DAIKIN

Si01 - 718

Service Manual

SPLIT Pair
F-Series

[Applied Models]

- **Non-Inverter Pair : Cooling Only**

Non Inverter Pair
F-Series

●Cooling Only

Indoor Unit

FT50FVM
FT60FVM

Outdoor Unit

R50BV1	**R50BVL**	**R50CV1A**
R60BV1	**R60BVL**	**R60CV1A**

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 the item for which caution must be exercised.
The pictogram shows the item to which attention must be paid.

◯ This symbol indicates the prohibited action.
The prohibited item or action is shown in the illustration or near the symbol.

● This symbol indicates the action that must be taken, or the instruction.
The instruction is shown in the illustration 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 Cautions Regarding Safety of Workers

⚠ Warning	
Be sure to disconnect the power cable plug from the plug socket before disassembling the equipment for repair. Working on the equipment that is connected to the power supply may 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 is discharged during the repair work, do not touch the discharged refrigerant gas. The refrigerant gas may cause frostbite.	
When disconnecting the suction or discharge pipe of the compressor at the welded section, evacuate 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 may cause injury.	
If the refrigerant gas leaks during the repair work, ventilate the area. The refrigerant gas may 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 may 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 may cause an electrical shock or fire.	

Warning	
Be sure to wear a safety helmet, gloves, and a safety belt when working at a high place (more than 2m). Insufficient safety measures may cause a fall accident.	
In case of R410A refrigerant models, be sure to use pipes, flare nuts and tools for the exclusive use of the R410A refrigerant. The use of materials for R22 refrigerant models may cause a serious accident such as a damage of refrigerant cycle as well as an equipment failure.	

Caution	
Do not repair the electrical components with wet hands. Working on the equipment with wet hands may cause an electrical shock.	
Do not clean the air conditioner by splashing water. Washing the unit with water may 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.	
Be sure to conduct repair work with appropriate tools. The use of inappropriate tools may cause injury.	
Be sure to check that the refrigerating cycle section has cooled down enough before conducting repair work. Working on the unit when the refrigerating cycle section is hot may cause burns.	
Use the welder in a well-ventilated place. Using the welder in an enclosed room may cause oxygen deficiency.	

1.1.2 Cautions Regarding Safety of Users

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 may cause an electrical shock, excessive heat generation or fire.	
If the power cable and lead wires have scratches or deteriorated, be sure to replace them. Damaged cable and wires may cause an electrical shock, excessive heat generation or fire.	
Do not use a joined power cable or extension cable, or share the same power outlet with other electrical appliances, since it may cause an electrical shock, excessive heat generation or fire.	
Be sure to use an exclusive power circuit for the equipment, and follow the local 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 may cause an electrical shock or fire.	
Be sure to use the specified cable for wiring 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 may cause excessive heat generation or fire.	
When wiring 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 may cause an electrical shock, excessive heat generation or fire.	
Do not damage or modify the power cable. Damaged or modified power cable may cause an electrical shock or fire. Placing heavy items on the power cable, and heating or pulling the power cable may damage the cable.	
Do not mix air or gas other than the specified refrigerant (R410A / R22) 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 leaking point and repair it before charging the refrigerant. After charging refrigerant, make sure that there is no refrigerant leak. If the leaking point 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 may generate toxic gases when it contacts flames, such as fan and other heaters, stoves and ranges.	
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 may fall and cause injury.	

Warning	
Check to make sure that the power cable plug is not dirty or loose, then insert the plug into a power outlet securely. If the plug has dust or loose connection, it may cause an electrical shock or fire.	
Be sure to install the product correctly by using the provided standard installation frame. Incorrect use of the installation frame and improper installation may cause the equipment to fall, resulting in injury.	For unitary type only 
Be sure to install the product securely in the installation frame mounted on the window frame. If the unit is not securely mounted, it may fall and cause injury.	For unitary type only 
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 the combustible gas leaks and remains around the unit, it may cause a fire.	
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 may cause excessive heat generation, fire or an electrical shock.	
If the installation platform or frame has corroded, replace it. Corroded installation platform or frame may cause the unit to fall, resulting in injury.	
Check the grounding, and repair it if the equipment is not properly grounded. Improper grounding may cause an electrical shock.	

Caution	
Be sure to measure the insulation resistance after the repair, and make sure that the resistance is 1 MΩ or higher. Faulty insulation may cause an electrical shock.	
Be sure to check the drainage of the indoor unit after the repair. Faulty drainage may cause the water to enter the room and wet the furniture and floor.	
Do not tilt the unit when removing it. The water inside the unit may spill and wet the furniture and floor.	
Be sure to install the packing and seal on the installation frame properly. If the packing and seal are not installed properly, water may enter the room and wet the furniture and floor.	For unitary type only 

1.2 Used 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:

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

Category	Functions	FT50/60FVM R50/60BV1	FT50/60FVM R50/60BVL	Category	Functions	FT50/60FVM R50/60BV1	FT50/60FVM R50/60BVL
Basic Function	Inverter (with Inverter Power Control)	—	—	Health & Clean	Air Purifying Filter	—	—
	Operation Limit for Cooling (°CDB)	19.4 ~46	19.4 ~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	—	—		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 Quiet Operation	—	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○	○
	Night Quiet Mode (Automatic)	—	—		Flexible Voltage Correspondence	—	—
	Outdoor Unit Quiet Operation (Manual)	—	—		High Ceiling Application	—	—
	Intelligent Eye	—	—		Chargeless	10m	10m
	Quick Warming Function	—	—		Either Side Drain (Right or Left)	○	○
	Hot-Start Function	—	—		Power Selection	—	—
	Automatic Defrosting	—	—	Remote Control	5-Rooms Centralized Controller (Option)	○	○
Operation	Automatic Operation	—	—				
	Programme Dry Function	○	○		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	○	○
	Fan Only	○	○				
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	○	○				
	Inverter Powerful Operation	—	—		Remote Control Adaptor (Normal Open Contact) (Option)	○	○
	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

Category	Functions	FT50/60FVM R50/60CV1A	Category	Functions	FT50/60FVM R50/60CV1A
Basic Function	Inverter (with Inverter Power Control)	—	Health & Clean	Air Purifying Filter	—
	Operation Limit for Cooling (°CDB)	19.4 ~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	—		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 Quiet Operation	—	Flexibility	Multi-Split / Split Type Compatible Indoor Unit	○
	Night Quiet Mode (Automatic)	—		Flexible Voltage Correspondence	—
	Outdoor Unit Quiet Operation (Manual)	—		High Ceiling Application	—
	Intelligent Eye	—		Chargeless	30m
	Quick Warming Function	—		Either Side Drain (Right or Left)	○
	Hot-Start Function	—		Power Selection	—
	Automatic Defrosting	—	Remote Control	5-Rooms Centralized Controller (Option)	○
Operation	Automatic Operation	—			
	Programme Dry Function	○		Remote Control Adaptor (Normal Open-Pulse Contact) (Option)	○
	Fan Only	○			
Lifestyle Convenience	New Powerful Operation (Non-Inverter)	○			
	Inverter Powerful Operation	—		Remote Control Adaptor (Normal Open Contact) (Option)	○
	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

Part 2
Specifications

1. Specifications

50Hz 220-230-240V

Models	Indoor Units		FT50FVM	FT60FVM
	Outdoor Units		R50BV1	R60BV1
Capacity (Rated)		kW	5.3	6.6
		Btu/h	18,090	22,530
		kcal/h	4,560	5,630
Running Current (Rated)		A	7.9-7.6-7.2	11.6-11.1-10.6
Power Consumption (Rated)		W	1,650	2,460
Power Factor		%	94.9-94.4-95.5	96.4-96.4-96.7
COP (Rated)		W/W	3.21	2.68
Piping Connections	Liquid	mm	ϕ 6.4	ϕ 6.4
	Gas	mm	ϕ15.9	ϕ15.9
	Drain	mm	ϕ18.0	ϕ18.0
Heat Insulation			Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Max. Interunit Piping Length		m	30	30
Max. Interunit Height Difference		m	15	15
Chargeless		m	10	10
Amount of Additional Charge of Refrigerant		g/m	20	20
Indoor Units			**FT50FVM**	**FT60FVM**
Front Panel Color			White	White
Air Flow Rate	m³/min (cfm)	H	16.2 (572)	17.5 (618)
		M	14.0 (494)	15.0 (530)
		L	11.9 (420)	12.5 (441)
Fan	Type		Cross Flow Fan	Cross Flow Fan
	Motor Output	W	43	43
	Speed	Steps	5 Steps, Auto	5 Steps, Auto
Air Direction Control			Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter			Removable/Washable/Mildew Proof	Removable/Washable/Mildew Proof
Running Current		A	0.19-0.18-0.17	0.21-0.20-0.19
Power Consumption		W	40	45
Power Factor		%	95.7-96.6-98.0	97.4-97.8-98.7
Temperature Control			Microcomputer Control	Microcomputer Control
Dimensions (HxWxD)		mm	290x1,050x238	290x1,050x238
Packaged Dimensions (HxWxD)		mm	337x1,147x366	337x1,147x366
Weight		kg	12	12
Gross Weight		kg	17	17
Operation Sound	H/M/L	dBA	45/41/35	47/42/36
Outdoor Units			**R50BV1**	**R60BV1**
Casing Color			Ivory White	Ivory White
Compressor	Type		Hermetically Sealed Rotary Type	Hermetically Sealed Rotary Type
	Model		RC60V1TNRT	NH41VMDT
	Motor Output	W	1,500	2,200
Refrigerant Oil	Type		SUNISO 4GSD. I.	MS-32
	Charge	L	0.85	1.20
Refrigerant	Type		R-22	R-22
	Charge	kg	1.35	1.70
Air Flow Rate	m³/min (cfm)	H	40.0-40.5-41.0 (1,412-1,430-1,448)	40.0-40.5-41.0 (1,412-1,430-1,448)
		L	— (—)	23.3-24.8-26.2 (823-876-925)
Fan	Type		Propeller	Propeller
	Motor Output	W	53	53
Running Current (Rated)		A	7.71-7.42-7.03	11.39-10.90-10.41
Power Consumption (Rated)		W	1,610	2,415
Power Factor		%	94.9-94.3-95.4	96.4-96.3-96.7
Starting Current		A	32-33.5-35	55-57.5-60
Dimensions (HxWxD)		mm	685x800x300	685x800x300
Packaged Dimensions (HxWxD)		mm	732x955x390	732x955x390
Weight		kg	49	61
Gross Weight		kg	54	66
Operation Sound		dBA	54-54-55	54-54-55
Drawing No.			3D056213	3D056215

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

Cooling	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB/24°CWB	7.5m

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

60Hz 220V

Models	Indoor Units			FT50FVM	FT60FVM
	Outdoor Units			R50BVL	R60BVL
Capacity (Rated)			kW	5.7	6.9
			Btu/h	19,460	23,560
			kcal/h	4,900	5,930
Running Current (Rated)			A	10.6	12.5
Power Consumption (Rated)			W	2,210	2,710
Power Factor			%	94.8	98.5
COP (Rated)			W/W	2.58	2.55
Piping Connections	Liquid		mm	ϕ 6.4	ϕ 6.4
	Gas		mm	ϕ15.9	ϕ15.9
	Drain		mm	ϕ18.0	ϕ18.0
Heat Insulation				Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Max. Interunit Piping Length			m	30	30
Max. Interunit Height Difference			m	15	15
Chargeless			m	10	10
Amount of Additional Charge of Refrigerant			g/m	20	20
Indoor Units				**FT50FVM**	**FT60FVM**
Front Panel Color				White	White
Air Flow Rate		m³/min (cfm)	H	17.9 (632)	19.0 (671)
			M	14.8 (523)	15.8 (558)
			L	11.9 (420)	12.5 (441)
Fan	Type			Cross Flow Fan	Cross Flow Fan
	Motor Output		W	43	43
	Speed		Steps	5 Steps, Auto	5 Steps, Auto
Air Direction Control				Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter				Removable/Washable/Mildew Proof	Removable/Washable/Mildew Proof
Running Current			A	0.19	0.21
Power Consumption			W	40	45
Power Factor			%	95.7	97.4
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		dBA	45/41/35	47/42/36
Outdoor Units				**R50BVL**	**R60BVL**
Casing Color				Ivory White	Ivory White
Compressor	Type			Hermetically Sealed Rotary Type	Hermetically Sealed Rotary Type
	Model			RC60VHTNRT	RC75VHTR2T
	Motor Output		W	1,500	1,800
Refrigerant Oil	Type			SUNISO 4GSD.I.	SUNISO 4GSD.I.
	Charge		L	0.85	1.00
Refrigerant	Type			R-22	R-22
	Charge		kg	1.25	1.60
Air Flow Rate	m³/min (cfm)		H	30.0 (1,059)	44.0 (1,554)
			L	— (—)	20.3 (717)
Fan	Type			Propeller	Propeller
	Motor Output		W	45	53
Running Current (Rated)			A	10.41	12.29
Power Consumption (Rated)			W	2,170	2,665
Power Factor			%	94.8	98.6
Starting Current			A	42	47
Dimensions (H×W×D)			mm	540×750×270	635×800×300
Packaged Dimensions (H×W×D)			mm	609×940×360	732×955×390
Weight			kg	41	51
Gross Weight			kg	45	56
Operation Sound			dBA	52	55
Drawing No.				3D055911	3D055912

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

Cooling	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB/24°CWB	7.5m

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

50Hz 220-230-240V

Models	**Indoor Units**		**FT50FVM**	**FT60FVM**
	Outdoor Units		**R50CV1A**	**R60CV1A**
Capacity (Rated)		kW	5.3	6.6
		Btu/h	18,100	22,500
		kcal/h	4,560	5,680
Running Current (Rated)		A	7.4-7.3-7.2	11.0-10.9-10.8
Power Consumption (Rated)		W	1,600	2,390
Power Factor		%	98.3-95.3-92.6	98.8-95.3-92.2
COP (Rated)		W/W	3.31	2.76
Piping Connections	Liquid	mm	ϕ 6.4	ϕ 6.4
	Gas	mm	ϕ15.9	ϕ15.9
	Drain	mm	ϕ18.0	ϕ18.0
Heat Insulation			Both Liquid and Gas Pipes	Both Liquid and Gas Pipes
Max. Interunit Piping Length		m	30	30
Max. Interunit Height Difference		m	15	15
Chargeless		m	10	10
Amount of Additional Charge of Refrigerant		g/m	20	20
Indoor Units			**FT50FVM**	**FT60FVM**
Front Panel Color			White	White
Air Flow Rate	m³/min (cfm)	H	16.2 (572)	17.5 (618)
		M	14.0 (494)	15.0 (530)
		L	11.9 (420)	12.5 (441)
Fan	Type		Cross Flow Fan	Cross Flow Fan
	Motor Output	W	43	43
	Speed	Steps	5 Steps, Auto	5 Steps, Auto
Air Direction Control			Right, Left, Horizontal, Downward	Right, Left, Horizontal, Downward
Air Filter			Removable/Washable/Mildew Proof	Removable/Washable/Mildew Proof
Running Current		A	0.19-0.18-0.17	0.21-0.20-0.19
Power Consumption		W	40	45
Power Factor		%	95.7-96.6-98.0	97.4-97.8-98.7
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	dBA	43/39/35	46/41/36
Outdoor Units			**R50CV1A**	**R60CV1A**
Casing Color			Ivory White	Ivory White
Compressor	Type		Hermetically Sealed Rotary Type	Hermetically Sealed Rotary Type
	Model		RC60V1TNRT	NH41VMDT
	Motor Output	W	1,500	2,200
Refrigerant Oil	Type		SUNISO 4GSD. I.	MS-32
	Charge	L	0.85	1.20
Refrigerant	Type		R-22	R-22
	Charge	kg	1.35	1.70
Air Flow Rate	m³/min (cfm)	H	40.0-40.5-41.0 (1,412-1,430-1,448)	40.0-40.5-41.0 (1,412-1,430-1,448)
		L	— (—)	23.3-24.8-26.2 (823-876-925)
Fan	Type		Propeller	Propeller
	Motor Output	W	53	53
Running Current (Rated)		A	7.21-7.12-7.03	10.79-10.70-10.61
Power Consumption (Rated)		W	1,560	2,345
Power Factor		%	98.3-95.3-92.5	98.8-95.3-92.1
Starting Current		A	32-33.5-35	55-58-60
Dimensions (H×W×D)		mm	685×800×300	685×800×300
Packaged Dimensions (H×W×D)		mm	732×955×390	732×955×390
Weight		kg	49	61
Gross Weight		kg	54	66
Operation Sound		dBA	54-54-55	54-54-55
Drawing No.			3D056214	3D056216

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

Cooling	Piping Length
Indoor ; 27°CDB/19°CWB Outdoor ; 35°CDB/24°CWB	7.5m

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

Part 3
Printed Circuit Board Connector Wiring Diagram

1. Printed Circuit Board Connector Wiring Diagram

1.1 Indoor Unit

1.1.1 FT50/60FVM

Connectors

PCB (1) (Control PCB)

