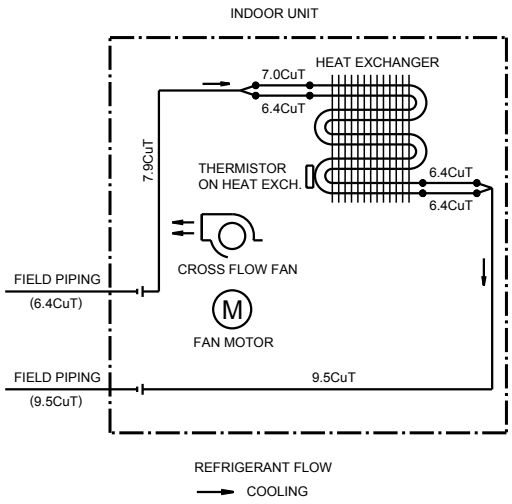
4D047912A

CTK(X)S50D(2)VMW(L)



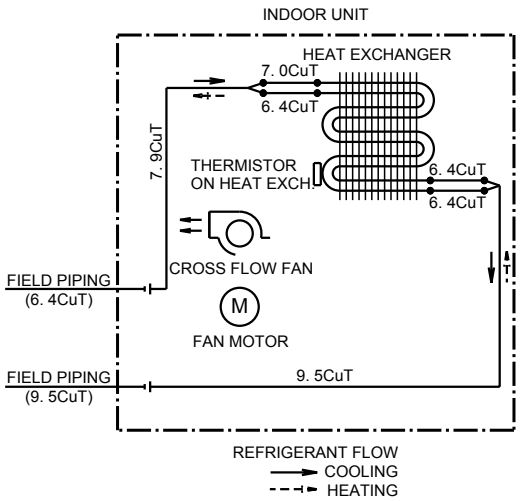
4D047913A

FTKS20/25/35CVMB(9)(8)



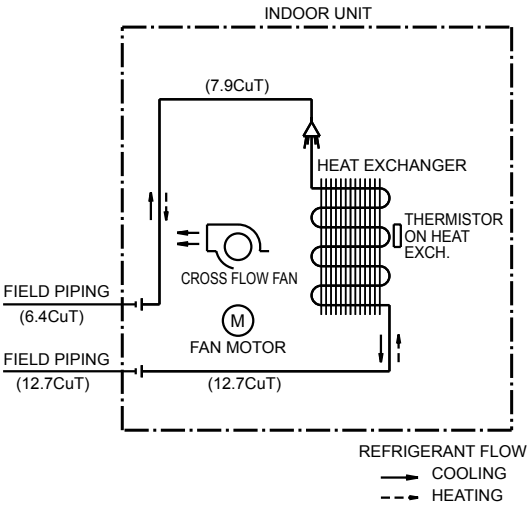
4D033698D

FTXS20/25/35CVMB(9)(8)
ATXS20/25/35DVMB, ATXS20/25/35CVMB(9)



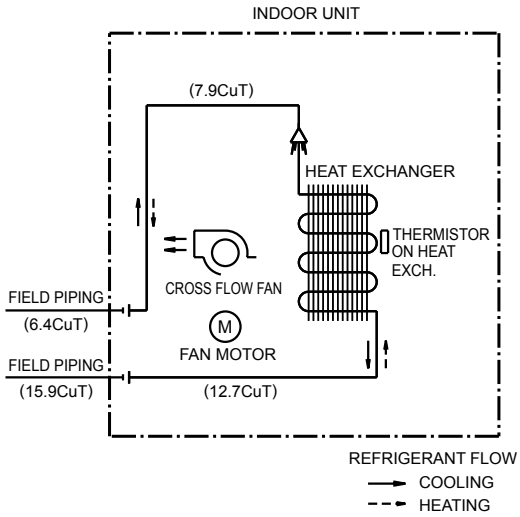
4D049319

FTK(X)S50/60BVMB
ATXS50DVMB, ATXS50CVMB



4D040081J

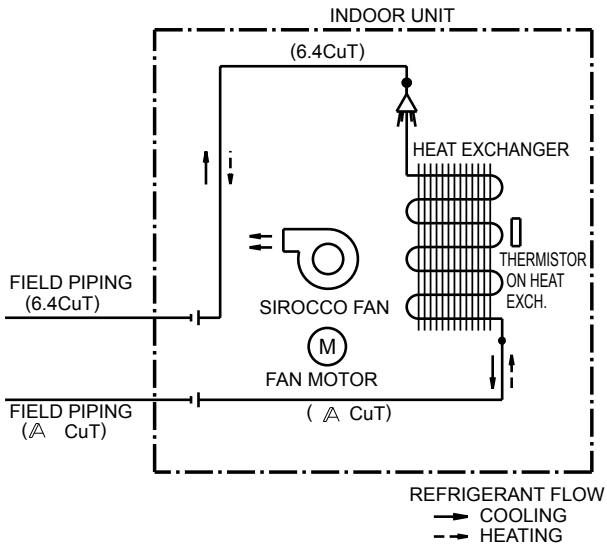
FTK(X)S71BVMB



4D040082H

1.1.2 Duct Connected Type

FDK(X)S25/35CVMB, CDK(X)S50/60CVMB

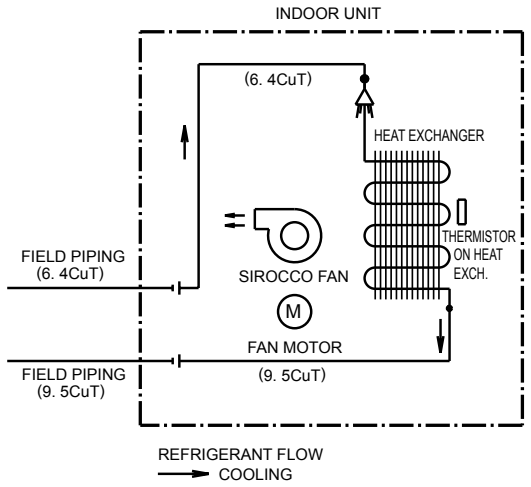


	A
CDXS25CVMB CDKS25CVMB CDXS35CVMB CDKS35CVMB CDXS25CVMA CDXS35CVMA FDXS25CVMB FDXS35CVMB FDKS25CVMB FDKS35CVMB	9.5
CDXS50CVMB CDKS50CVMB CDXS60CVMB CDKS60CVMB CDXS50CVMA CDXS60CVMA	12.7

4D045449B

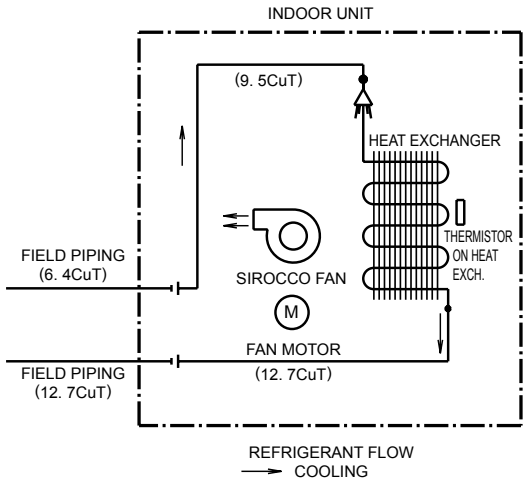
1.1.3 Floor / Ceiling Suspended Dual Type