1)	S1	Connector for DC fan motor
2)	S6	Connector for swing motor (horizontal blades)
3)	S8	Connector for swing motor (vertical blades) (FT50/60DSG model)
4)	S21	Connector for centralized control (HA)
5)	S26	Connector for buzzer PCB
6)	S28	Connector for signal receiver PCB
7)	S32	Connector for heat exchanger thermistor
8)	H1, H2, H3	Connector for terminal strip

PCB (2) (Signal Receiver PCB)

1)	S29	Connector for control PCB

PCB (3) (Buzzer PCB)

1)	S27	Connector for control PCB
2)	S38	Connector for display PCB

PCB (4) (Display PCB)

1)	S37	Connector for buzzer PCB

Note: Other designations

PCB (1) (Control PCB)

1)	V1, V2	Varistor
2)	JA	Address setting jumper
	JB	Fan speed setting when compressor is OFF on thermostat
	JC	Power failure recovery function
		∗ Refer to page 87 for detail.
3)	FU1	Fuse (3.15A)
4)	LED A	LED for service monitor (green)

PCB (2) (Signal Receiver PCB)

1)	SW1	ON/OFF switch

PCB (3) (Buzzer PCB)

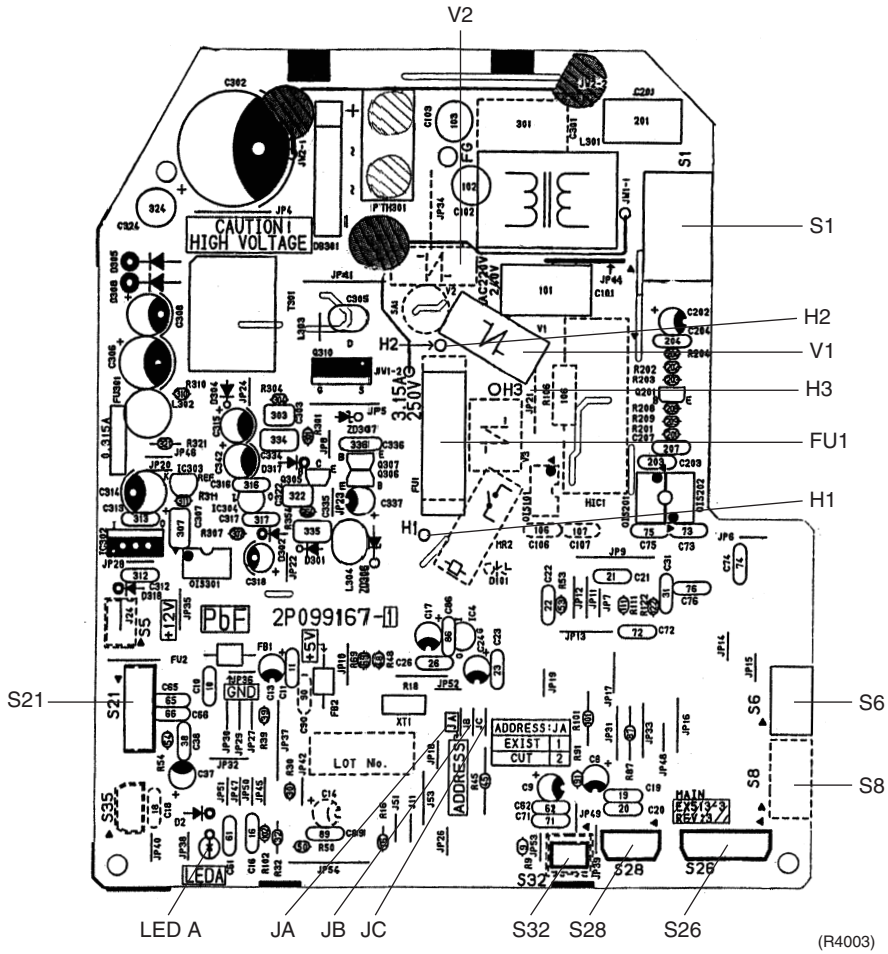
1)	RTH1	Room temperature thermistor

PCB (4) (Display PCB)

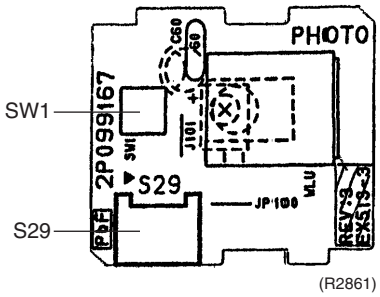
1)	LED1	LED for operation (green)
2)	LED2	LED for timer (yellow)

PCB Detail

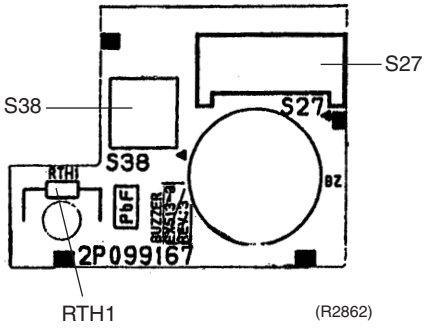
PCB(1): Control PCB



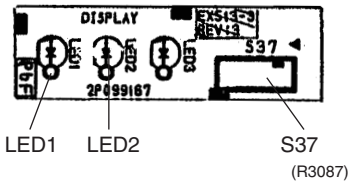
PCB(2): Signal Receiver PCB



PCB(3): Buzzer PCB



PCB(4): Display PCB



Part 4
Details of Functions

1. Main Functions

1.1 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 and dry mode.

Cooling Mode

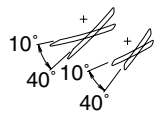
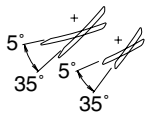
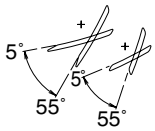
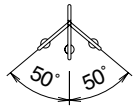
During cooling mode, the flap retracts into the indoor unit. Then, cool air can be blown far and pervaded all over the room.

Wide-Angle Louvres

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

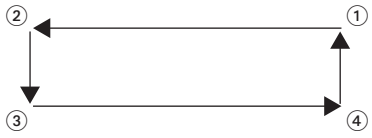
Auto-Swing

The following table explains the auto-swing process for cooling, dry, and fan :

Vertical Swing (up and down)			Horizontal Swing (right and left)
Cooling	Dry	Fan	
 (R2814)	 (R2815)	 (R2816)	 (R2817)

3-D Airflow

- 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)

1.2 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 rotation speed control and Hall IC control.

For more information about Hall IC, refer to the troubleshooting for fan motor on page 52.

Fan Speed Steps

Fan speed control contains 9 steps: LLL, LL, SL, L, ML, M, MH, H and HH.
In automatic operation, the step “SL” is not available.

Step	Cooling	Dry mode
LL	 (R2818)	800 - 950 rpm
L		
ML		
M		
MH		
H		
HH (Powerful)		

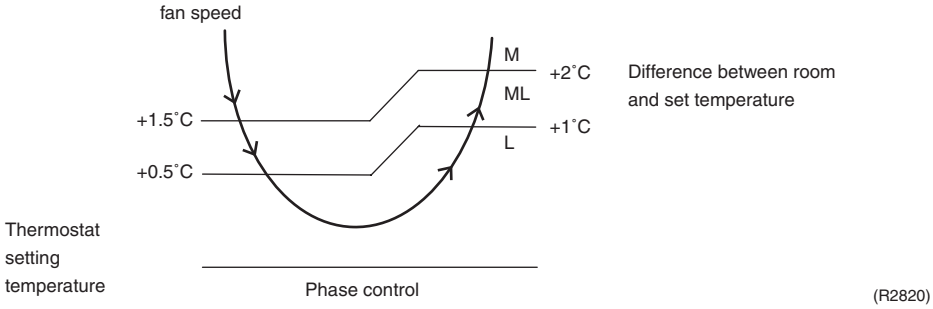
= Within this range the airflow rate is automatically controlled when the FAN setting button is set to automatic.

Note:

1. During powerful operation, fan operates H tap + 90 rpm.
2. In time of thermostat OFF, the fan rotates at the set tap.

Automatic Air Flow Control for Cooling

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



1.3 Thermostat Control

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

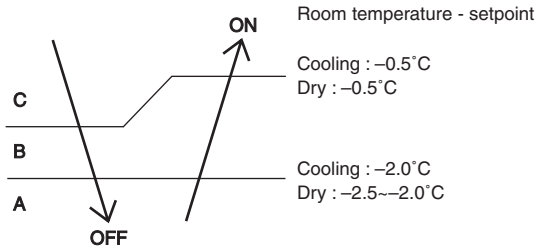
Thermostat OFF Condition

- 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.)

Cooling / Dry



(R4668)

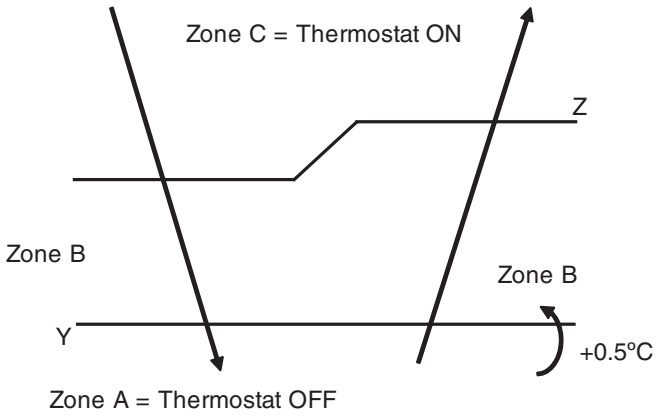
1.4 Programme Dry Function

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	Set temperature X	Thermostat OFF point Y	Thermostat ON point Z
24°C or more	Room temperature at startup	X – 2.5°C	X – 0.5°C or Y + 0.5°C (zone B) continues for 10 min.
23.5°C ~ 18°C		X – 2.0°C	X – 0.5°C or Y + 0.5°C (zone B) continues for 10 min.
17.5°C ~	18°C	X – 2.0°C	X – 0.5°C = 17.5°C or Y + 0.5°C (zone B) continues for 10 min.



(R6841)

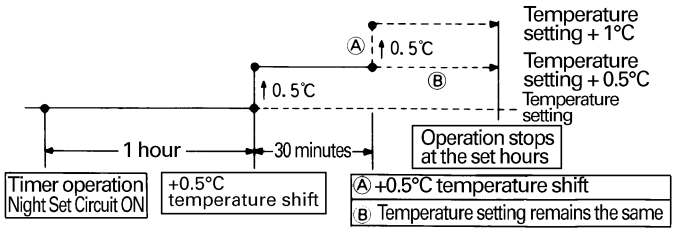
1.5 Night Set Mode

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 cooling the room at the set temperature for the first one hour, then automatically raises the temperature setting slightly for economical operations. This prevents excessive cooling 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)

1.6 POWERFUL Operation

Outline

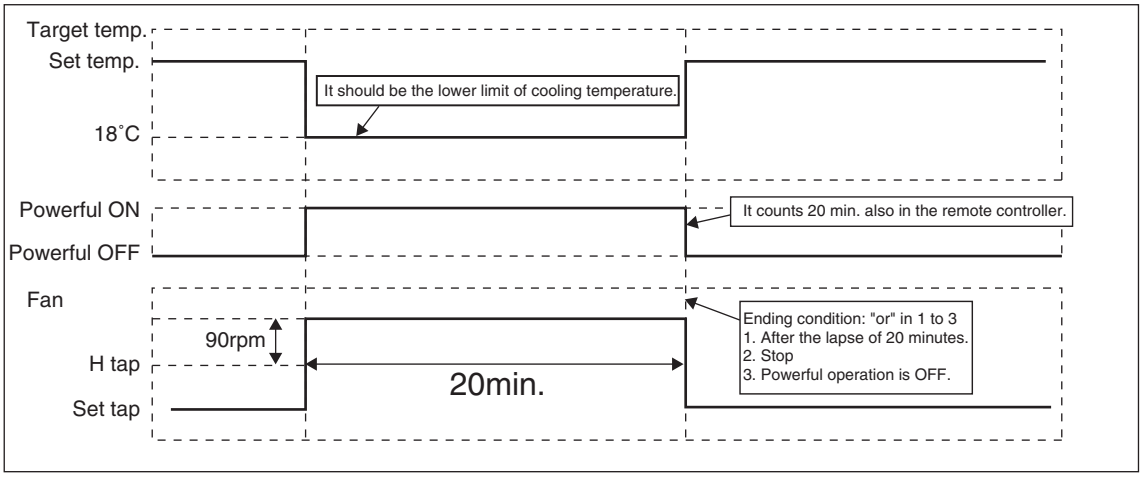
In order to exploit the cooling capacity to full extent, operate the air conditioner by increasing the indoor fan rotating speed and the compressor frequency.

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.

Operation mode	Fan speed	Target set temperature
Cooling	H tap + 90 rpm	18°C
Dry	Dry rotating speed + 50 rpm	Normally targeted temperature in dry operation; Approx. –2°C
Fan	H tap + 90 rpm	—

Ex.) : Powerful operation in cooling mode.



(R4834)

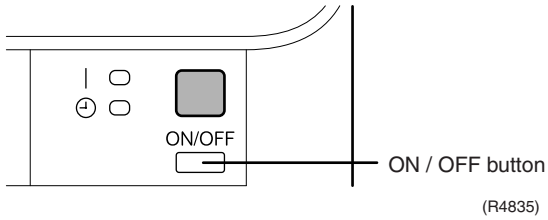
1.7 Other Functions

1.7.1 Signal Receiving Sign

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

1.7.2 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.



- 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
COOL	22°C	AUTO

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

1.7.3 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.

1.7.4 Mold Proof Air Filter (Prefilter)

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.

1.7.5 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.

1.7.6 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 standby function is activated.

Part 5
Operation Manual

1. System Configuration

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 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. Instructions

2.1 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 WARNING and CAUTION. 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 follow the instructions.

Be sure to earth the air conditioner.

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

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

⚠ 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 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 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 alminum 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 place objects in direct proximity of the outdoor unit and do not let leaves and other debris accumulate around the unit.
  Leaves are a hotbed for small animals which can enter the unit. Once in the unit, such animals can cause malfunctions, smoke or fire when making contact with electrical parts.

- 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.

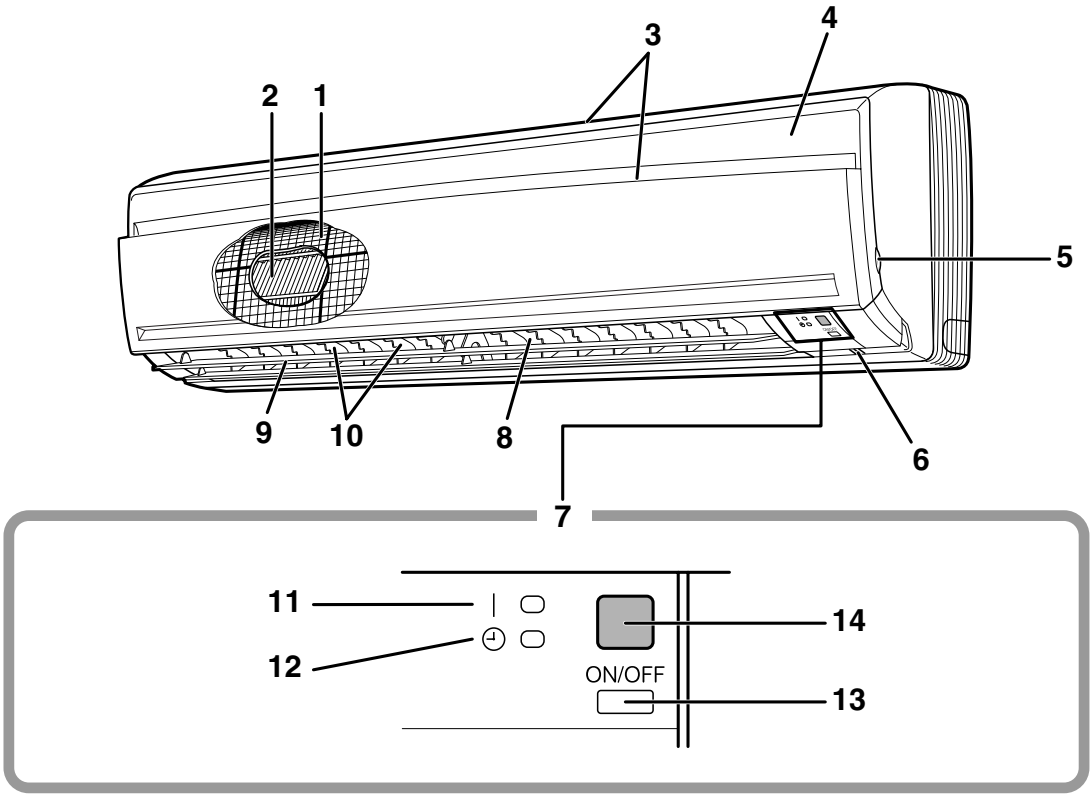
- Relocating the air conditioner requires specialized knowledge and skills. Please consult the dealer if relocation is necessary for moving or remodeling.