FLKS25/35BVMB



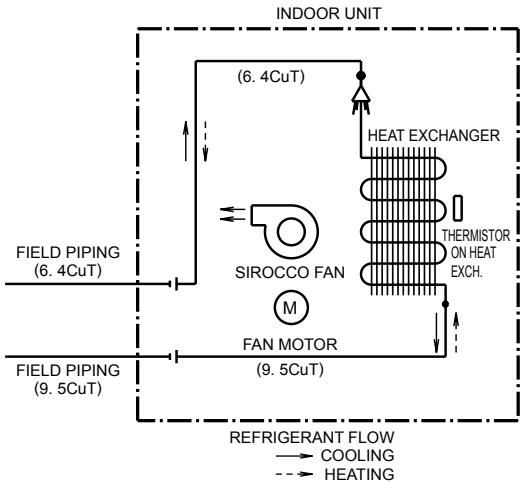
4D034012D

FLKS50/60BVMB



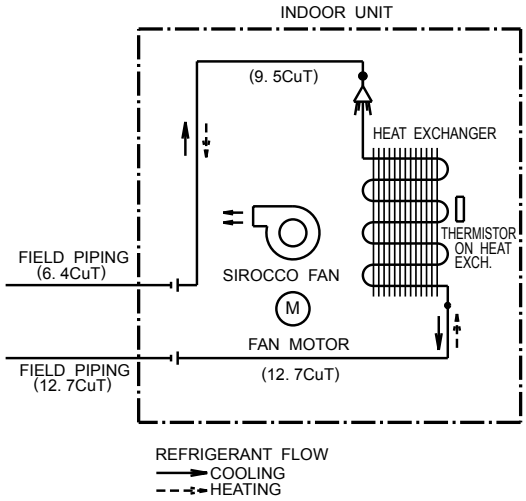
4D048723

FLXS25/35BVMB



4D048722

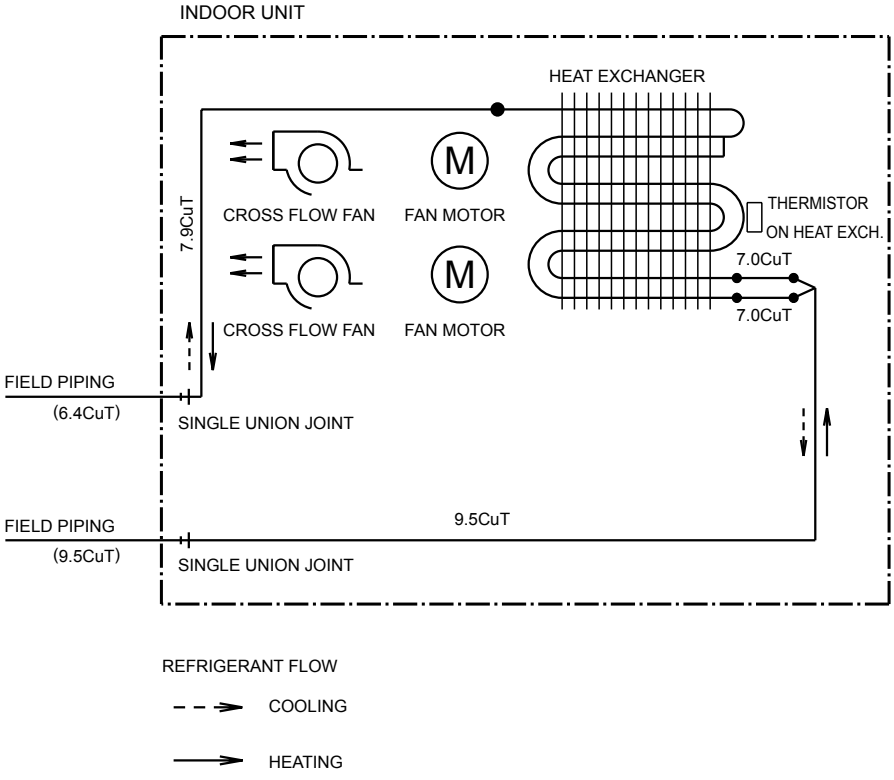
FLXS50/60BVMB



4D048724

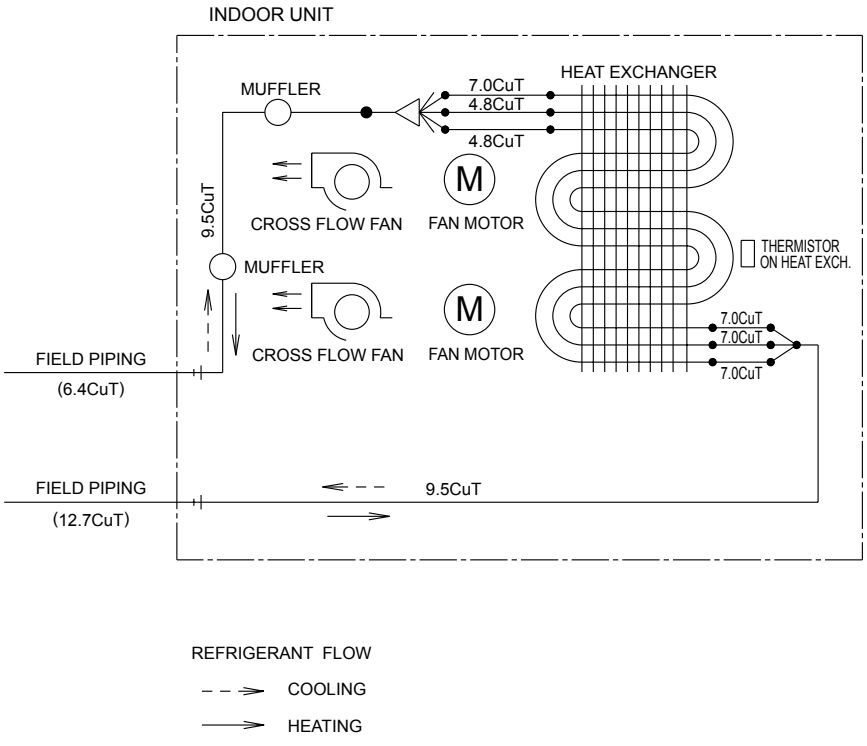
1.1.4 Floor Standing Type

FVK(X)S25/35BVMB



4D034714B

FVK(X)S50BVMB

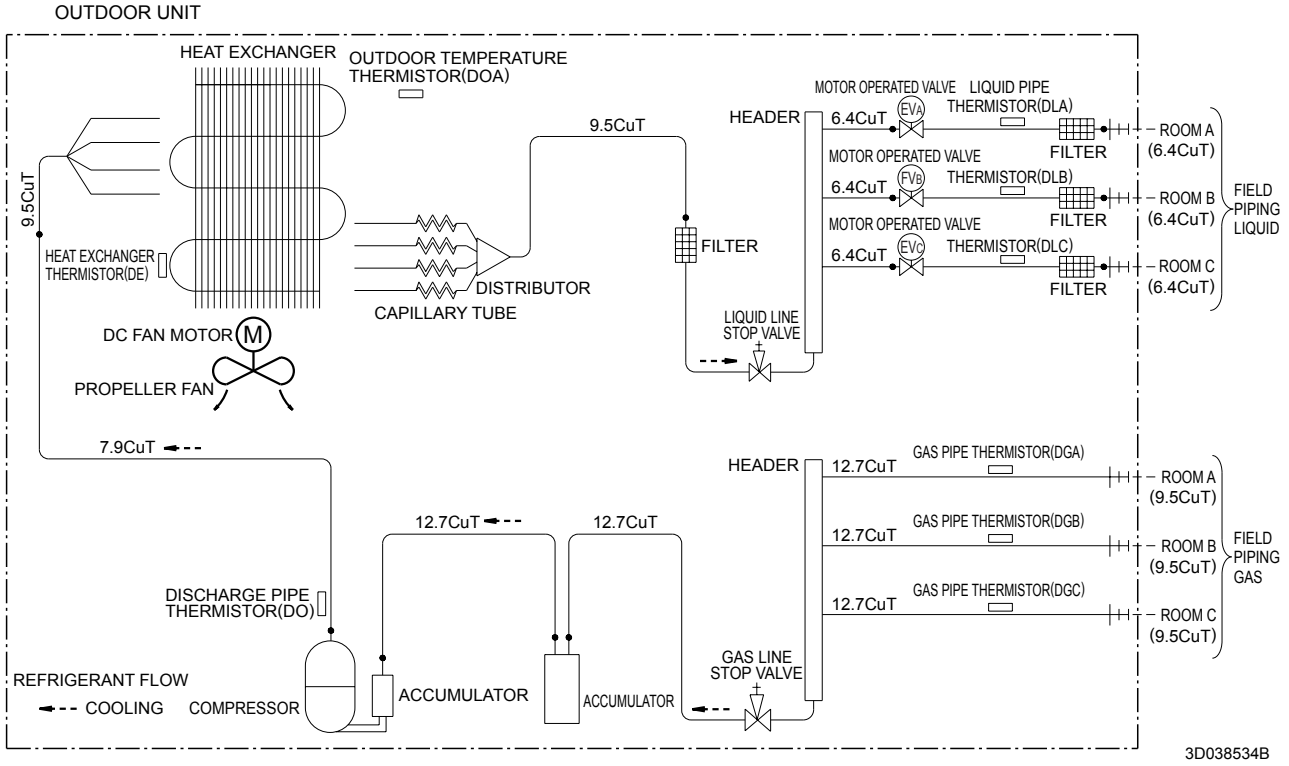


4D020911C

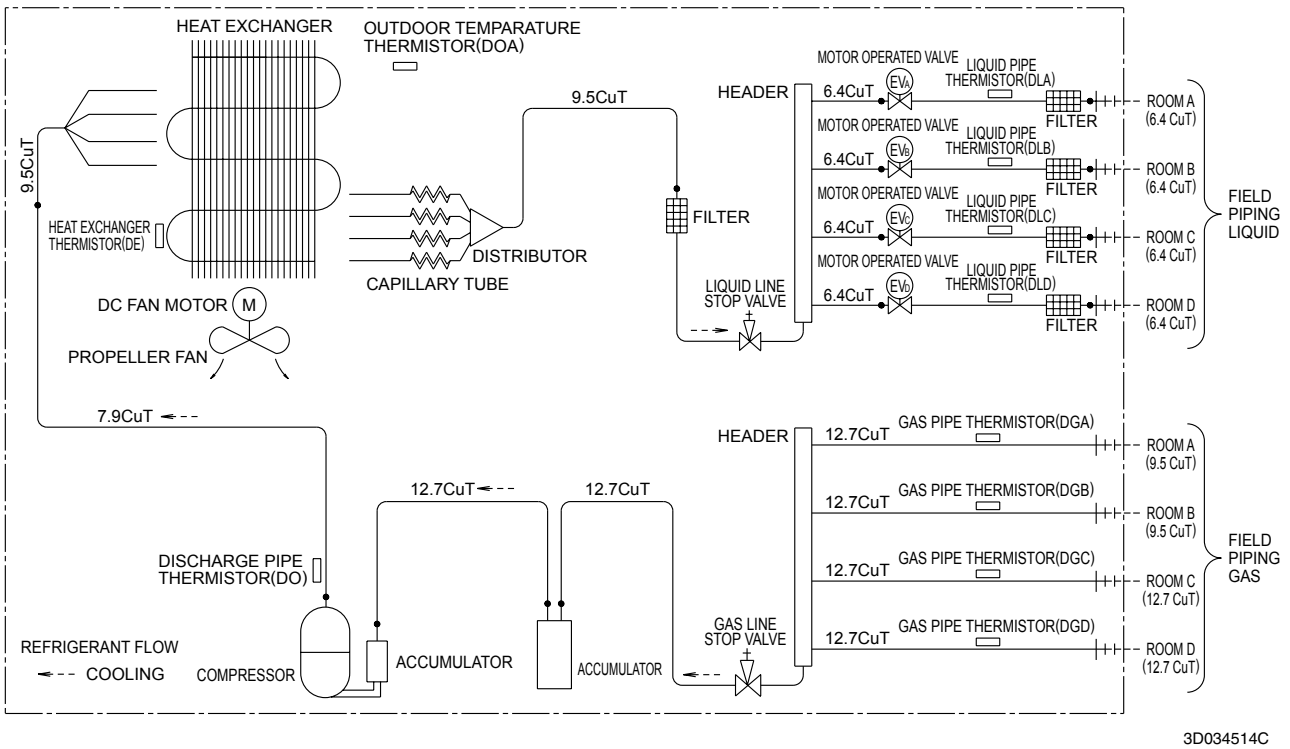
1.2 Outdoor Units

1.2.1 Cooling Only

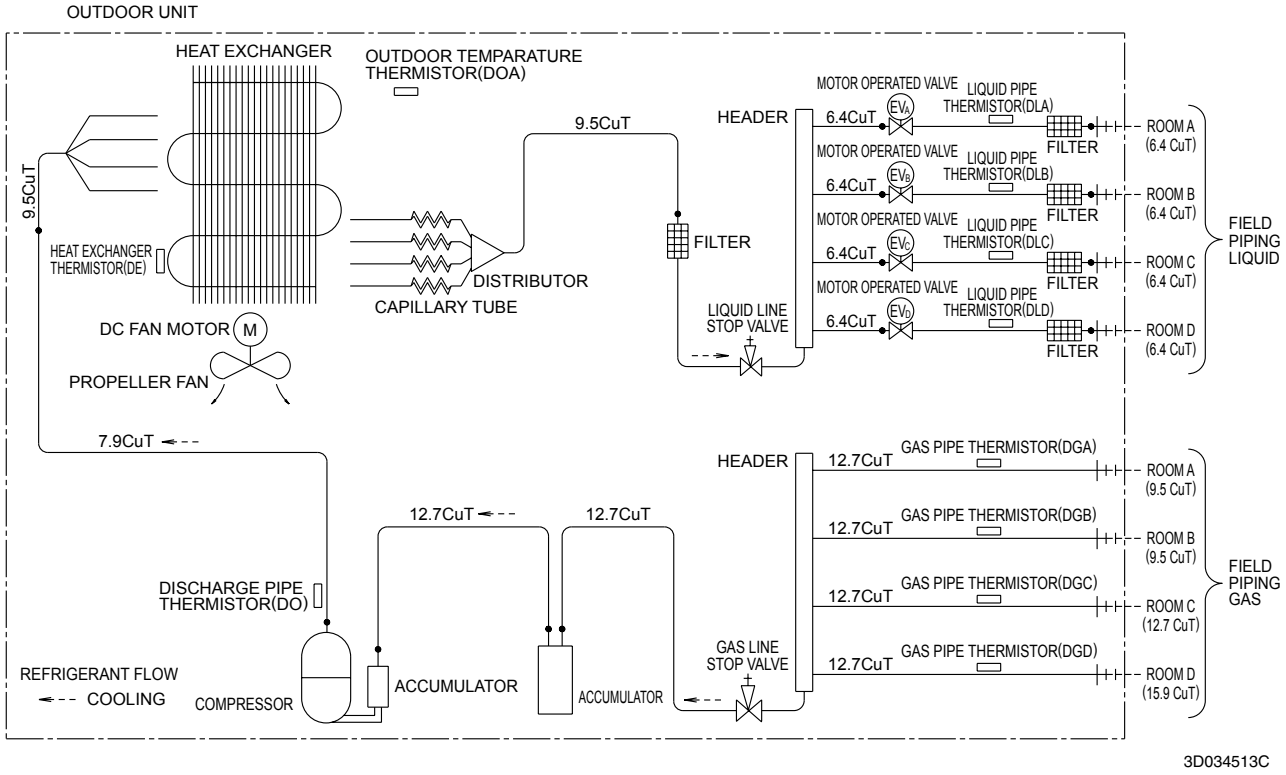
3MKS50DVMB



4MKS58DVMB

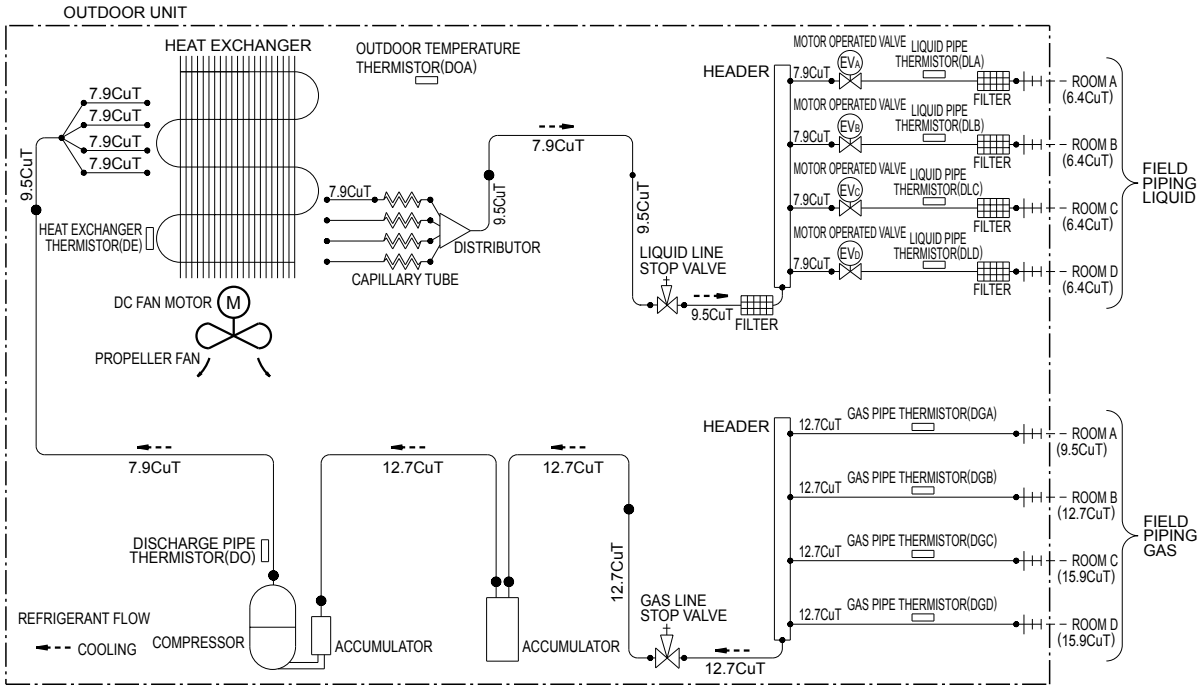


4MKS75DVMB



3D034513C