3

2.2 Names of Parts

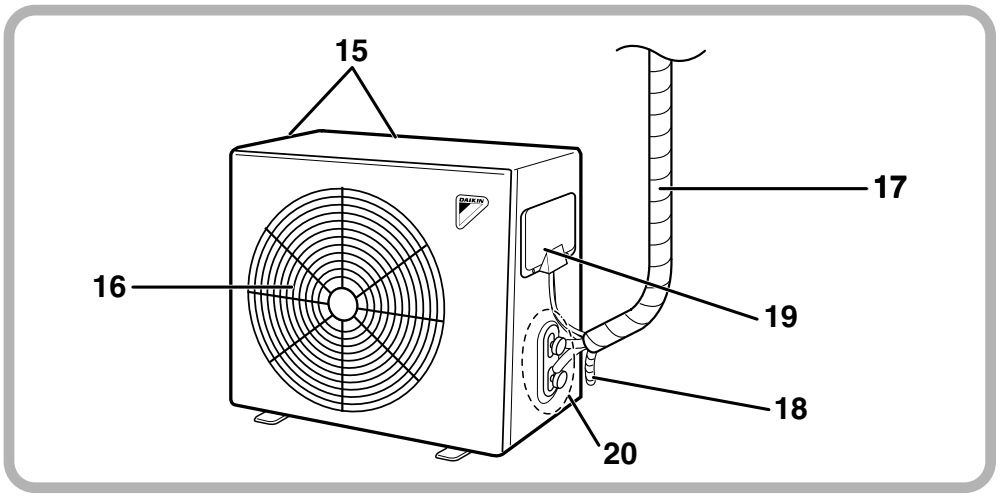
Names of parts

■ Indoor Unit



4

■ Outdoor Unit



■ Indoor Unit

1. **Air filter**
2. **Titanium Apatite Photocatalytic Air-Purifying Filter**
3. **Air inlet**
4. **Front panel**
5. **Panel tab**
6. **Room temperature sensor:**
   - It senses the air temperature around the unit.
7. **Display**
8. **Air outlet**
9. **Flap (horizontal blade):** (page 12.)
10. **Louvers (vertical blades):**
    - The Louvers are inside of the air outlet. (page 12.)
11. **Operation lamp (green)**
12. **TIMER lamp (yellow):** (page 14.)
13. **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
COOL	22°C	AUTO

    - 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

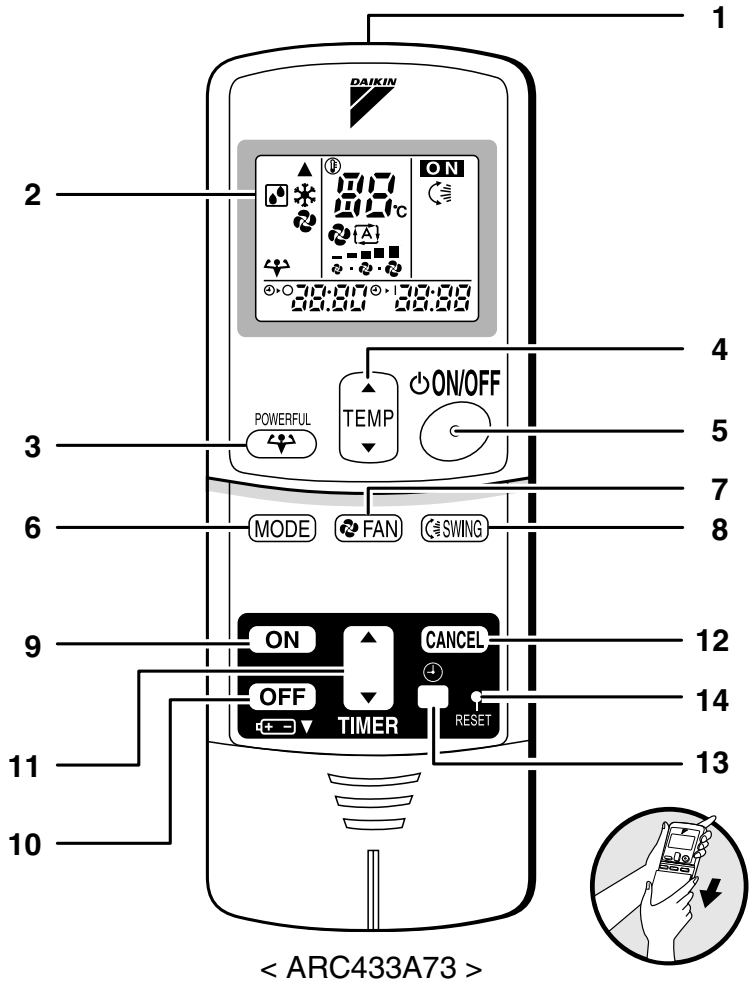
■ Outdoor Unit

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.
20. **Stop valve:**
    - Dew condensation may form on the stop valve during operation. This does not indicate any type of malfunction in the outdoor unit.

Appearance of the outdoor unit may differ from some models.

5

■ Remote Controller



< ARC433A73 >

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. **POWERFUL button:**
   POWERFUL operation (page 13.)
4. **TEMPERATURE adjustment buttons:**
   - It changes the temperature setting.
5. **ON/OFF button:**
   - Press this button once to start operation. Press once again to stop it.
6. **MODE selector button:**
   - It selects the operation mode. (DRY/COOL/FAN) (page 10.)
7. **FAN setting button:**
   - It selects the air flow rate setting.
8. **SWING button:** (page 12.)
   - Flap (Horizontal blade)
9. **ON TIMER button:** (page 15.)
10. **OFF TIMER button:** (page 14.)
11. **TIMER Setting button:**
    - It changes the time setting.
12. **TIMER CANCEL button:**
    - It cancels the timer setting.
13. **CLOCK button:** (page 9.)
14. **RESET button:**
    - Restart the unit if it freezes.
    - Use a thin object to push.

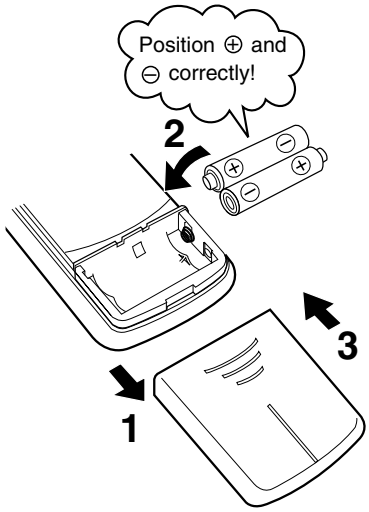
6

2.3 Preparation Before Operation

Preparation Before Operation

■ To set the batteries

1. **Slide the front cover to take it off.**
2. **Set two dry batteries (AAA).**
3. **Set the front cover as before.**



ATTENTION

■ **About batteries**

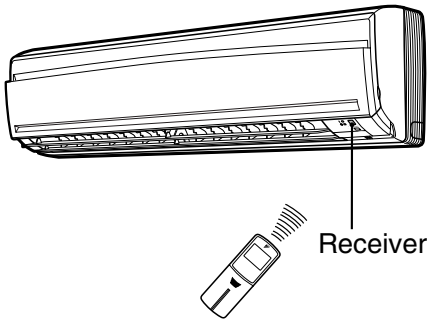
- When replacing the batteries, use batteries of the same type, and replace the two old batteries together.
- When the system is not used for a long time, take the batteries out.
- We recommend replacing once a year, although if the remote controller display begins to fade or if reception deteriorates, 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.

7

Preparation Before Operation

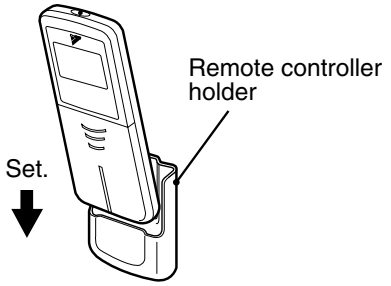
■ To operate the remote controller

- 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 7m.



■ 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, or similar location with the screws procured locally.**
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 controller 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.

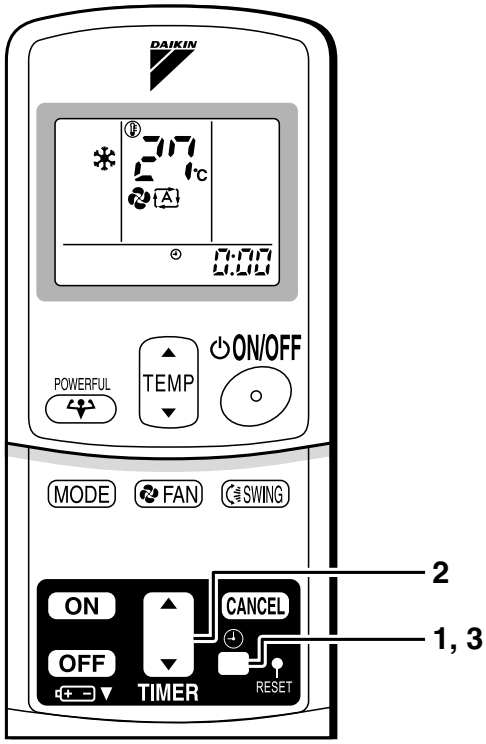
   ◷ blinks.

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 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 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

■ **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.

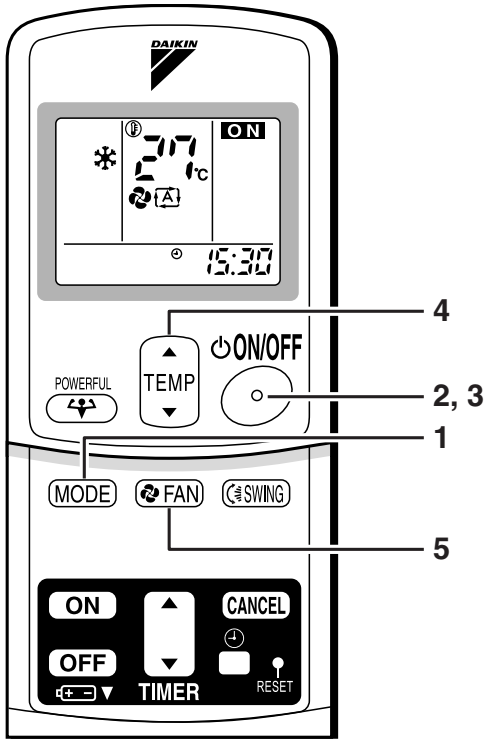
Mode	Operating conditions	If operation is continued out of this range
COOL	Outdoor temperature: 20 to 46°C Indoor temperature: 18 to 32°C Indoor humidity: 80% max.	• A safety device may work to stop the operation. • Condensation may occur on the indoor unit and drip.
DRY	Outdoor temperature: 20 to 46°C 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.

2.4 DRY · COOL · FAN Operation

DRY · COOL · 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

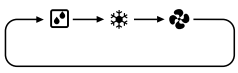
1. Press "MODE selector button" and select a operation mode.

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

: DRY

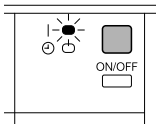
: COOL

: FAN



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

NOTE

■ **Note on COOL operation**
- This air conditioner cools the room by blowing the hot air in the room outside, so if the outside temperature is high, performance drops.

■ **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.

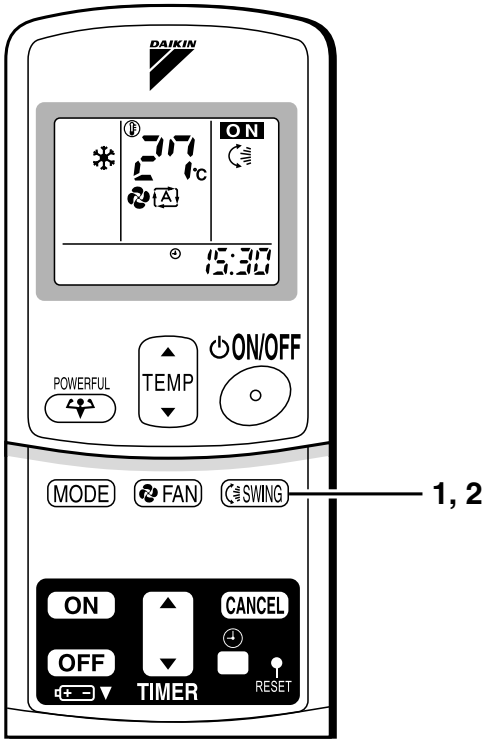
■ **Note on air flow rate setting**
- At smaller air flow rates, the cooling effect is also smaller.

11

2.5 Adjusting the Air Flow Direction

Adjusting the Air Flow Direction

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

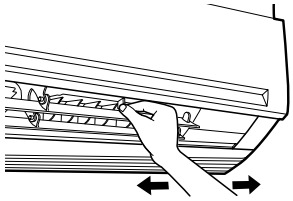


■ To adjust the horizontal blade (flap)

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.
   - " disappears from the LCD.

■ 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.)

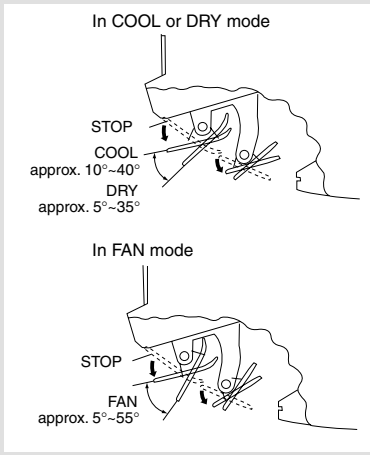


Notes on flaps and louvers angles

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

■ **ATTENTION**

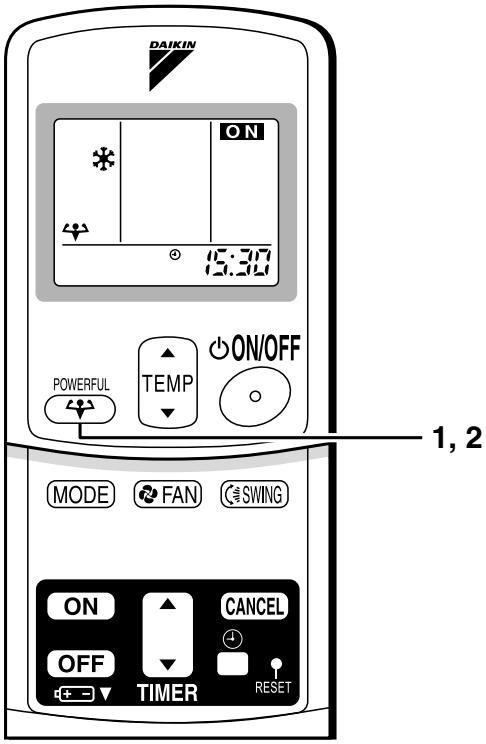
- Always use a remote controller to adjust the flaps angle. If you attempt to move it forcibly with hand when it is swinging, the mechanism may be broken.
- Be careful when adjusting the louvers. Inside the air outlet, a fan is rotating at a high speed.



2.6 POWERFUL Operation

POWERFUL Operation

POWERFUL operation quickly maximizes the cooling 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

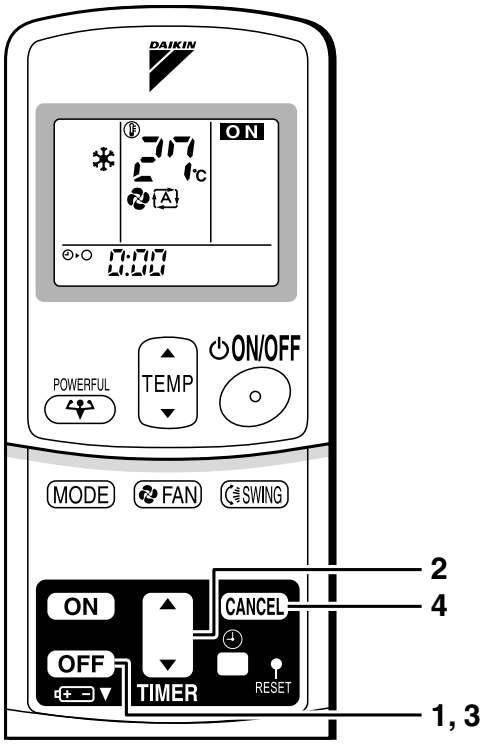
■ **Notes on POWERFUL operation**

- POWERFUL Operation 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 mode**
  The air flow rate is 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.

2.7 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. (page 9.)

1. Press “OFF TIMER button”.

0:00 is displayed.

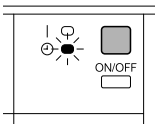
⊙○ blinks.

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.

NOTE

- 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. (Maximum approx. 10 minutes)

■ **NIGHT SET MODE**

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

■ To use ON TIMER operation

- Check that the clock is correct. If not, set the clock to the present time. (page 9.)

1. Press “ON TIMER button”.

6:00 is displayed.

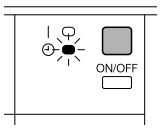
⏲▸| blinks.