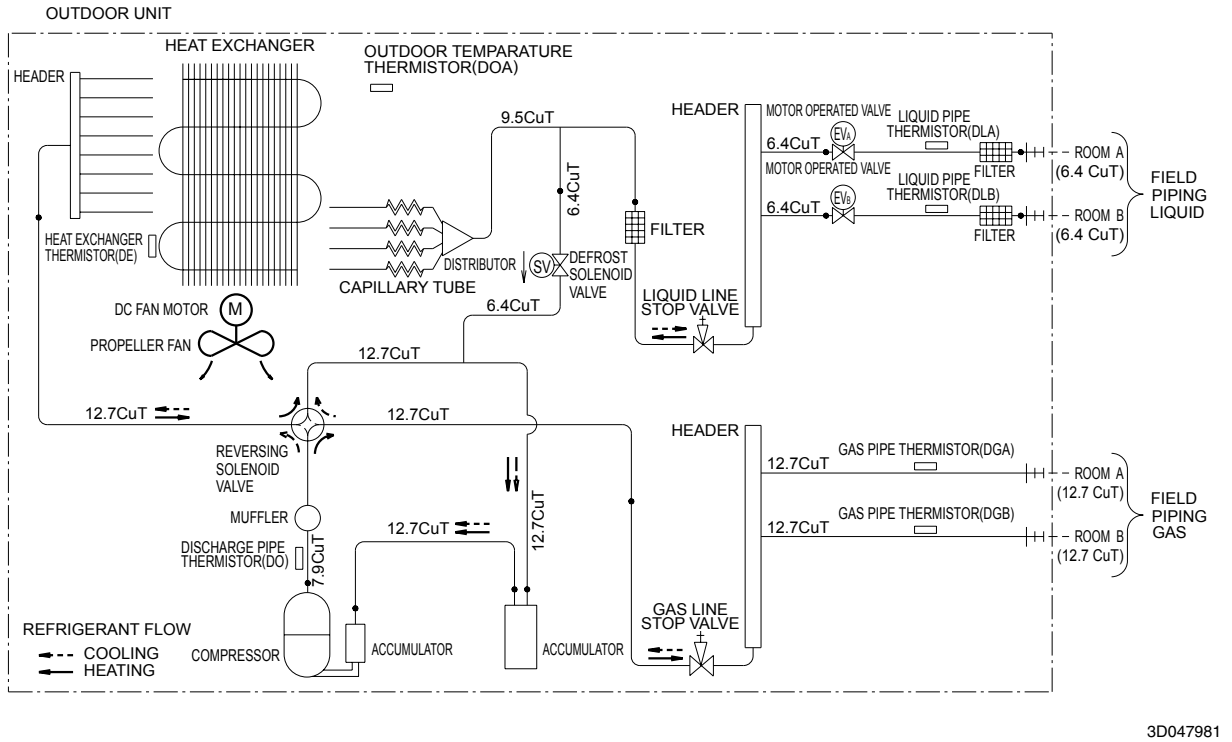
4MKS90DVMB



3D034481B

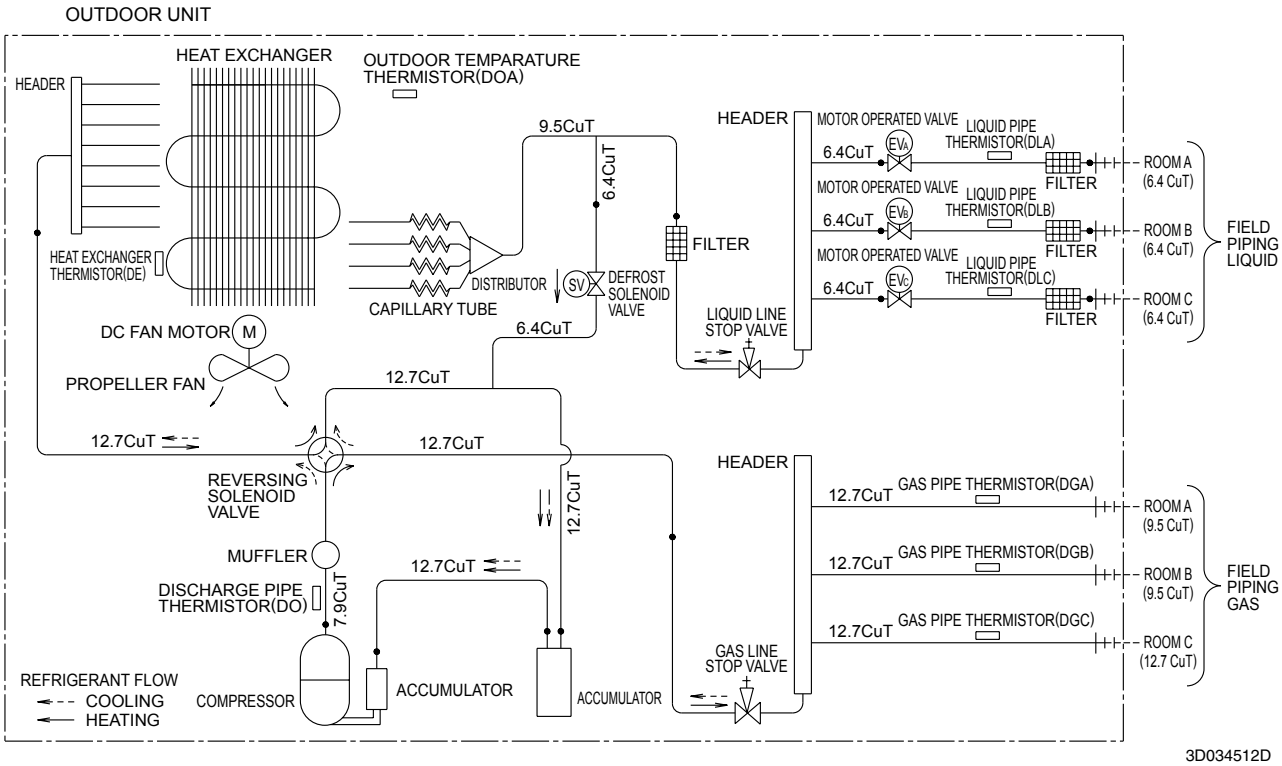
1.2.2 Heat Pump

2MXS52DVMB, 2AMX52DVMB



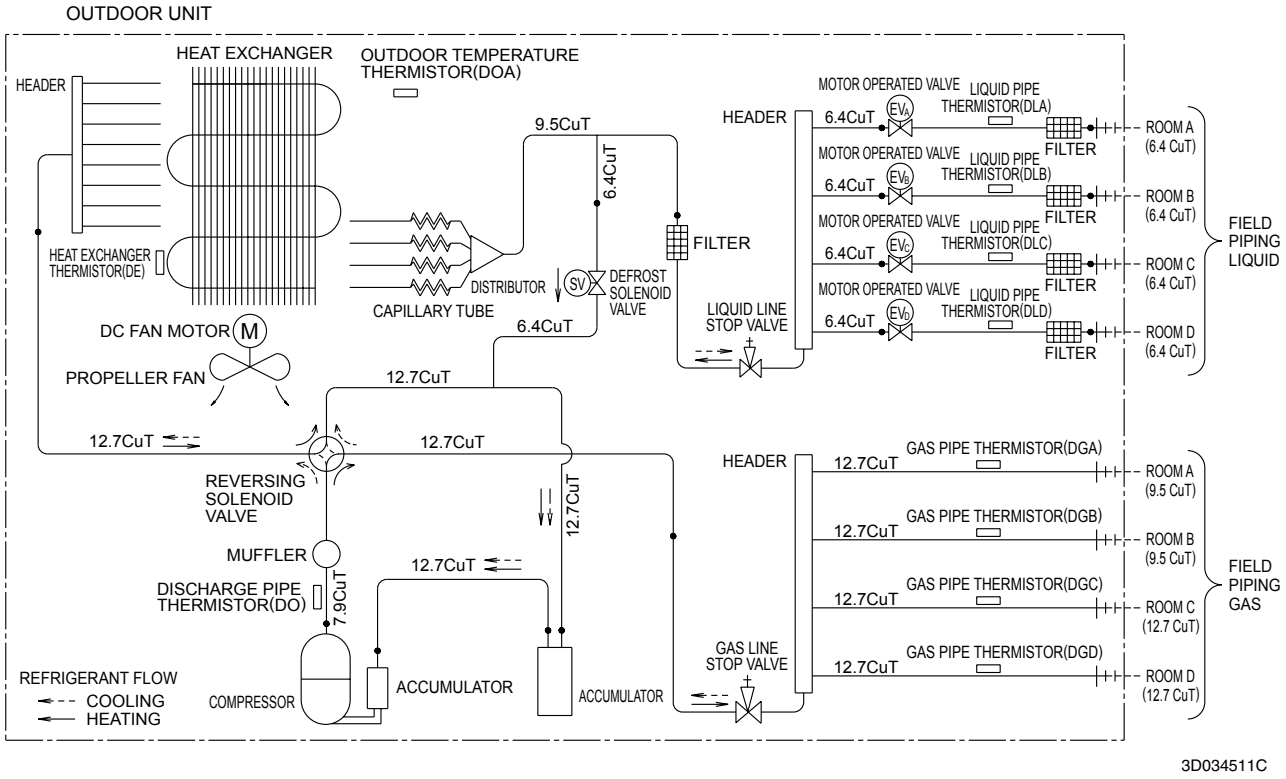
3D047981

3MXS52DVMB, 3AMX52CVMB

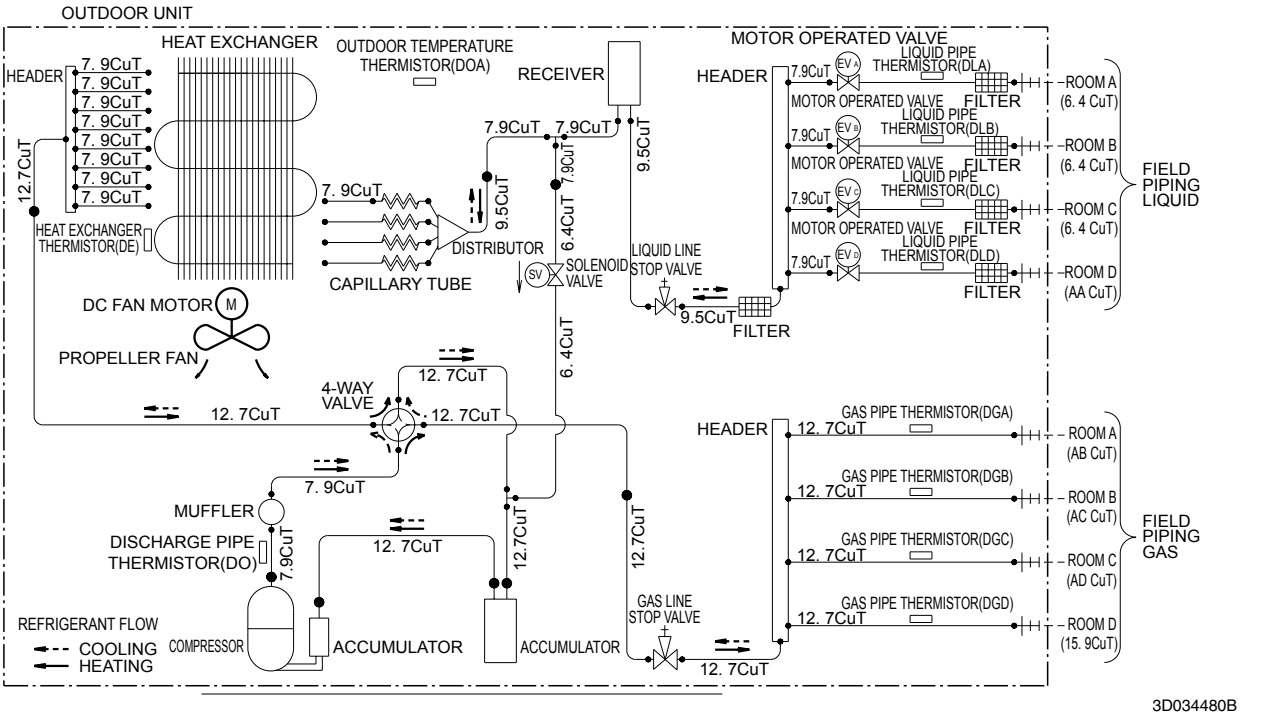


3D034512D

4MXS68DVMB



4MXS80DVMB

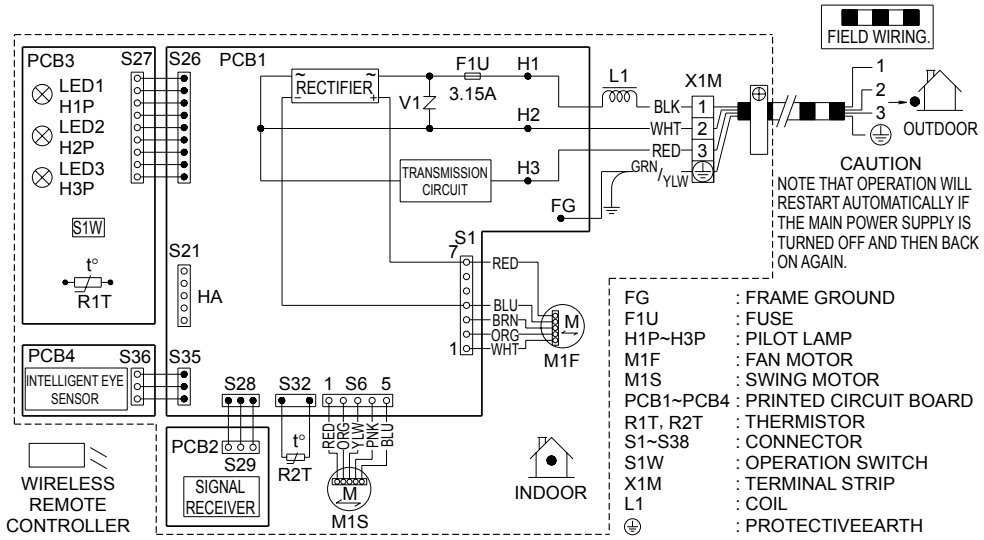


2. Wiring Diagrams

2.1 Indoor Units

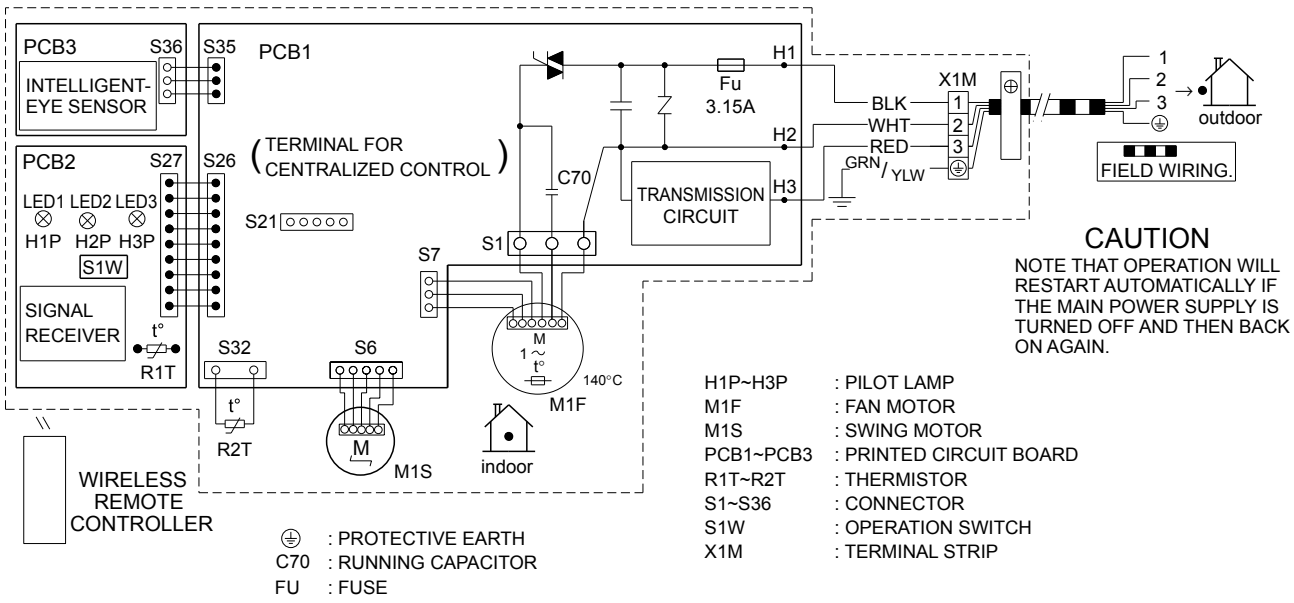
2.1.1 Wall Mounted Type

FTK(X)S20/25/35D(2)VMW(L)(9), CTK(X)S50D(2)VMW(L)



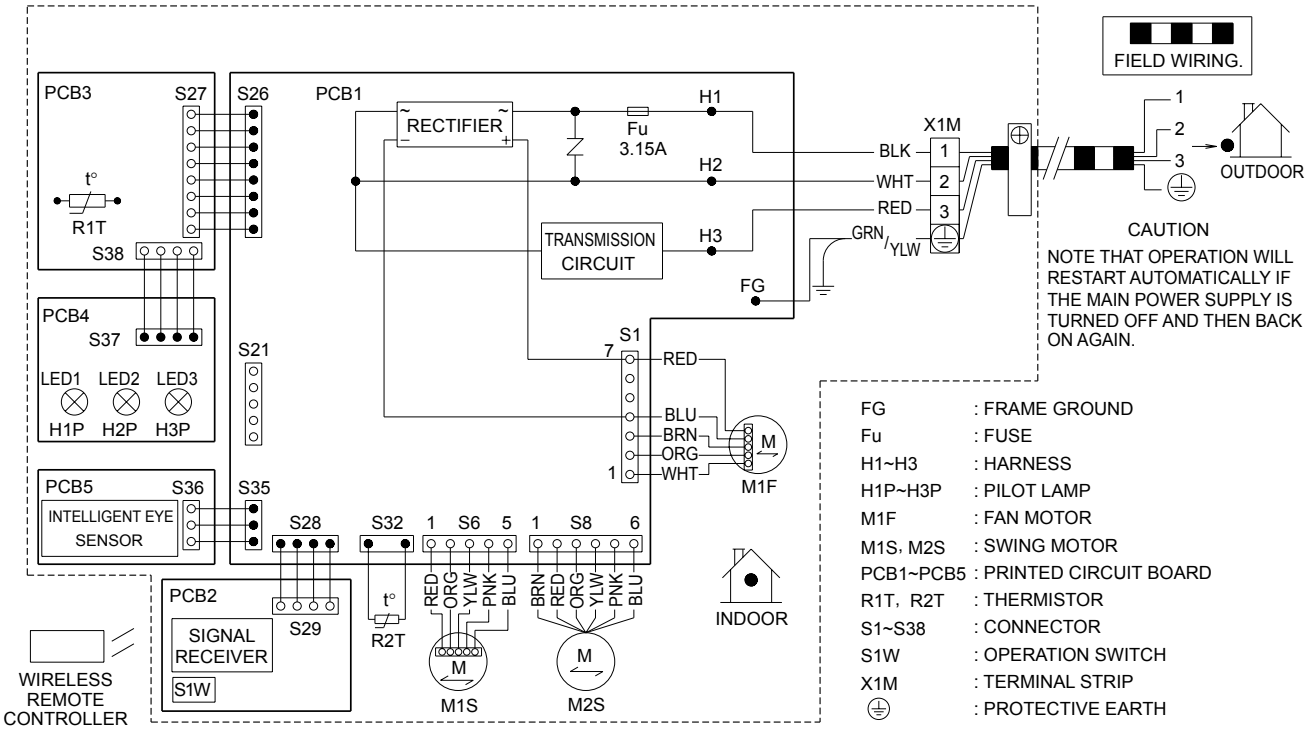
3D047523

FTK(X)S20/25/35CVMB(9)(8), ATXS20/25/35DVMB, ATXS20/25/35CVMB(9)