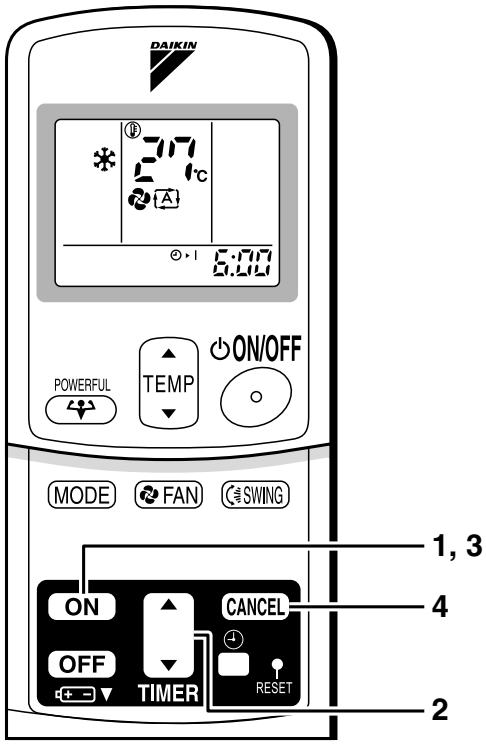
2. Press “TIMER Setting button” until the time setting reaches the point you like.

- 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 p.m.
(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.

2.8 Care and Cleaning

Care and Cleaning

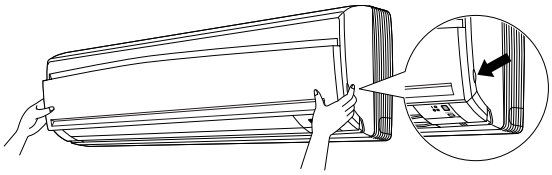
⚠ CAUTION Before cleaning, be sure to stop the operation and turn the breaker OFF.

Units

■ Indoor unit, Outdoor unit and Remote controller

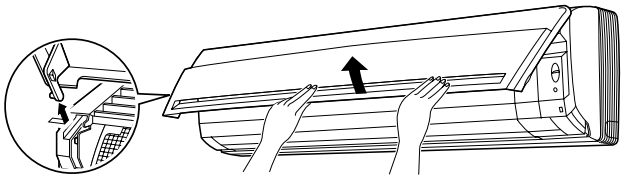
1. Wipe them with dry soft cloth.

■ Front panel



1. Open the front panel.

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



2. Remove the front panel.

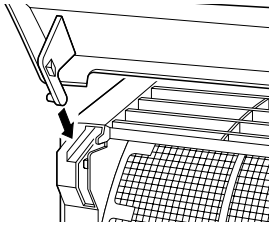
- Open the front panel further while sliding it to either the left or right and pulling it toward you. This will disconnect the rotation dowel on one side. Then disconnect the rotation dowel on the other side in the same manner.

3. Clean the front 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.

- 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.)

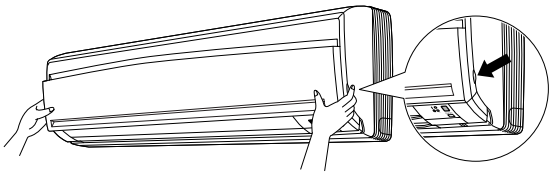


⚠ CAUTION

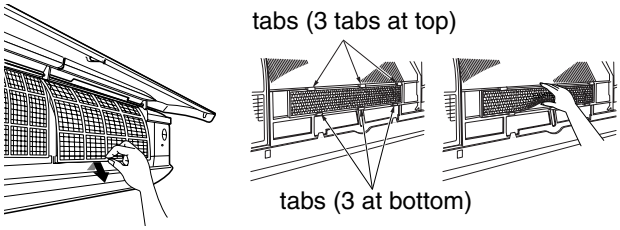
- Don't touch the metal parts of the indoor unit. If you touch those parts, this may cause an injury.
- When removing or attaching the front panel, use a robust and stable stool and watch your steps carefully.
- When removing or attaching the front panel, support the panel securely with hand to prevent 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

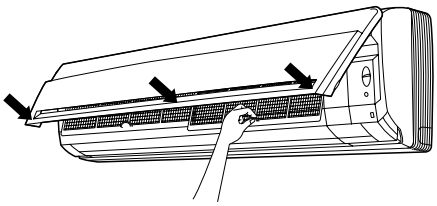
1. **Open the front panel.** **(page 16.)**
2. **Pull out the air filters.**
   - Push a little upwards the tab at the center of each air filter, then pull it down.



3. **Take off the Titanium Apatite Photocatalytic Air-Purifying Filter.**
   - 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 (3 at bottom).

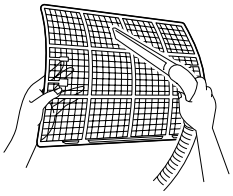


4. **Clean or replace each filter.**
   See figure.
5. **Set the air filter and the Titanium Apatite Photocatalytic Air-Purifying Filter as they were and close the front panel.**
   - Press the front panel at both sides and the center.



■ 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.



■ 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. **After washing, shake off remaining water and dry in the shade.**
4. **Since the material is made out of polyester, 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 non-flammable waste.

NOTE

- Operation with dirty filters:
  (1) cannot deodorize the air. (2) cannot clean the air.
  (3) results in poor 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 non-flammable waste.

Item	Part No.
Titanium Apatite Photocatalytic Air-Purifying Filter (without frame) 1 set	KAF952B42

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.**

2.9 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.
The outdoor unit emits water or steam.	■ In COOL or DRY mode • Moisture in the air condenses into water on the cool surface of outdoor unit piping and drips.
Mist comes 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 outdoor 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 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?
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 blinks, call the service shop where you bought the air conditioner.
An abnormal functioning happens during operation.	• The air conditioner may malfunction with lightning 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.

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.

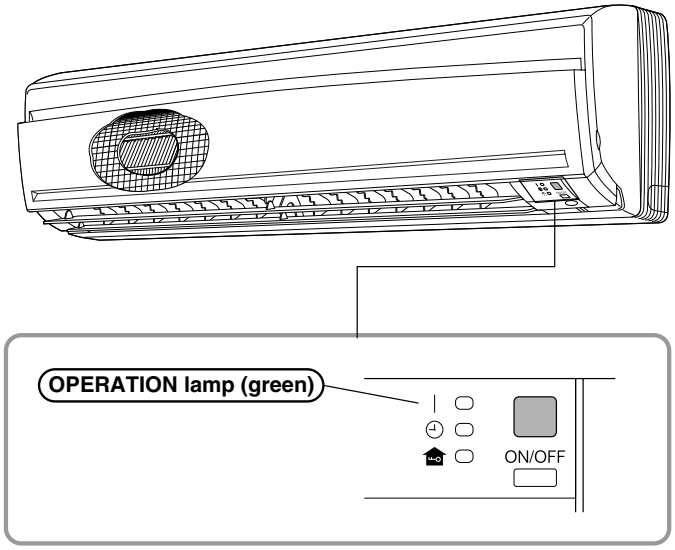
Part 6
Service Diagnosis

1. Caution for Diagnosis

The operation lamp flashes when any of the following errors is detected.
When a protection device of the indoor or outdoor unit is activated or when the thermistor malfunctions, disabling equipment operation.

Location of Operation Lamp

FT50/60FVM



(R6945)

2. Troubleshooting by Symptoms

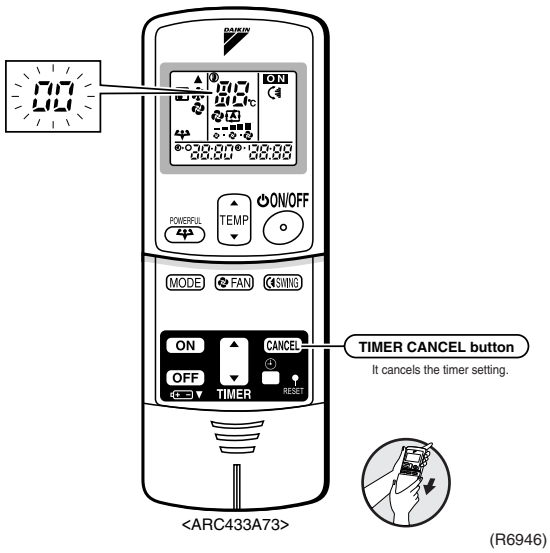
Symptom	Check Item	Details of Measure	Reference Page
None of the units operates.	Check the power supply.	Check to make sure that the rated voltage is supplied.	—
	Check the type of the indoor units.	Check to make sure that the indoor unit type is compatible with the outdoor unit.	—
	Check the outside air temperature.	Operation cannot be used when the outside temperature is below 19.4 °C.	—
	Diagnose with remote controller indication.	—	49
	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 outside air temperature.	Operation cannot be used when the outside temperature is below 19.4°C.	—
	Diagnose with remote controller indication.	—	49
Equipment operates but does not cool.	Check for thermistor detection errors.	Check to make sure that the main unit's thermistor has not dismounted from the pipe holder.	—
	Diagnose with remote controller indication.	—	49
	Diagnose by service port pressure and operating current.	Check for insufficient gas.	—
Large operating noise and vibrations	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.



<ARC433A73>

(R6946)

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.

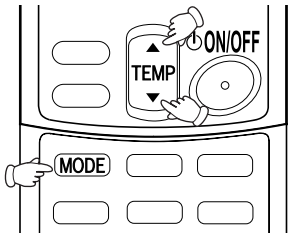
No.	Code	No.	Code	No.	Code
1	00	12	C7	23	H0
2	U4	13	H8	24	E1
3	F3	14	J3	25	P4
4	E6	15	A3	26	L3
5	L5	16	A1	27	L4
6	A6	17	C4	28	H6
7	E5	18	C5	29	H7
8	F6	19	H9	30	U2
9	C9	20	J6	31	UH
10	U0	21	UA	32	EA
11	E7	22	A5	33	AH

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.

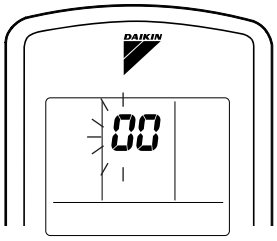
Check Method 2

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



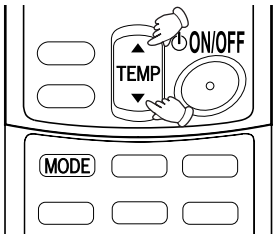
(R4272)

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



(R4273)

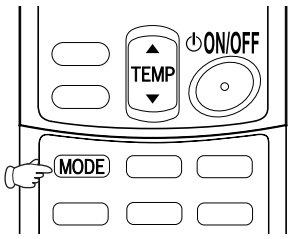
2. Press the TEMP button.
   Press TEMP▲ or TEMP▼ and change the digit until you hear the sound of “beep” or “pi pi”.



(R4274)

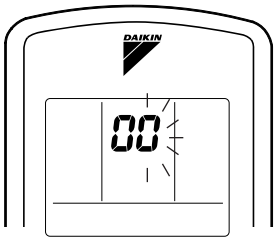
3. Diagnose by the sound.
   ★“pi” : The number of tens does not accord with the error code.
   ★“pi pi” : The number of tens accords with the error code.
   ★“beep” : The both numbers of tens and units accord with the error code. (→See 7.)

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



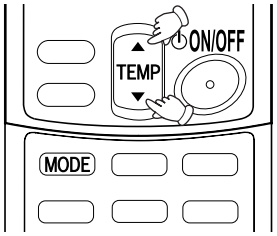
(R4275)

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”.

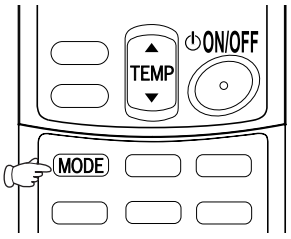


(R4277)

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 49.)

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



(R4278)

4. Troubleshooting

4.1 Error Codes and Description

Code Indication	Description	Reference Page
00	Normal	—
A1	Indoor unit PCB abnormality	50
A5	Freeze-up protection control	51
A6	Fan motor or related abnormality	52
C4	Heat exchanger thermistor abnormality	54
C9	Room temperature thermistor abnormality	54
*	Indoor unit PCB abnormality	55

4.2 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

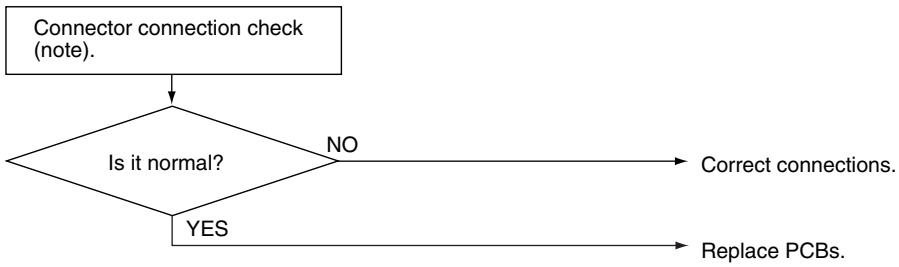
When there is no zero-cross detection in approximately 10 continuous seconds.

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.

Model Type	Connector No.
All models	Terminal strip~Control PCB (indoor unit)

4.3 Freeze-up Protection Control

Remote Controller Display

P5

Method of Malfunction Detection

- 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

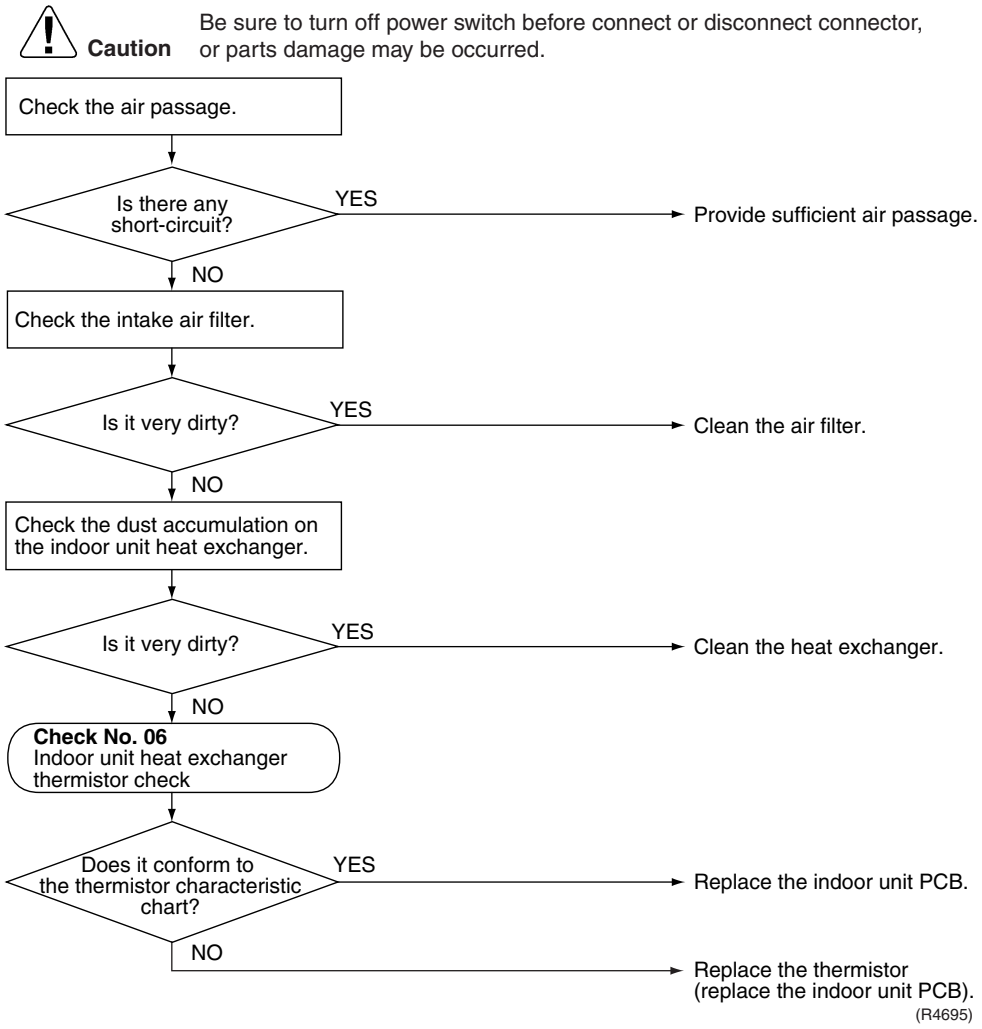
- Freeze-up protection
  When the indoor unit heat exchanger temperature is below 0°C during cooling operation.

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.57



4.4 Fan Motor or Related Abnormality

Remote Controller Display

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

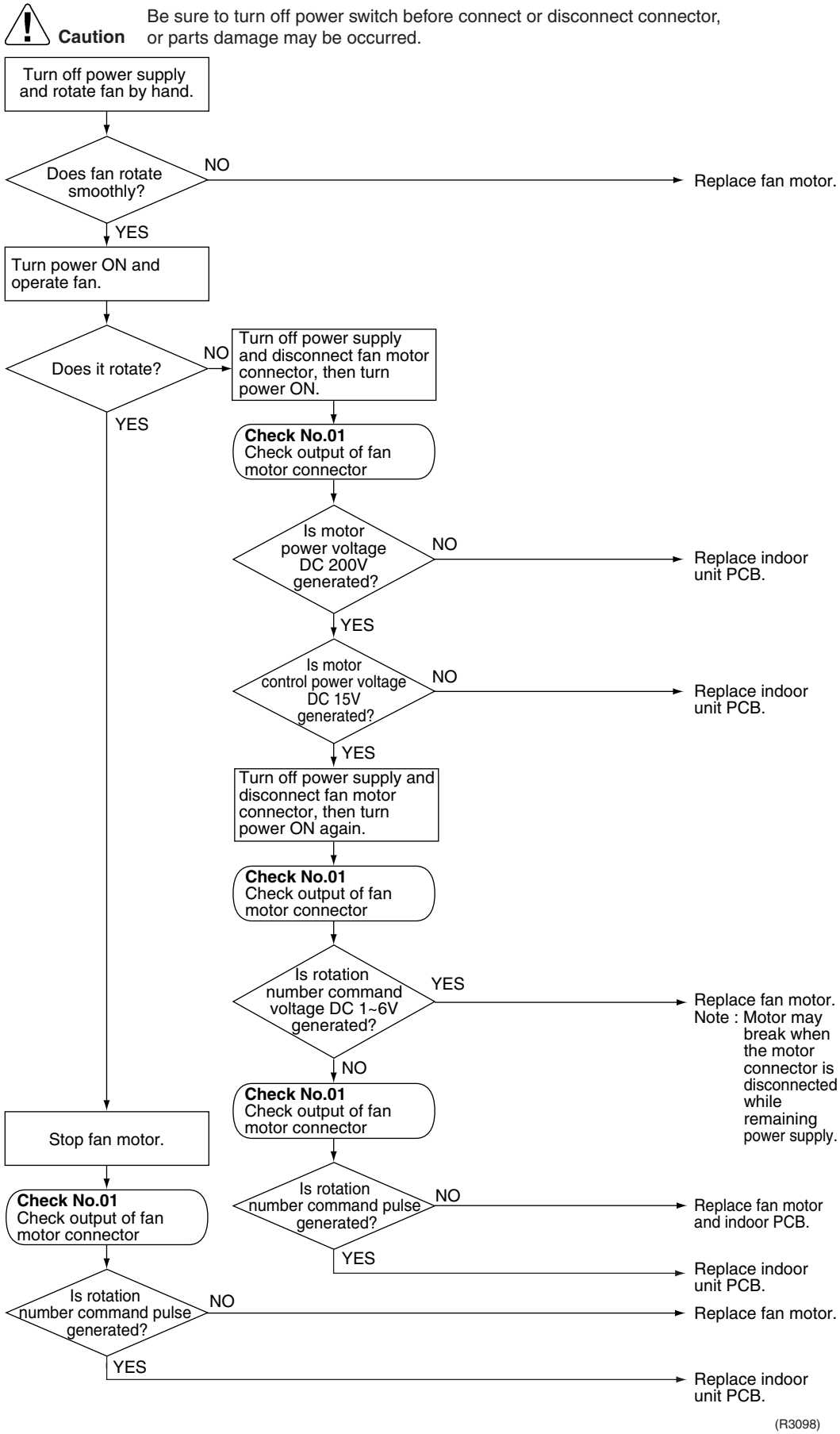
When the detected rotation speed does not reach the demanded rotation speed of the target tap, and is less than 50% of the maximum fan motor rotation speed.

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.

Troubleshooting

Check No.01
Refer to P.56



(R3098)

4.5 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).

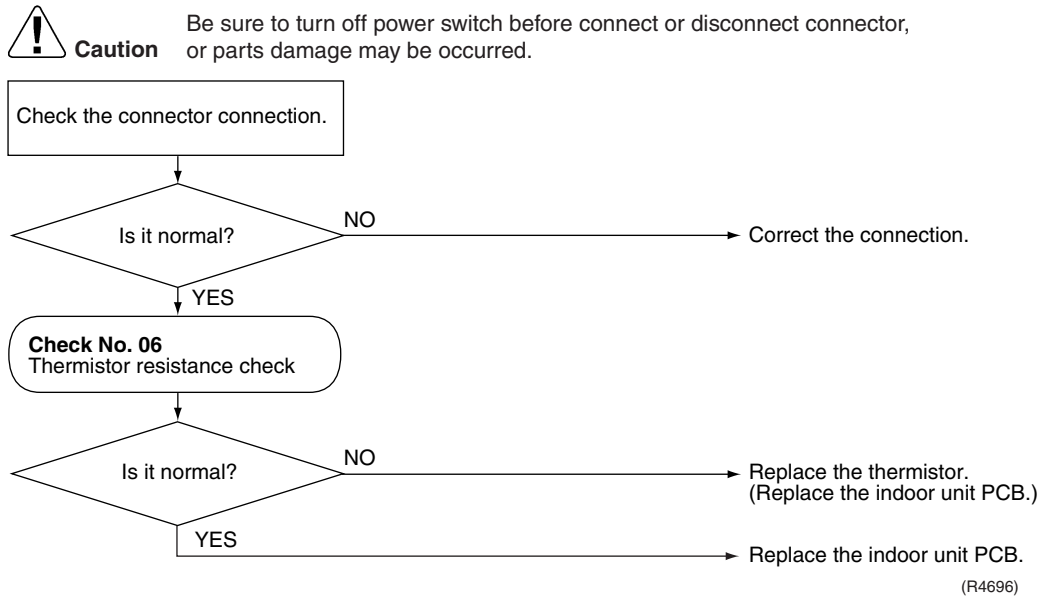
Note: The values vary slightly in some models.

Supposed Causes

- Faulty connector connection
- Faulty thermistor
- Faulty PCB

Troubleshooting

Check No.06
Refer to P.57



C4 : Indoor heat exchanger thermistor
C9 : Room temperature thermistor

4.6 Indoor Unit PCB Abnormality

Remote Controller Display

*

Method of Malfunction Detection

The proper programme operation of the microcomputer is checked by the programme.

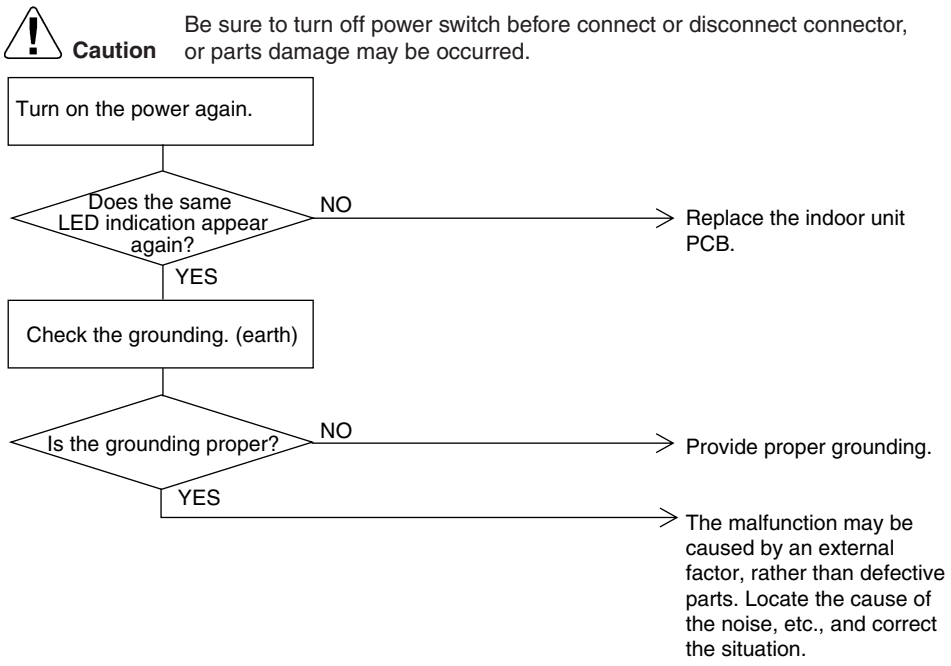
Malfunction Decision Conditions

When the microcomputer programme does not function properly.

Supposed Causes

- Microcomputer programme is in abnormal condition due to an external factor.
  *Noise
  *Momentary voltage drop.
  *Momentary power failure, etc.
- Faulty indoor unit PCB.

Troubleshooting



(R1881)

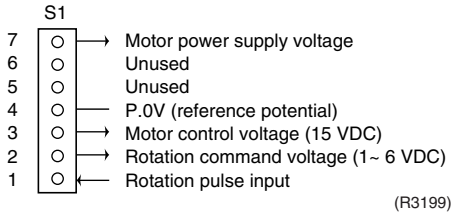
5. Check

5.1 How to Check

5.1.1 Fan Motor Connector Output Check

Check No.01

1. Check connector connection.
2. Check motor power supply voltage output (pins 4-7).
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).

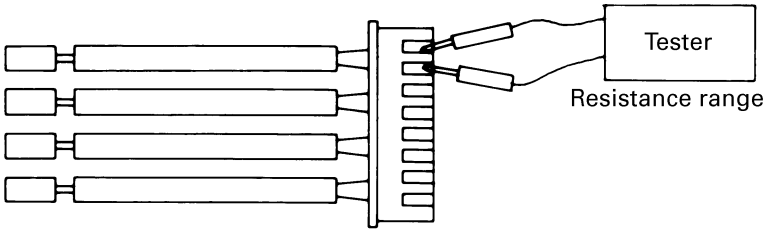


5.1.2 Thermistor Resistance Check

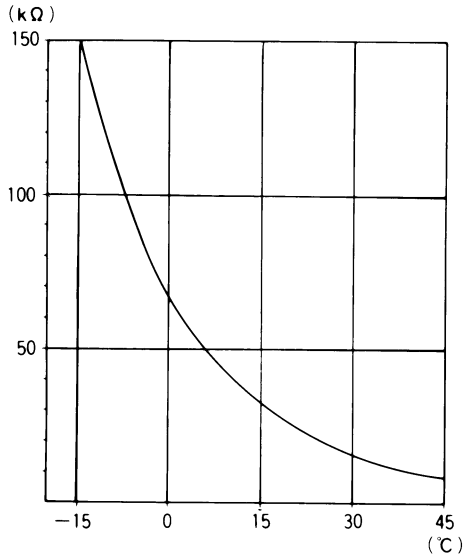
Check No.06

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)

Part 7
Removal Procedure

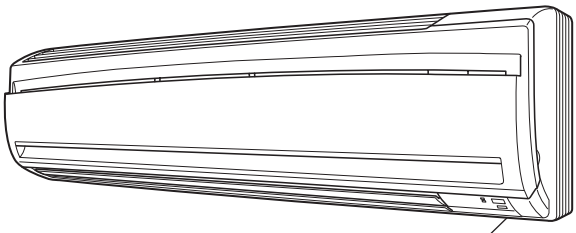
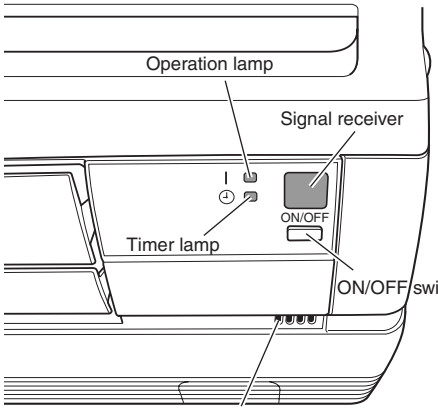
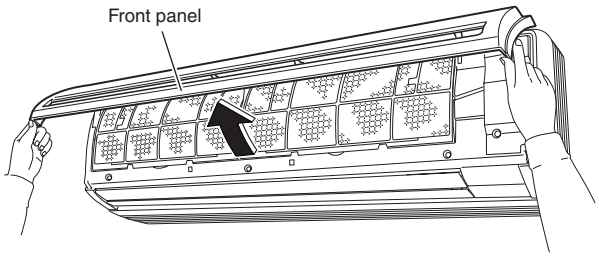
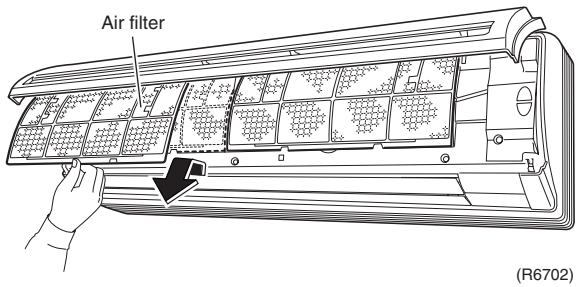
Note:
The removal procedures for R50BVL are not described.

1. FT50/60FVM

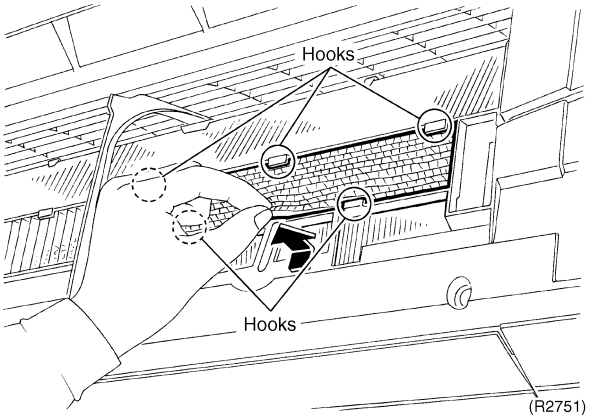
1.1 Removal of Air Filter / Front Panel

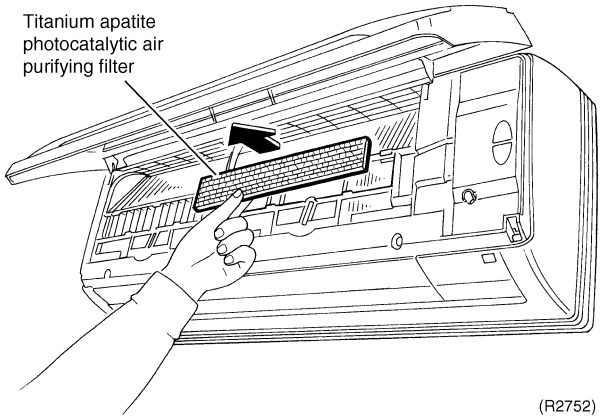
Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

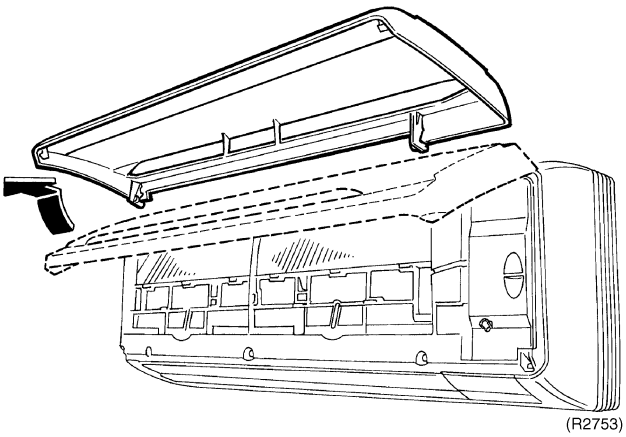
Step	Procedure	Points
1. Features	 (R6699)  (R6700)	■ When the signal receiver catches a signal from the remote controller, it produces beep sound and the operation lamp blinks.
2. Remove the air filters.		
1 Hold the front panel by the tabs on the both sides and lift it until it stops with a click.	 (R6701)	
2 Lift an air filter upwards slightly by the center knob, and then pull it out downwards.	 (R6702)	■ The right and left filters are interchangeable. ■ Insert the air filters along grooves when installing. ■ Set the air filters with displaying “FRONT” on the front side. ■ Insert 2 hooks of the air filter completely.

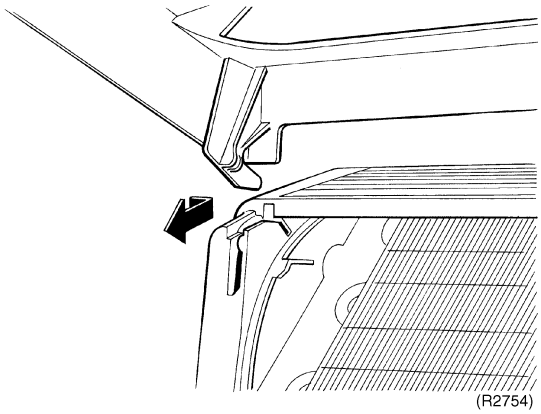
Step	Procedure	Points
3. Remove an “titanium apatite photocatalytic air purifying filter”.		
1	Push up the bottom of an air purifying filter to undo the hooks (2 on lower, 3 on upper) and take the filter out.	■ The right and left filters are interchangeable.