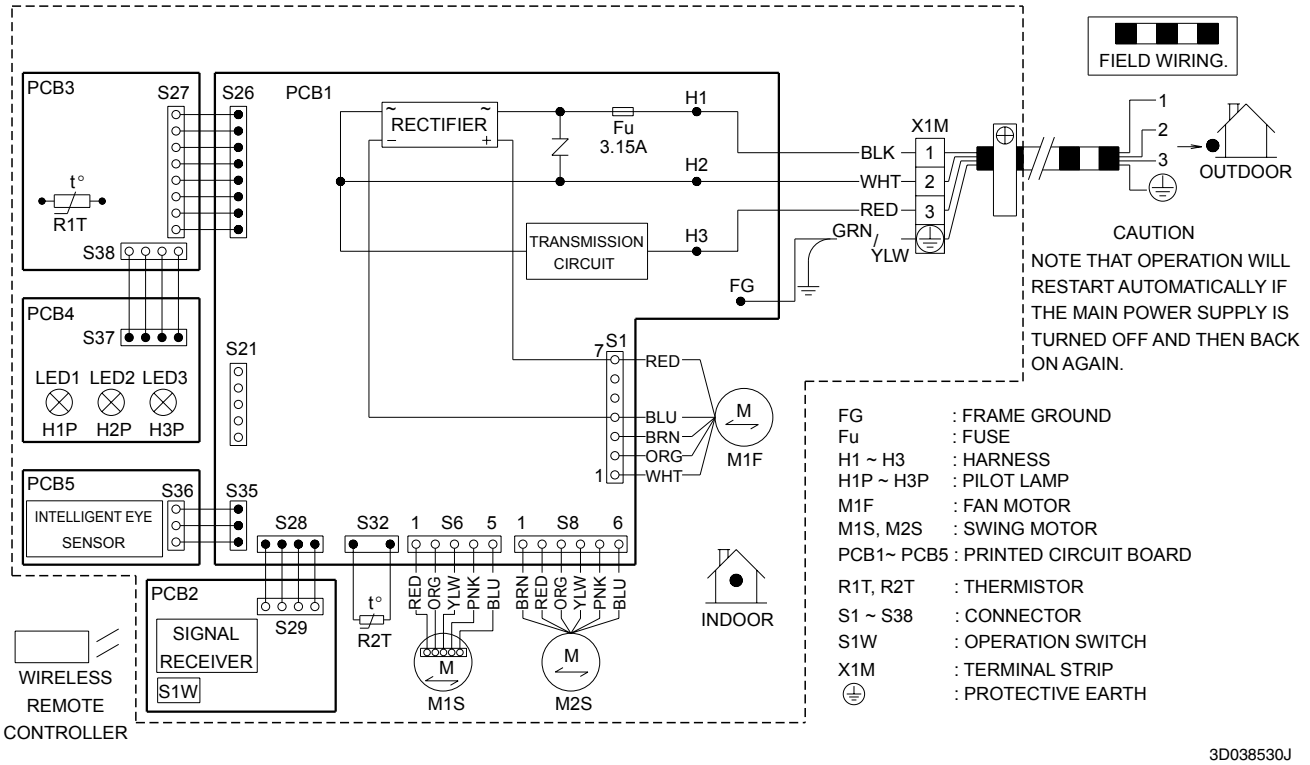
3D033599E

FTK(X)S50BVMB, ATXS50DVMB, ATXS50CVMB



3D038065G

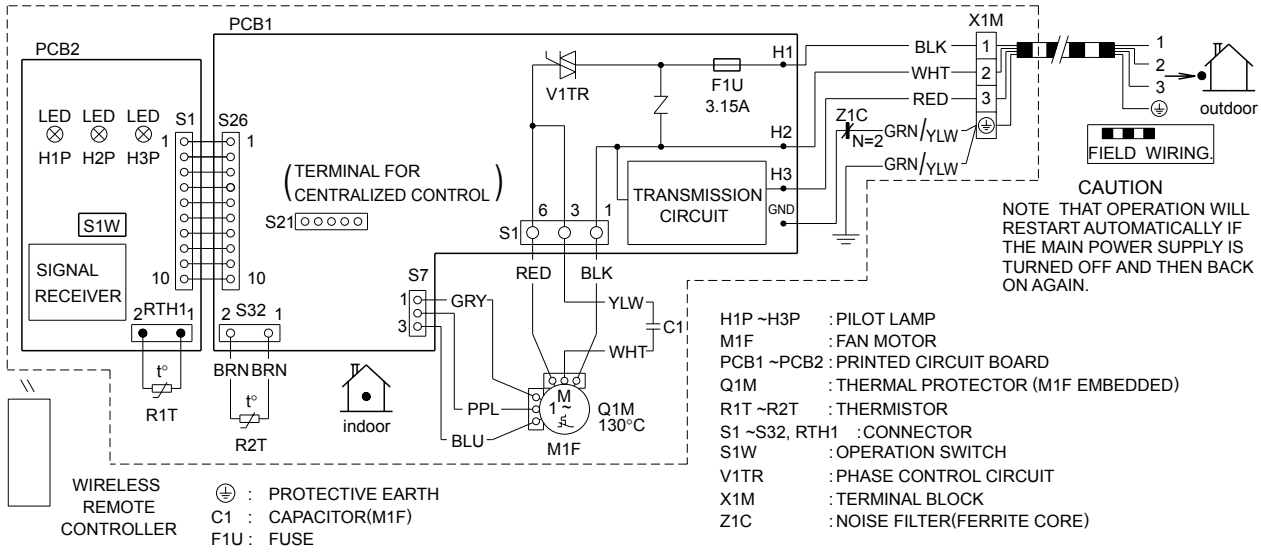
FTK(X)S60/71BVMB



3D038530J

2.1.2 Duct Connected Type

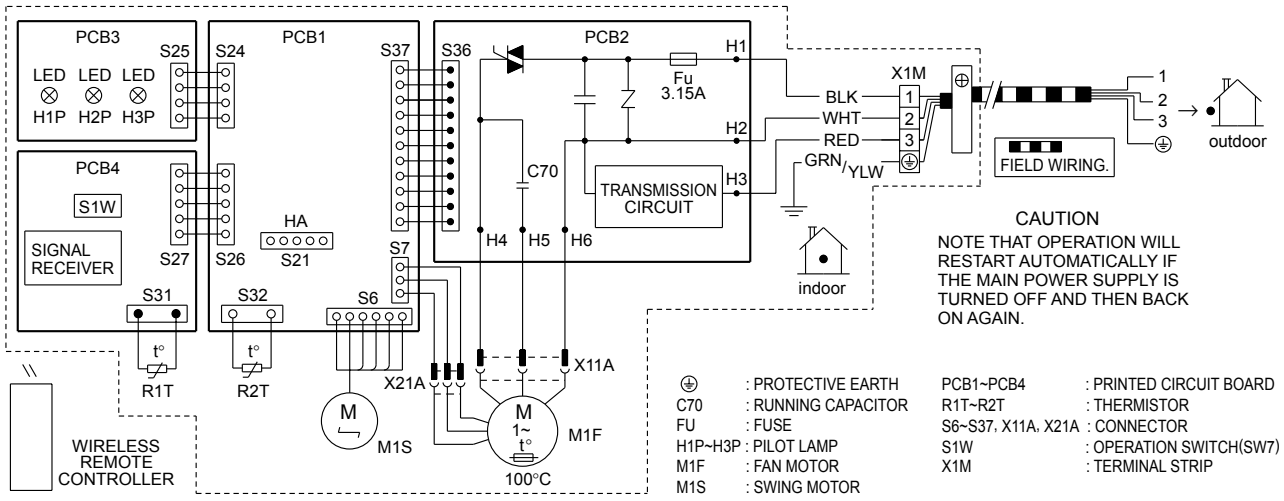
FDK(X)S25/35CVMB, CDK(X)S50/60CVMB



3D045012C

2.1.3 Floor / Ceiling Suspended Dual Type

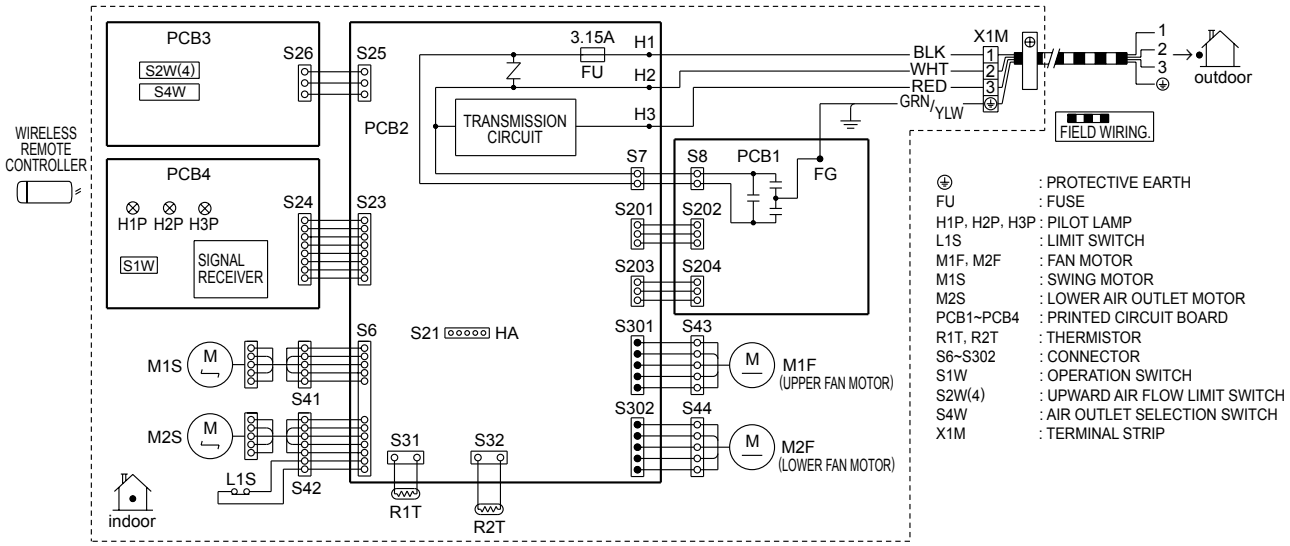
FLK(X)S25/35/50/60BVMB



3D033909D

2.1.4 Floor Standing Type

FVK(X)S25/35/50BVMB

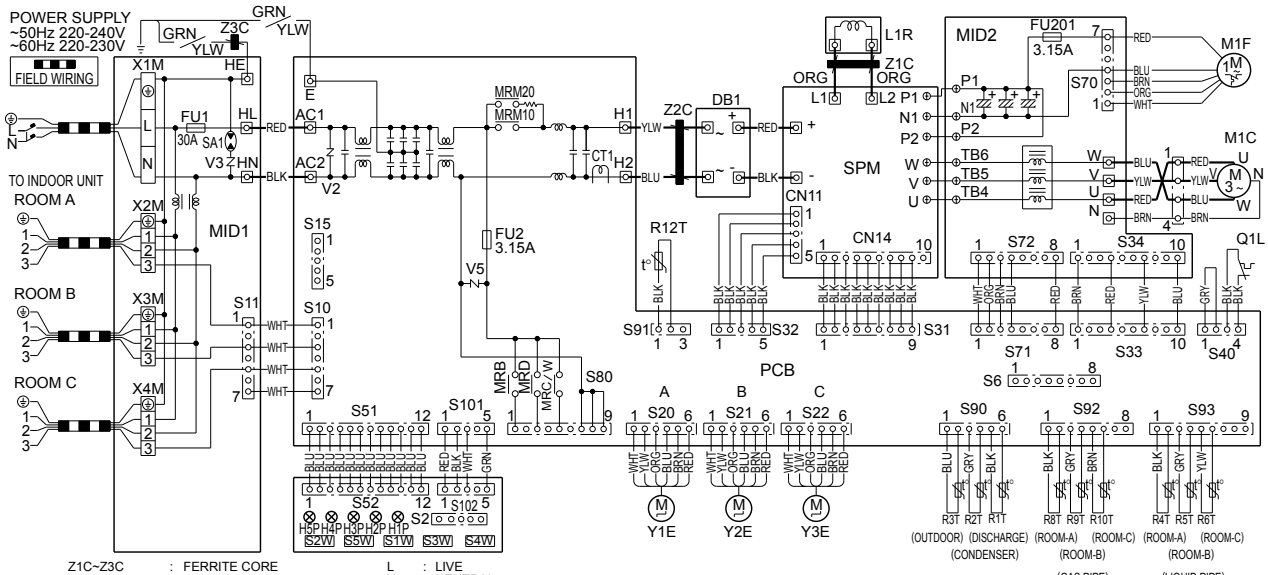


3D034713B

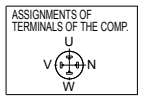
2.2 Outdoor Units

2.2.1 Cooling only

3MKS50DVMB



Z1C~Z3C	:	FERRITE CORE	L	:	LIVE
X1M~X4M	:	TERMINAL STRIP	N	:	NEUTRAL
Y1E~Y3E	:	ELECTRONIC EXPANSION VALVE COIL	S1W	:	FORCED OPERATION ON/OFF SW (SW1)
V2~V5	:	VARISTOR	S2W	:	SELECT SW (SW2)
FU1, FU2, FU201	:	FUSE	S3W	:	WIRING ERROR CHECK SW (SW3)
HE, HL, HN			S4W	:	PRIORITY ROOM SETTING SW (SW4)
E, AC1, AC2			S5W	:	NIGHT QUIET MODE SETTING SW (SW5)
H1, H2, L1			SA1	:	SURGE ARRESTER
L2,	:	CONNECTOR	PCB	:	PRINTED CIRCUIT BOARD
MRM10, MRM20			DB1	:	DIODE BRIDGE
MRB, MRD			M1C	:	COMPRESSOR MOTOR
MRC/W	:	MAGNETIC RELAY	M1F	:	FAN MOTOR
R1T~R12T	:	THERMISTOR	L1R	:	REACTOR
S2~S102, CN11, CN14	:	CONNECTOR	Q1L	:	OVERLOAD PROTECTOR
H1P~H5P	:	PILOT LAMP	SPM	:	SYSTEM POWER MODULE
MID1~MID2	:	MOLDED INTER CONNECT DEVICE	CT1	:	CURRENT TRANS



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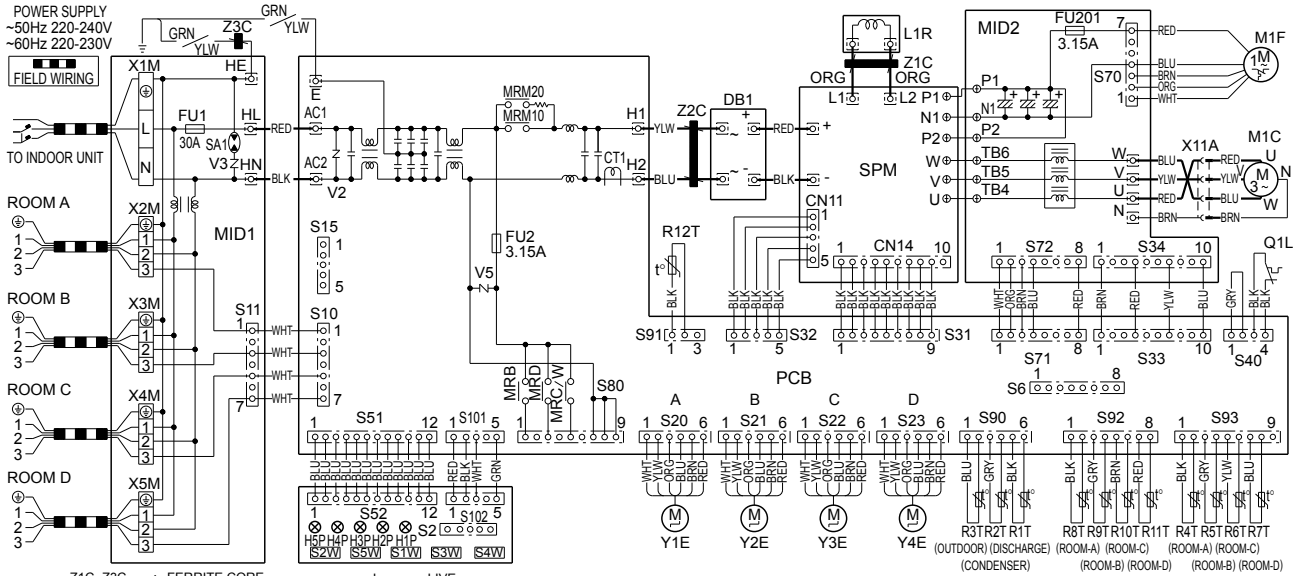
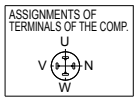
4MKS58DVMB, 4MKS75DVMB, 4MKS90DVMB



Z1C~Z3C	:	FERRITE CORE	L	:	LIVE
X1M~X5M	:	TERMINAL STRIP	N	:	NEUTRAL
Y1E~Y4E	:	ELECTRONIC EXPANSION VALVE COIL	S1W	:	FORCED OPERATION ON/OFF SW (SW1)
V2~V5	:	VARISTOR	S2W	:	SELECT SW (SW2)
FU1, FU2, FU201	:	FUSE	S3W	:	WIRING ERROR CHECK SW (SW3)
HE, HL, HN			S4W	:	PRIORITY ROOM SETTING SW (SW4)
E, AC1, AC2			S5W	:	NIGHT QUIET MODE SETTING SW (SW5)
H1, H2, L1			SA1	:	SURGE ARRESTER
L2,	:	CONNECTOR	PCB	:	PRINTED CIRCUIT BOARD
MRM10, MRM20			DB1	:	DIODE BRIDGE
MRB, MRD			M1C	:	COMPRESSOR MOTOR
MRC/W	:	MAGNETIC RELAY	M1F	:	FAN MOTOR
R1T~R12T	:	THERMISTOR	L1R	:	REACTOR
S2~S102	:	CONNECTOR	Q1L	:	OVERLOAD PROTECTOR
H1P~H5P	:	PILOT LAMP	SPM	:	SYSTEM POWER MODULE
MID1~MID2	:	MOLDED INTERCONNECT DEVICE	CT1	:	CURRENT TRANSFORMER



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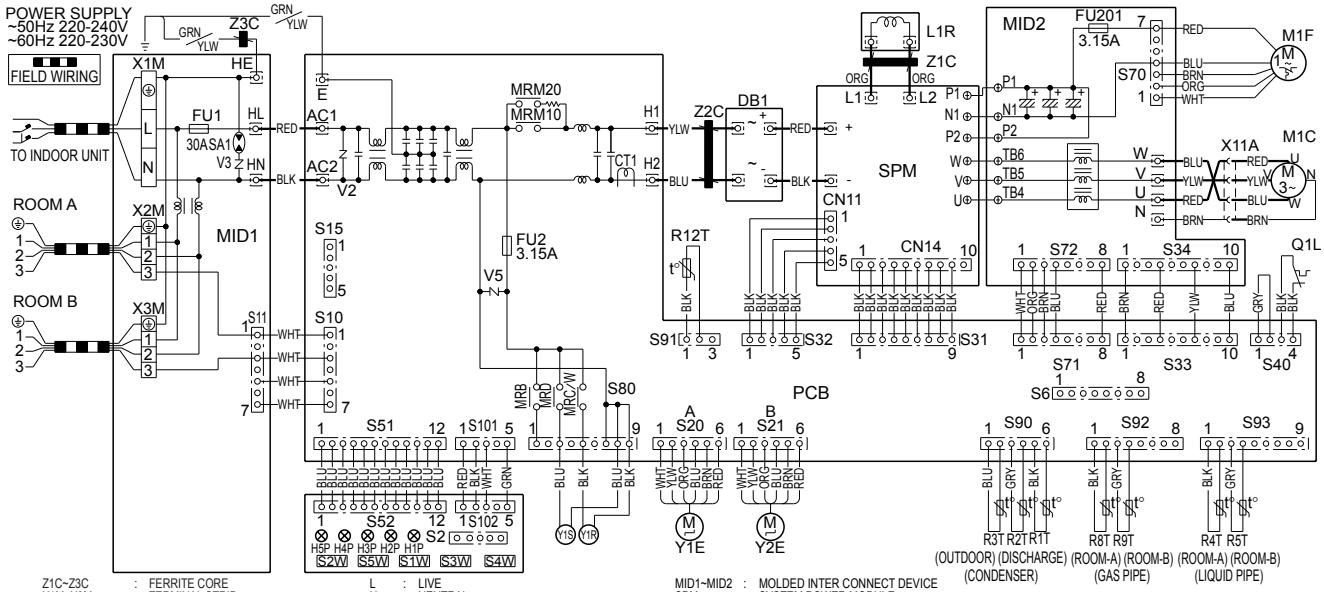
2.2.2 Heat Pump