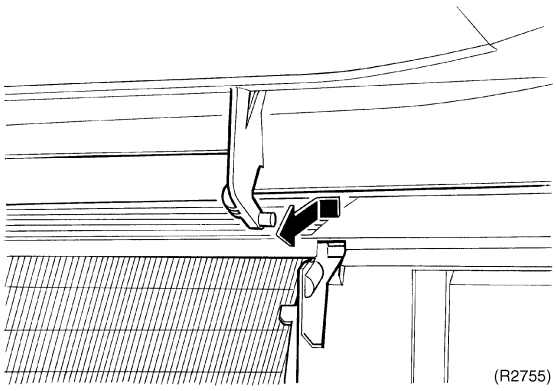




Step	Procedure	Points
4. Remove the front panel.		
1	While opening the front panel further than it stops, release both axes and remove the front panel.	■ Slide the front panel side to side to release each axis. ■ Align the right and left axes with grooves in turn and insert them to the end when installing.


(R2753)

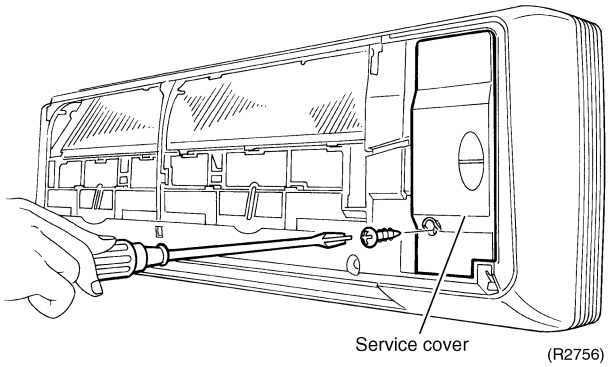
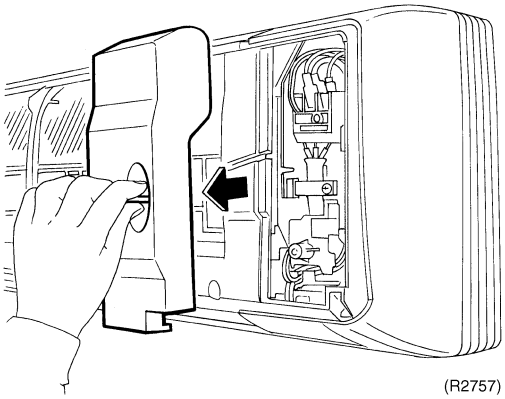
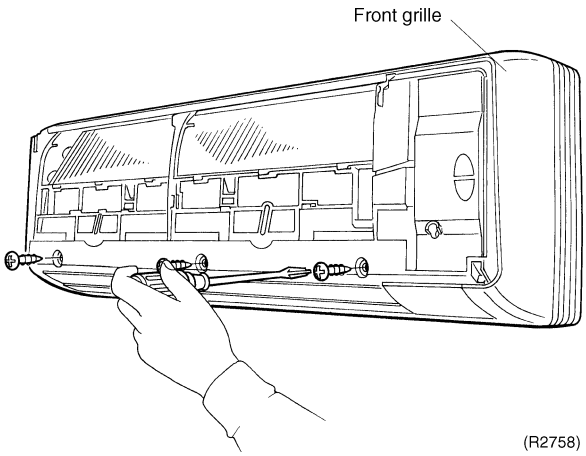

(R2754)

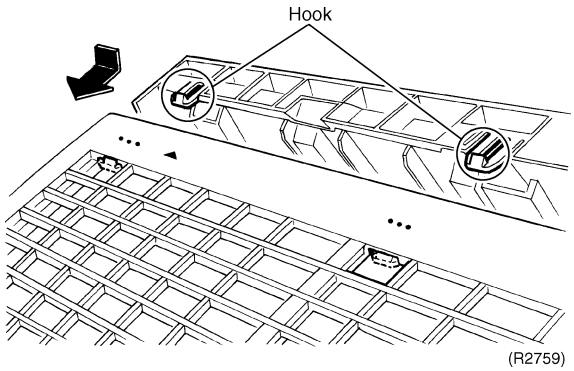
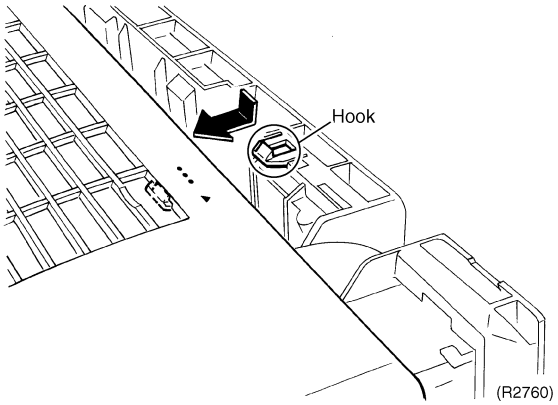
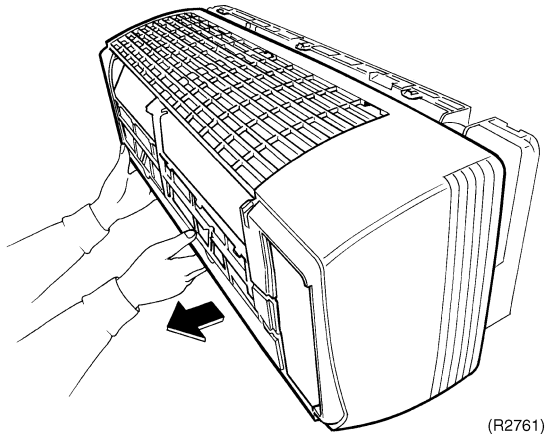
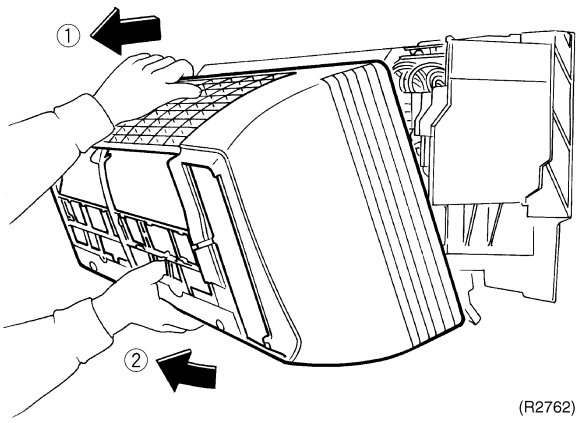

(R2755)

1.2 Removal of Front Grille

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 service cover.		■ No field setting switch is inside it. ■ You can remove the front grille without detaching the service cover.
1 Loosen the screw and remove the service cover by the knob.		
2. Remove the front grille.		■ It has no fixing screws inside blades, though previous models had.
1 Loosen the 3 fixing screws of the front grille.		

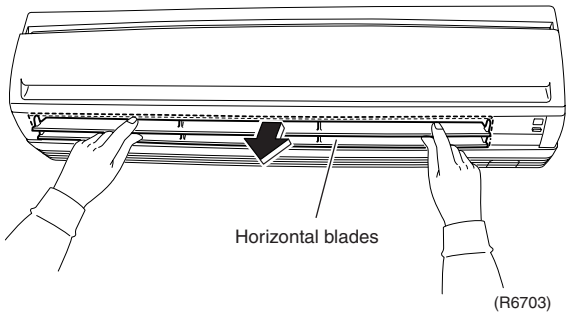
Step	Procedure		Points
2	Undo the 3 hooks on the top of the front grille.	 (R2759)  (R2760)  (R2761)	■ The front grille has 3 hooks on the center and the both sides of the upper part. ■ Refer to the removal procedure in a reverse way when reassembling.
3	Pull the upper part of the front grille out and lift the lower part up, and then remove the front grille.	 (R2762)	■ Make sure that all the hooks are placed securely when reassembling.

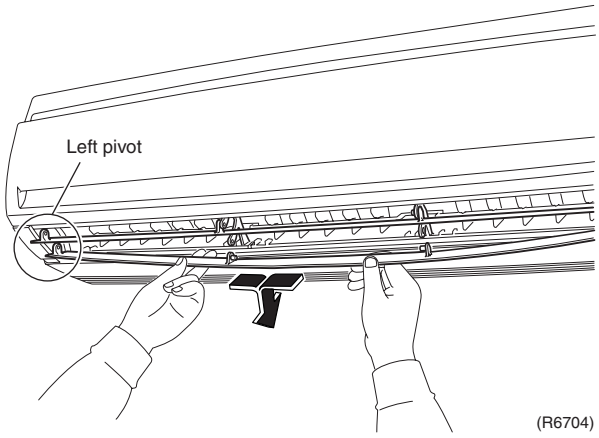
1.3 Removal of Horizontal Blades / Vertical Blades

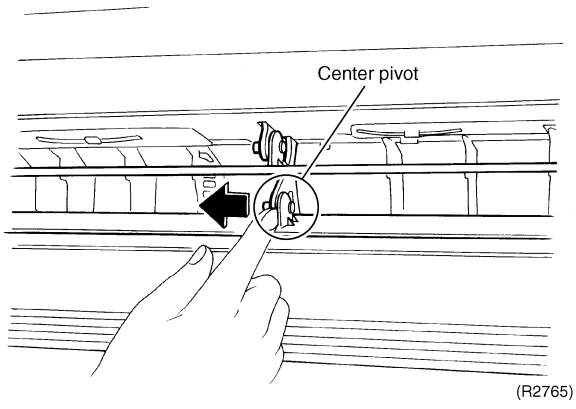
Procedure

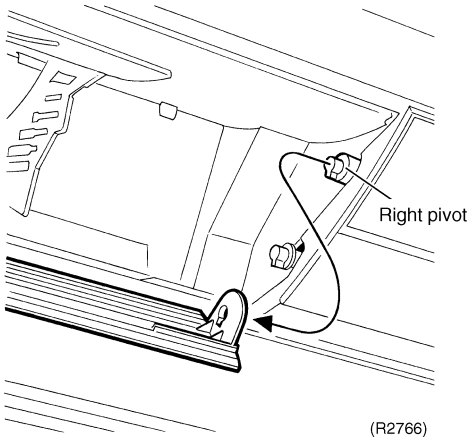
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1. Remove the horizontal blades.		
1	Open the horizontal blades.	■ It has no fixing screws inside blades, though previous models had.
2	Undo the left pivot of the horizontal blades.	
3	Bend the horizontal blades slightly and release the center pivots. Slide the horizontal blades to the left and release the right pivot.	■ Installation procedure 1. Since key pattern hook is provided, rotate the blades and fit it to the right pivot first. 2. Fit the blades to the center and left pivots.

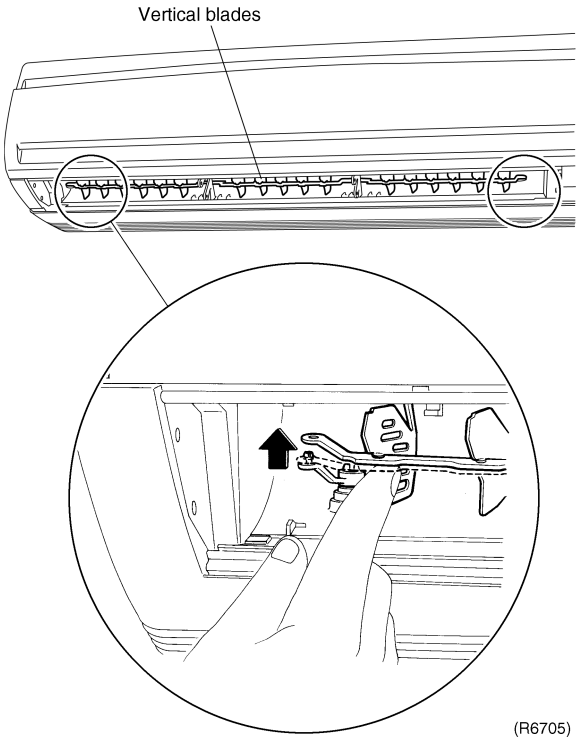


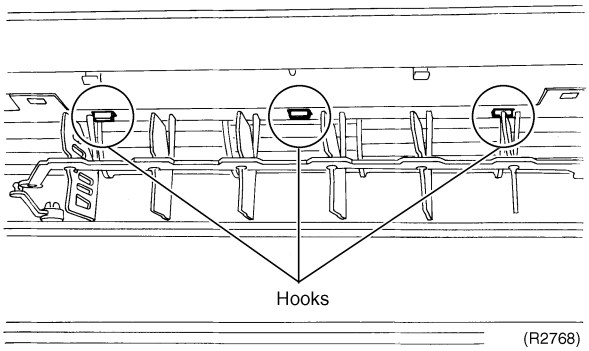


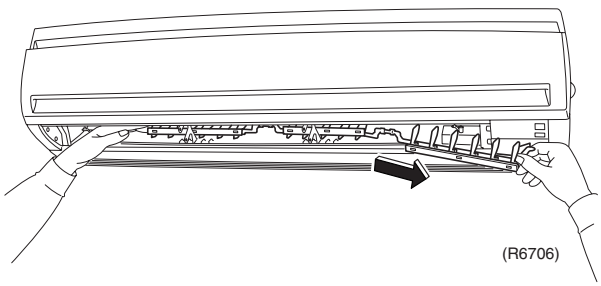




Step	Procedure	Points
2. Remove the vertical blades.		
1	Undo the right and left pivots.	
2	Undo the 3 hooks.	
3	Pull the vertical blades rightwards and remove it.	



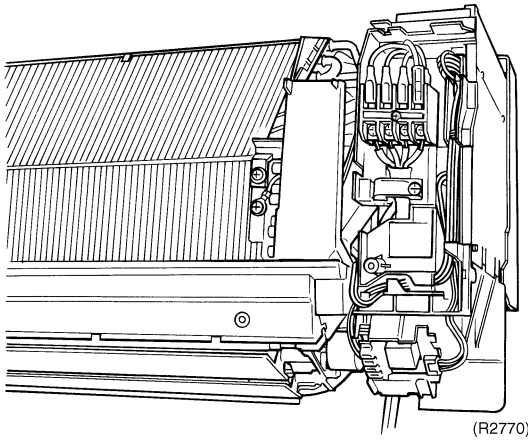
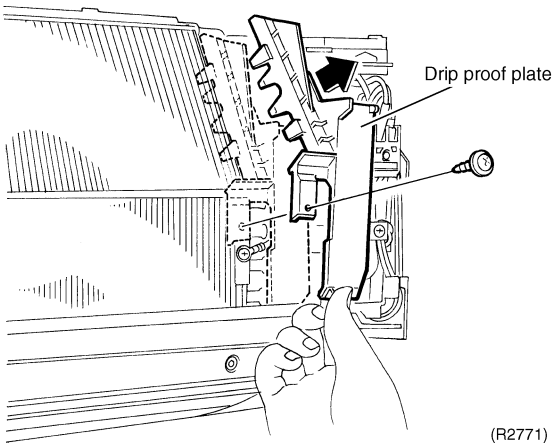
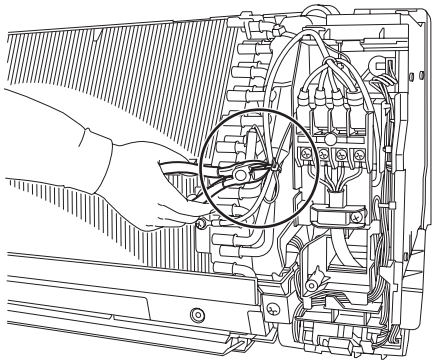
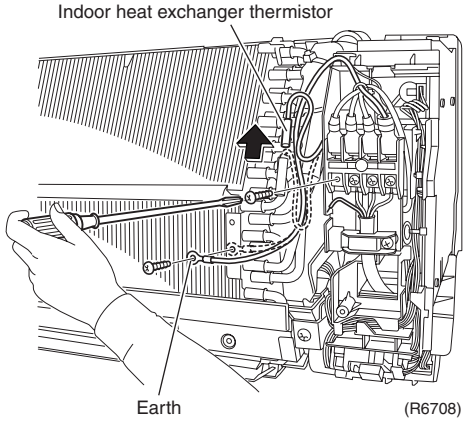




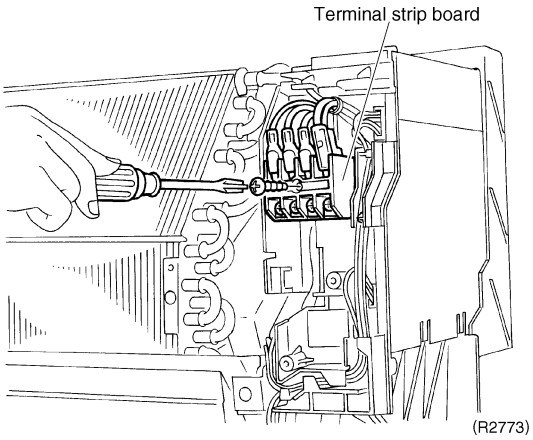
1.4 Removal of Electrical Box / PCB / Swing Motor