2MXS52DVMB, 2AMX52DVMB

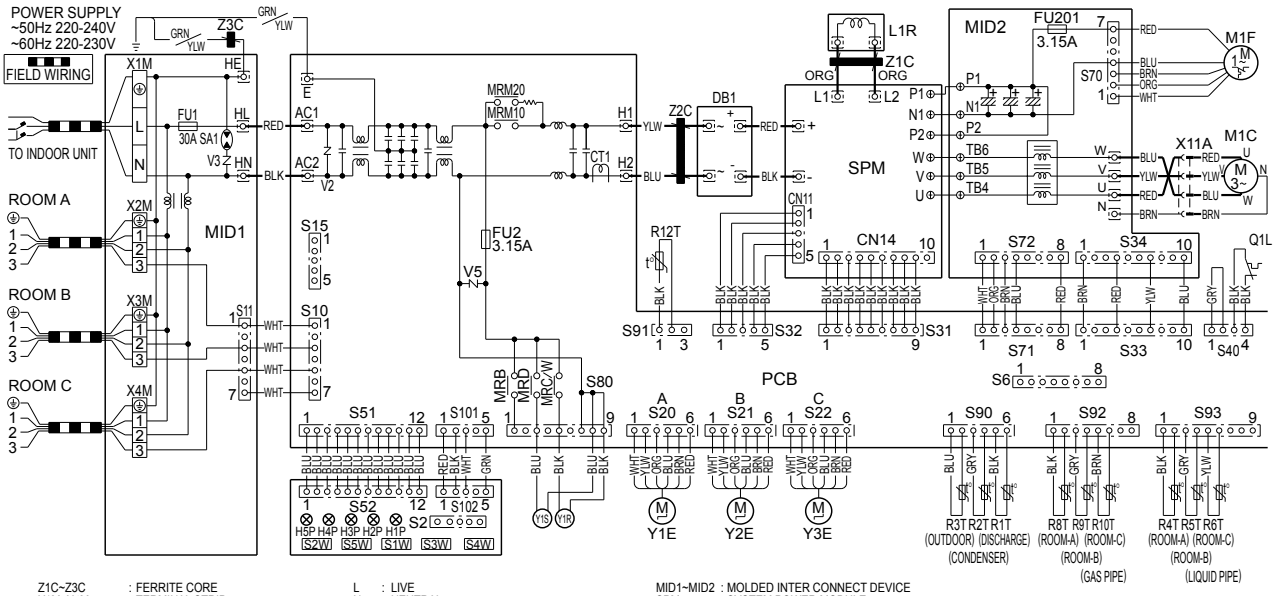


Z1C~Z3C : FERRITE CORE
X1M~X3M : TERMINAL STRIP
Y1E~Y2E : ELECTRONIC EXPANSION VALVE COIL
V2~V5 : VARISTOR
FU1, FU2, FU201 : FUSE
HE, HL, HN
E, AC1, AC2
H1, H2, L1
L2, : CONNECTOR
MRM10 : MRM20
MRB, MRD
MRC/W : MAGNETIC RELAY
R1T~R12T : THERMISTOR
S2~S102 : CONNECTOR
H1P~H5Pq : PILOT LAMP

L : LIVE
N : NEUTRAL
S1W : FORCED OPERATION ON/OFF SW(SW1)
S2W : FORCED OPERATION MODE SELECT SW(SW2)
S3W : WIRING ERROR CHECK SW(SW3)
S4W : PRIORITY ROOM SETTING SW(SW4)
S5W : NIGHT QUIET MODE SETTING SW(SW5)
SA1 : SURGE ARRESTER
Y1R : REVERSING SOLENOID VALVE COIL
Y1S : DEFROST SOLENOID VALVE COIL
PCB : PRINTED CIRCUIT BOARD
DB1 : DIODE BRIDGE
M1C : COMPRESSOR MOTOR
M1F : FAN MOTOR
L1R : REACTOR
Q1L : OVERLOAD PROTECTOR
CT1 : CURRENT TRANSFORMER

MID1~MID2 : MOLDED INTER CONNECT DEVICE
SPM : SYSTEM POWER MODULE

3MXS52DVMB, 3AMX52CVMB

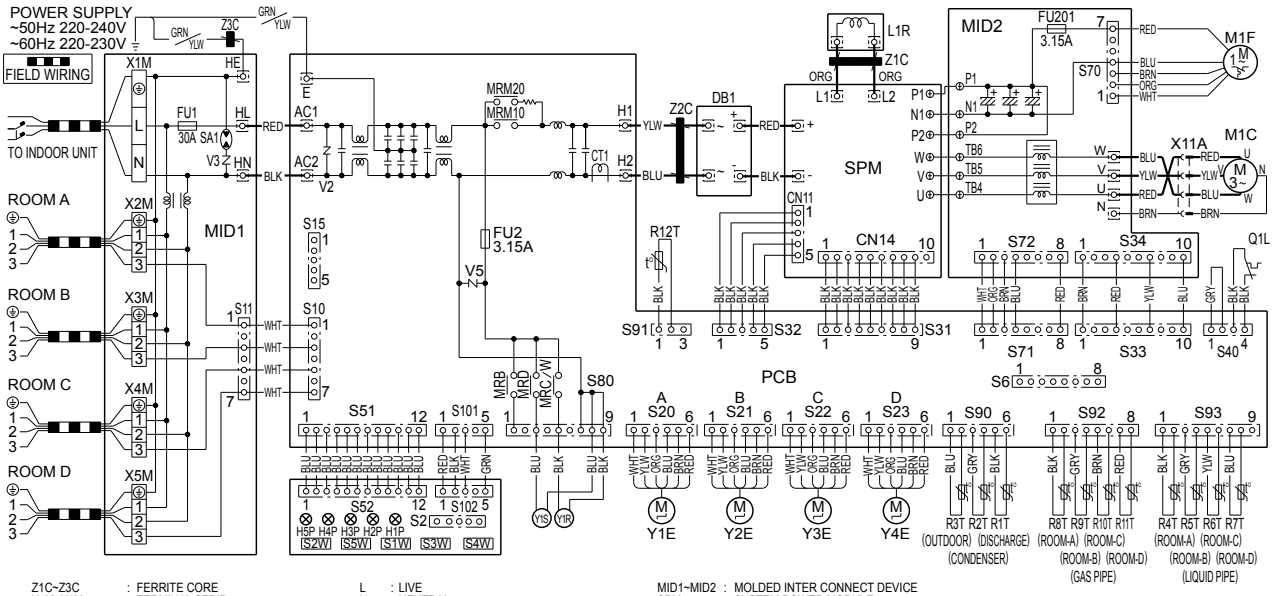


Z1C~Z3C : FERRITE CORE
X1M~X4M : TERMINAL STRIP
Y1E~Y3E : ELECTRONIC EXPANSION VALVE COIL
V2~V5 : VARISTOR
FU1, FU2, FU201 : FUSE
HE, HL, HN
E, AC1, AC2
H1, H2, L1
L2, : CONNECTOR
MRM10, MRM20
MRB, MRD
MRC/W : MAGNETIC RELAY
R1T~R12T : THERMISTOR
S2~S102 : CONNECTOR
H1P~H5P : PILOT LAMP□

L : LIVE
N : NEUTRAL
S1W : FORCED OPERATION ON/OFF SW(SW1)
S2W : FORCED OPERATION MODE SELECT SW(SW2)
S3W : WIRING ERROR CHECK SW(SW3)
S4W : PRIORITY ROOM SETTING SW(SW4)
S5W : NIGHT QUIET MODE SETTING SW(SW5)
SA1 : SURGE ARRESTER
Y1R : REVERSING SOLENOID VALVE COIL
Y1S : DEFROST SOLENOID VALVE COIL
PCB : PRINTED CIRCUIT BOARD
DB1 : DIODE BRIDGE
M1C : COMPRESSOR MOTOR
M1F : FAN MOTOR
L1R : REACTOR
Q1L : OVERLOAD PROTECTOR
CT1 : CURRENT TRANSFORMER

MID1~MID2 : MOLDED INTER CONNECT DEVICE
SPM : SYSTEM POWER MODULE

4MXS68/80DVMB



Z1C~Z3C	:	FERRITE CORE
X1M~X5M	:	TERMINAL STRIP
Y1E~Y4E	:	ELECTRONIC EXPANSION VALVE COIL
V2~V5	:	VARISTOR
FU1, FU2, FU201	:	FUSE
HE, HL, HN		
E, AC1, AC2		
H1, H2, L1		
L2, MRM10, MRM20	:	CONNECTOR
MRB, MRD		
MRC/W	:	MAGNETIC RELAY
R1T~R12T	:	THERMISTOR
S2S~102	:	CONNECTOR
H1P~H5P	:	PILOT LAMP

L	:	LIVE
N	:	NEUTRAL
S1W	:	FORCED OPERATION ON/OFF SW(SW1)
S2W	:	FORCED OPERATION MODE SELECT SW(SW2)
S3W	:	WIRING ERROR CHECK SW(SW3)
S4W	:	PRIORITY ROOM SETTING SW(SW4)
S5W	:	NIGHT QUIET MODE SETTING SW(SW5)
SA1	:	SURGE ARRESTER
Y1R	:	REVERSING SOLENOID VALVE COIL
Y1S	:	DEFROST SOLENOID VALVE COIL
PCB	:	PRINTED CIRCUIT BOARD
DB1	:	DIODE BRIDGE
M1C	:	COMPRESSOR MOTOR
M1F	:	FAN MOTOR
L1R	:	REACTOR
Q1L	:	OVERLOAD PROTECTOR
CT1	:	CURRENT TRANSFORMER

MID1~MID2	:	MOLDED INTER CONNECT DEVICE
SPM	:	SYSTEM POWER MODULE

ASSIGNMENTS OF TERMINALS OF THE COMP.

3D034312F

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Warning

- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorized parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

For any inquiries, contact your local distributor.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided and choose an outdoor unit with anti-corrosion treatment.

The air conditioners manufactured by Daikin Industries have received **ISO 9001** certification for quality assurance.

Certificate Number. **JMI-0107**
JQA-0495
JQA-1452

All Daikin Industries locations and subsidiaries in Japan have received environmental management system standard **ISO 14001** certification.

Daikin Industries, Ltd.
Domestic Group
Certificate Number. EC99J2044

About ISO 14001

ISO 14001 is the standard defined by the International Organization for Standardization (ISO) relating to environmental management systems. Our group has been acknowledged by an internationally accredited compliance organisation as having an appropriate programme of environmental protection procedures and activities to meet the requirements of ISO 14001.

Dealer

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•The specifications, designs, and information in this brochure are subject to change without notice.

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