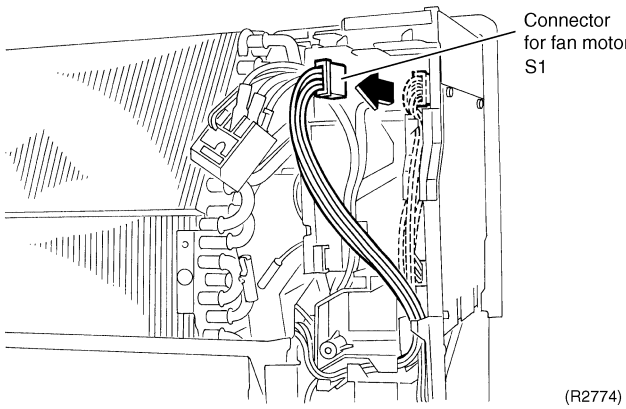
Procedure

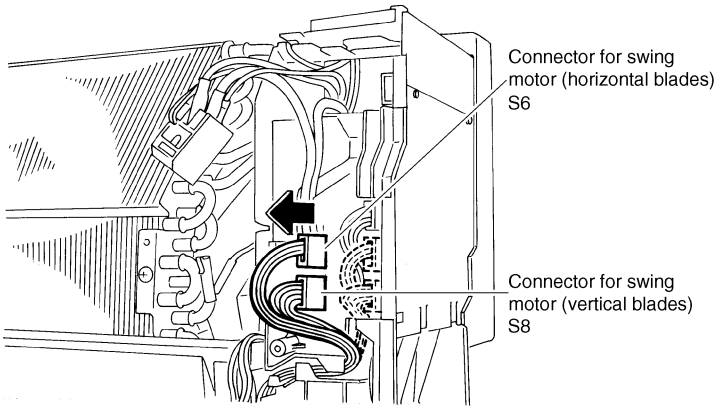
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

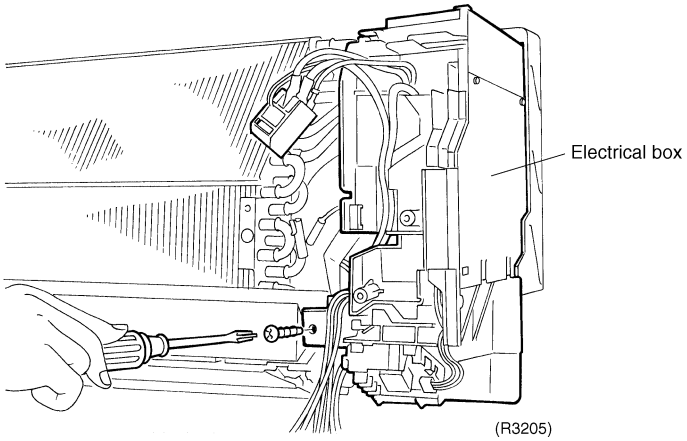
Step	Procedure	Points
1. Remove the front grille.	 (R2770)	■ Parts layout
2. Remove the drip proof plate.		
1 Loosen the screw.	 (R2771)	
2 Cut the clamp.	 (R6707)	
3. Disconnect the indoor heat exchanger thermistor and the earth.	 (R6708)	■ Mind that not to lose the clip for the thermistor.

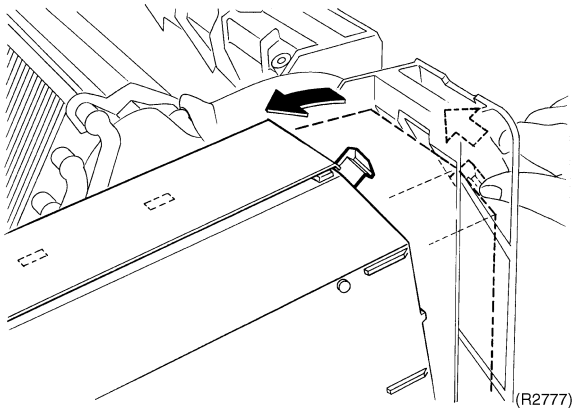
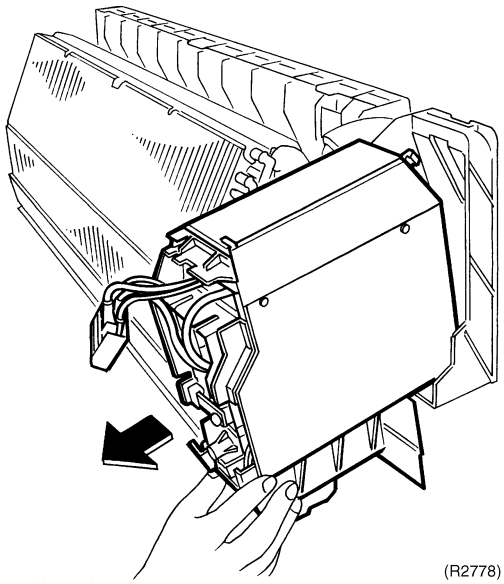
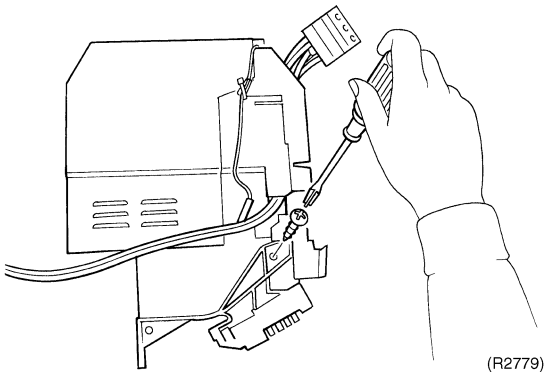
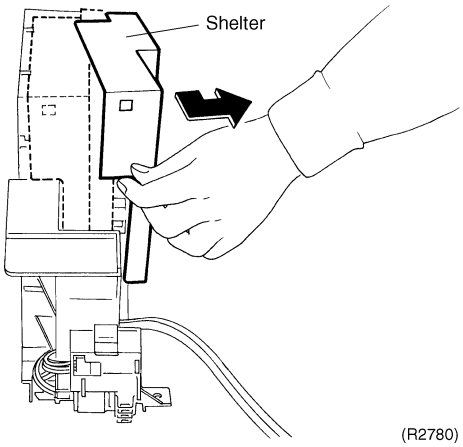
Step	Procedure	Points
4. Remove the electrical box.		
1	Disconnect the 4 connection wirings. Loosen the screw and remove the terminal strip board.	■ You can remove the electrical box without detaching the terminal strip board. ■ Screw: M4×25
2	Disconnect the connectors for fan motor (S1).	
3	Disconnect the connectors for swing motor (S6, S8).	
4	Loosen the fixing screw of the electrical box.	

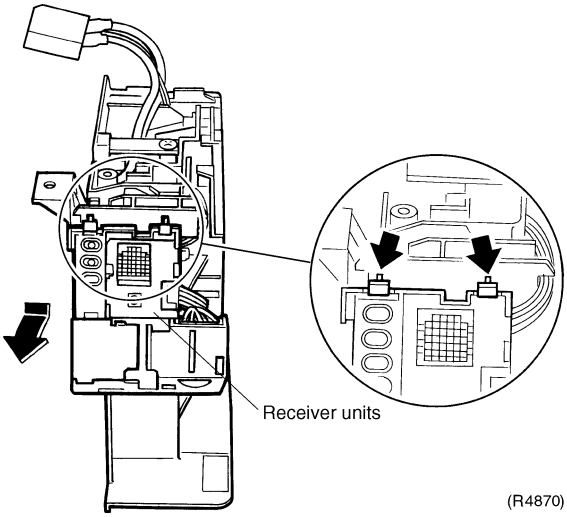
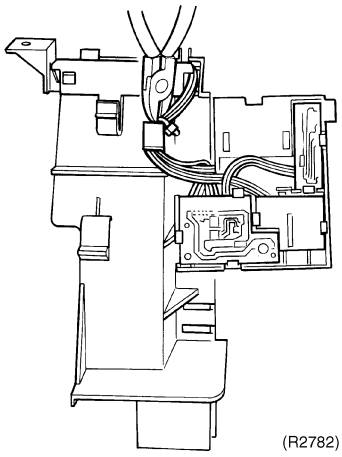
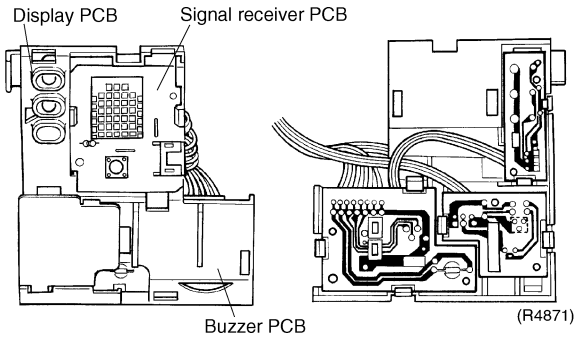
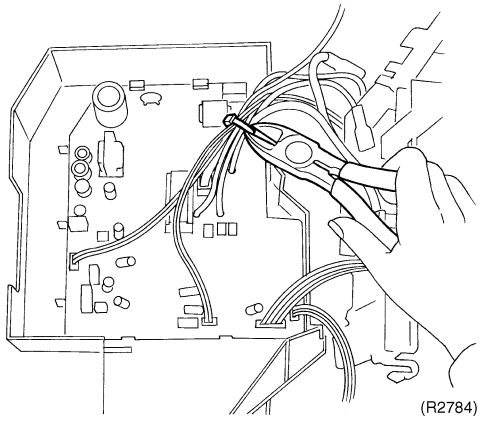




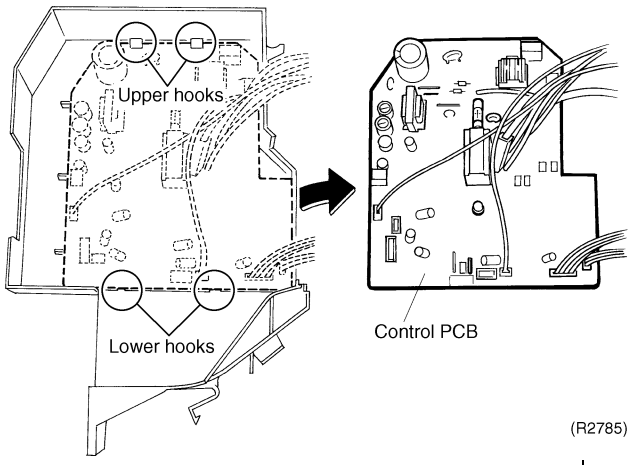


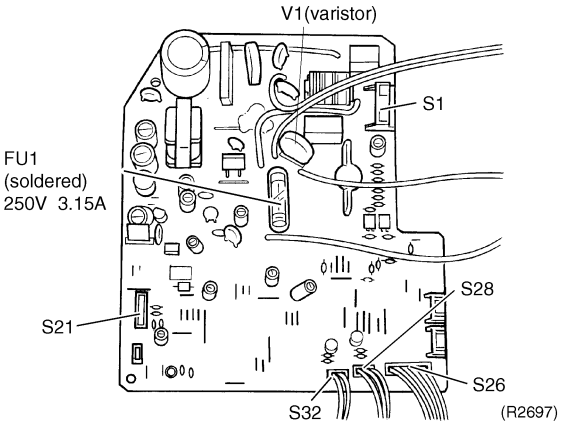


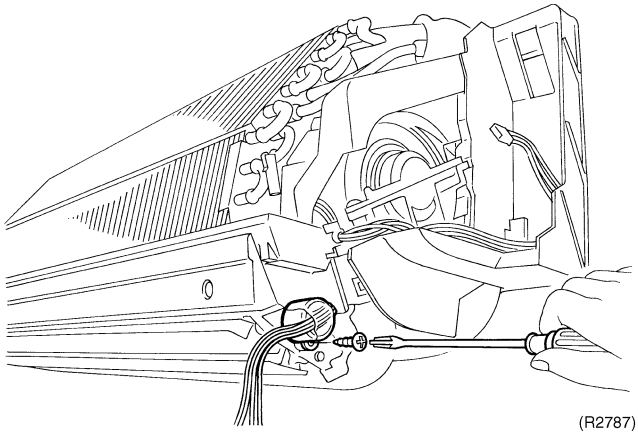
Step	Procedure		Points
5	Dislocate the electrical box to the left and undo the back hook.	 (R2777)	■ The electrical box has a hook on its back.
6	Pull the electrical box out towards you.	 (R2778)	■ Catch the back hook of the electrical box when reassembling.
7	Loosen the screw on the electrical box.	 (R2779)	■ Screw: M4×16
8	Push the shelter up and undo the hook.	 (R2780)	

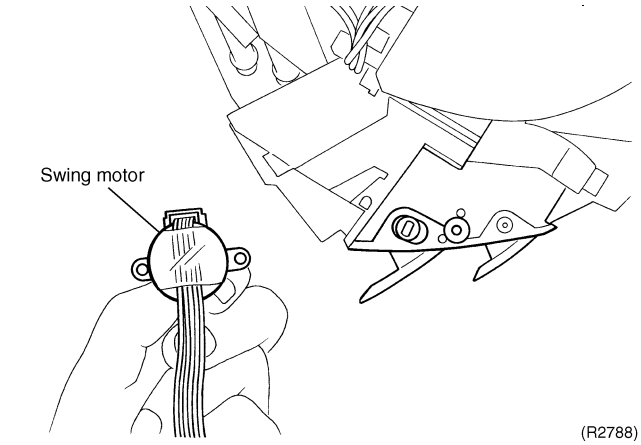
Step	Procedure		Points
9	Press the receiver units down and undo the hooks on the upper side, and then undo the hooks on the lower side.		■ Release the hooks on the upper side.
10	Cut the clamp.		
11	The receiver units contain 4 PCBs. Remove each PCB with releasing hooks. Disconnect every connector from each PCB.		■ Remove the receiver units while pushing the hooks of connectors.
12	Cut the clamp.		■ Clamps should be always available. Fix it as it was before.

Step	Procedure	Points
5. Remove the control PCB.		
1	Undo the 2 hooks on the lower side, and then the 2 hooks on the upper side. Remove the control PCB.	
2	Control PCB (indoor unit) S1: connector for the fan motor S21: HA S26: connector for buzzer PCB thermistor S28: connector for signal receiver PCB S32: connector for the heat exchanger thermistor	
6. Remove the swing motor for horizontal blades.		
1	Remove the screw of the swing motor.	

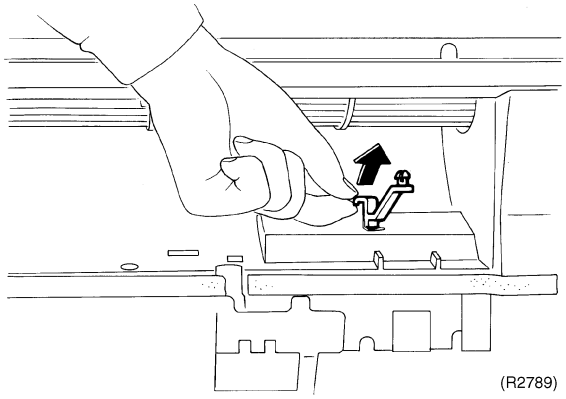


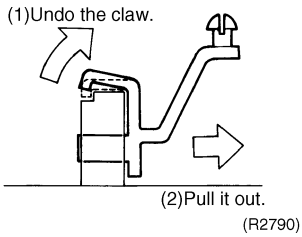




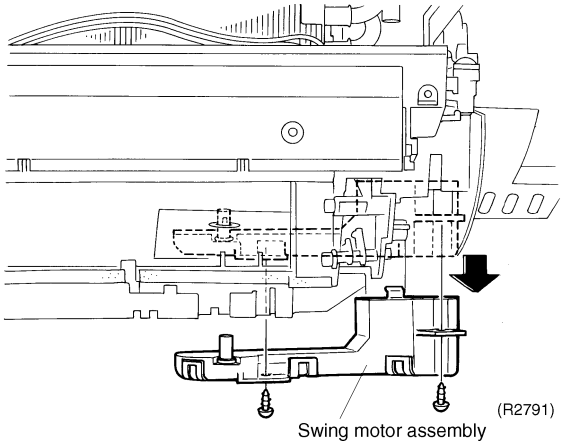


Step	Procedure	Points
7. Remove the swing motor for vertical blades.		
1	Release the swing axis on the right side.	■ Releasing the swing axis
2	Loosen the 2 screws and detach the swing motor assembly.	
3	Loosen the 2 screws and remove the swing motor.	■ 6 hooks hold the assembly.

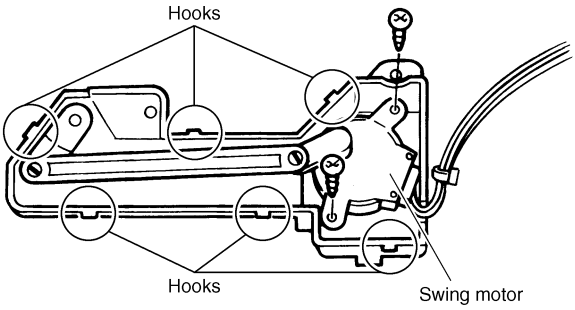

(R2789)

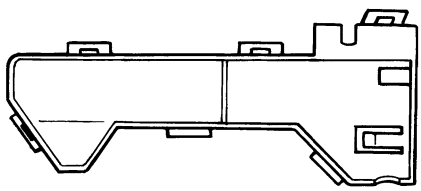


(R2790)



(R2791)

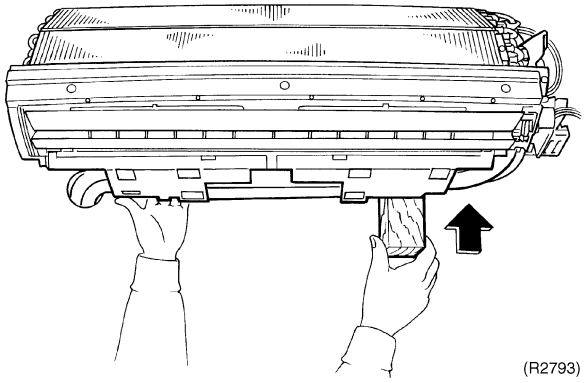
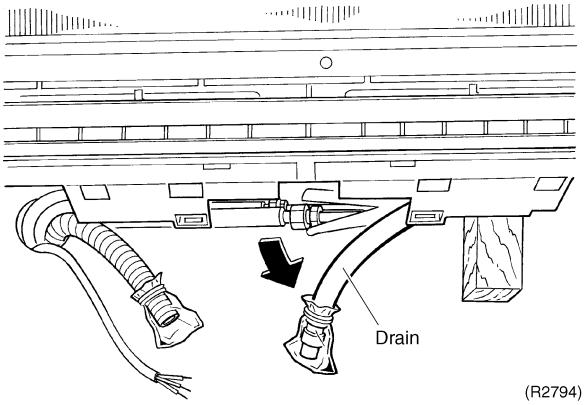
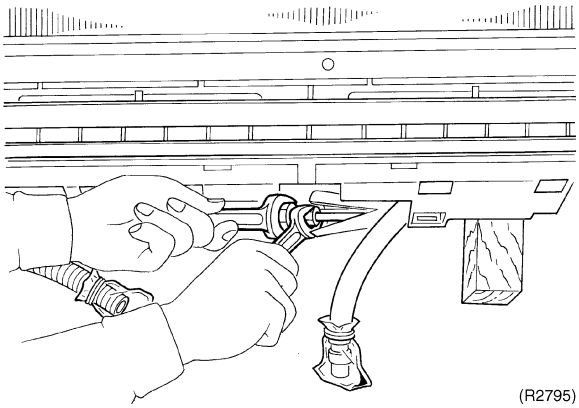
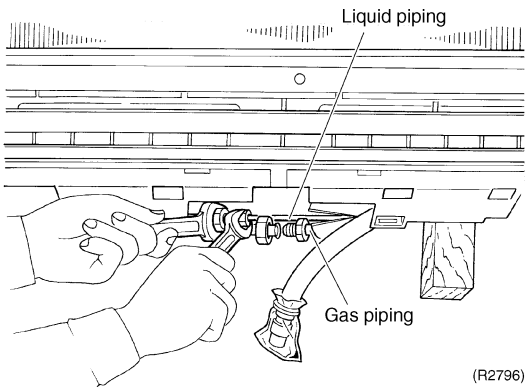


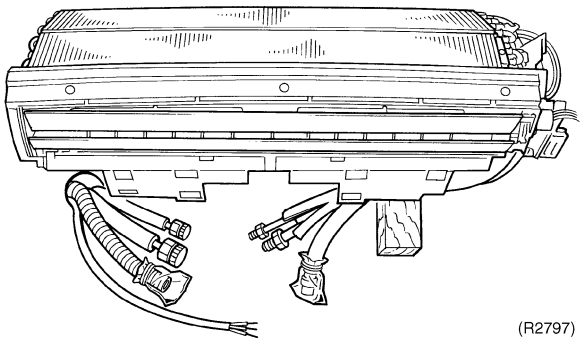
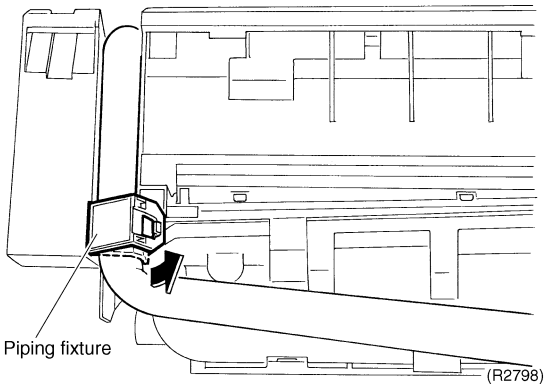
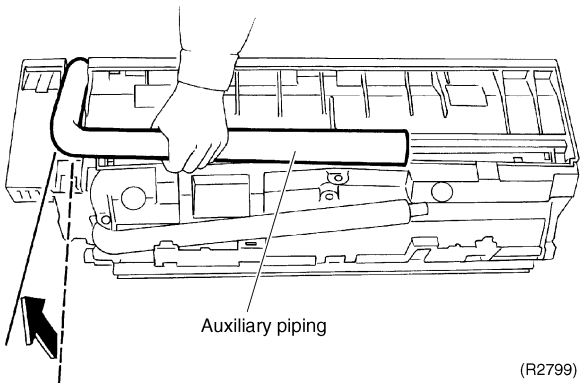

(R2792)

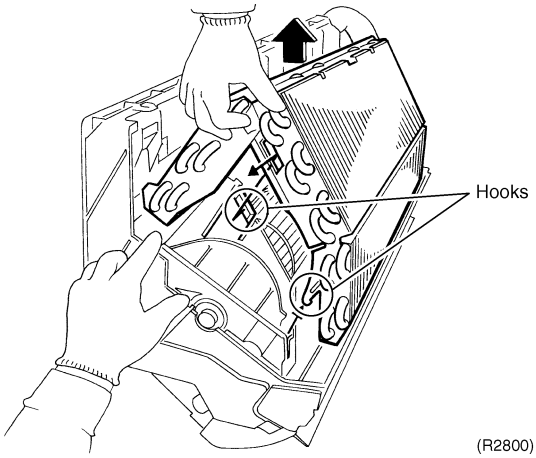
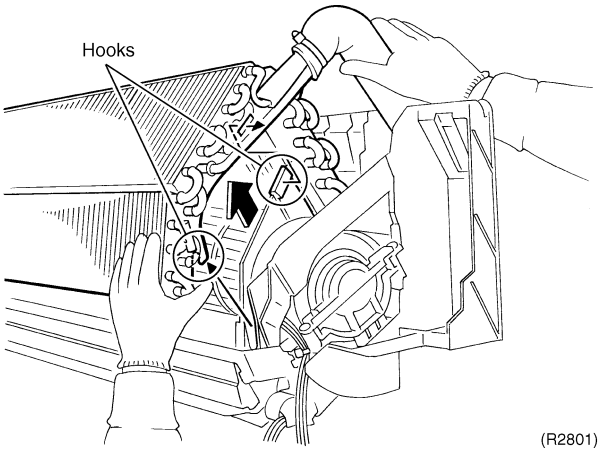
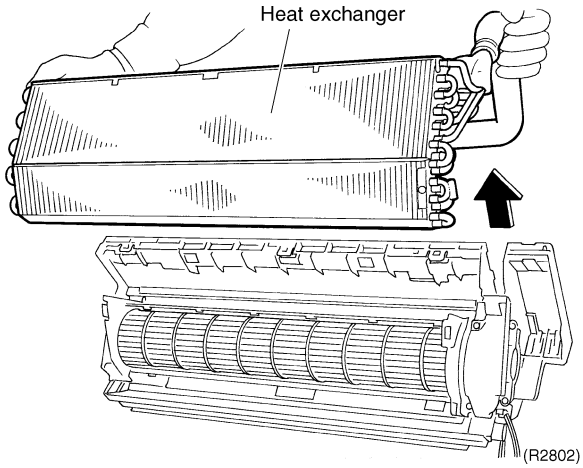
1.5 Removal of Heat Exchanger

Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
■ Remove the electrical box.	 (R2793)	**Caution** **If gas leaks, repair the spot of leaking, then collect all refrigerant from the unit. After conducting vacuum drying, recharge proper amount of refrigerant.**
1. Disconnect the refrigerant piping.		**Caution** **Do not contaminate any gas (including air) other than the specified refrigerant (R-22 or R-410A, depending on the model) into refrigerant cycle. (Contaminating of air or other gas causes abnormal high pressure in refrigerating cycle, and this results in pipe breakage or personal injuries.)**
1 Hold the indoor unit up by a piece of wood etc.	 (R2794)	■ Pay attention so that the residual water in the drain will not make the floor wet. ■ In case that a drain hose is buried inside a wall, remove it after the drain hose in the wall is pulled out.
2 Unscrew the flare nut for gas piping by 2 wrenches.	 (R2795)	■ Use 2 wrenches to disconnected pipes. ■ When disconnecting pipes, cover every nozzle with caps so as not to let dust and moisture in.
3 Unscrew the flare nut for liquid piping by 2 wrenches.	 (R2796)	

Step	Procedure	Points
2. Remove the indoor unit.	 (R2797)	
1 Detach the indoor unit from the installation plate.		
3. Remove the piping fixture.	 Piping fixture (R2798)	
1 Release the hook on the upper side of the piping fixture on the back of the unit.		
4. Remove the heat exchanger.	 Auxiliary piping (R2799)	■ At an angle of 10°~20°
1 Widen the auxiliary piping to the extent of 10°~20°.		

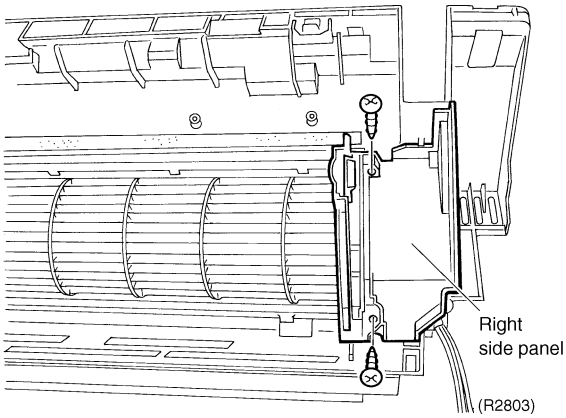
Step	Procedure		Points
2	Release the hooks on the left side.		
3	Push the fixing hooks on the right side and release.		
4	Pull the heat exchanger to the front side and undo the hooks completely, and then lift it.		**Caution** **When removing or reinstalling heat exchanger, be sure to wear protective gloves or wrap the heat exchanger with cloths. (Fins can cut fingers.)**

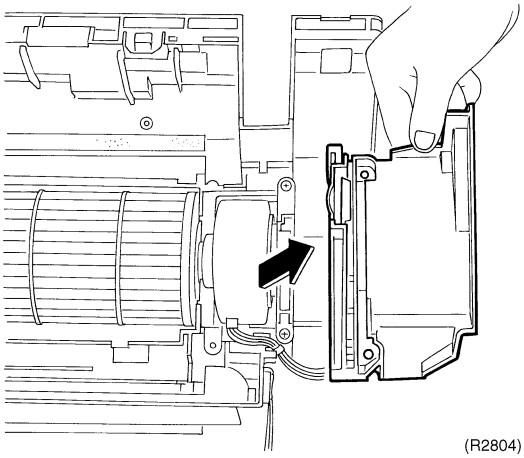
1.6 Removal of Fan Rotor / Fan Motor

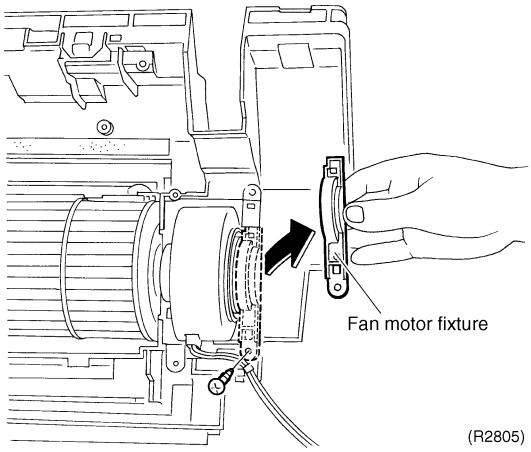
Procedure

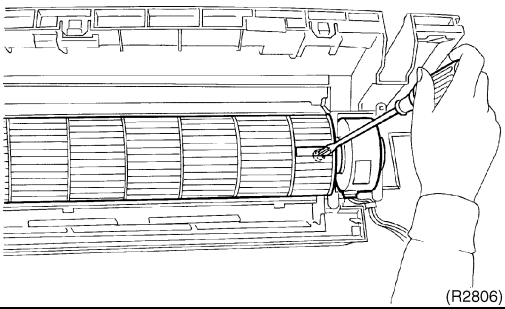
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

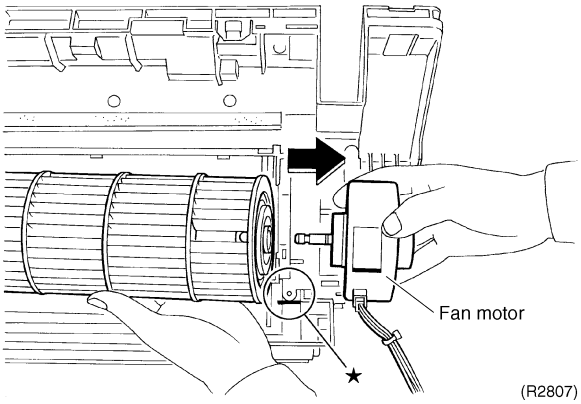
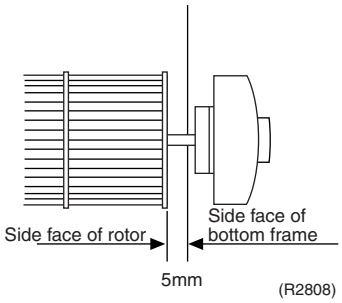
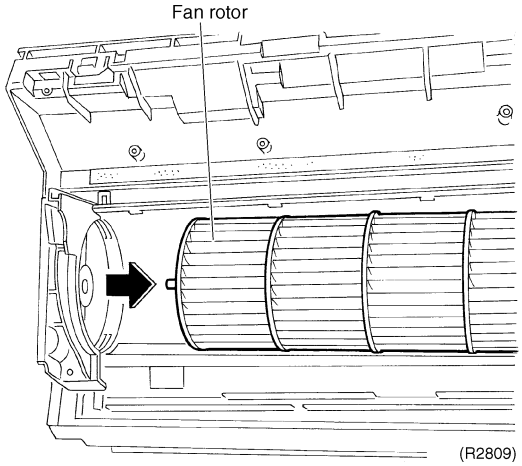
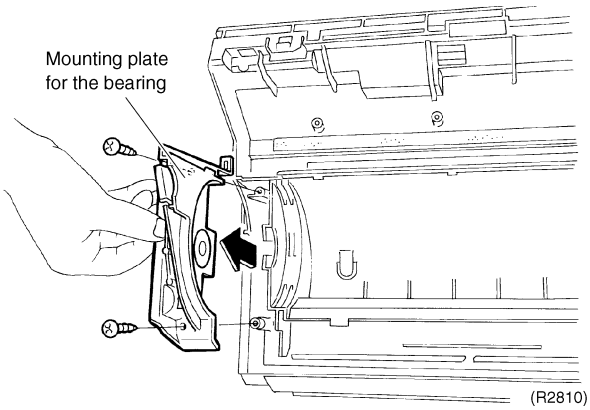
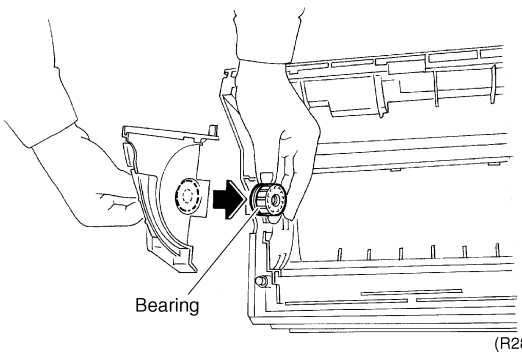
Step	Procedure	Points
1. Remove the right side panel.		■ You can remove the fan rotor without detaching the right side panel.
1	Loosen the 2 screws.	
2	Lift the right side panel and remove it.	
2. Remove the fan rotor.		
1	Loosen the screw and remove the fan motor fixture.	
2	Loosen the fixing screw of the fan rotor.	









Step	Procedure	Points
3. Remove the fan motor.		■ Reassembling the fan motor (1) When reassembling the fan rotor, provide as much as 5mm of play between the side face of the rotor and the bottom frame. 
1 Remove the fan rotor.		
4. Remove the bearing.		(2) When reassembling the fan motor, align the end of the connector with the height of ★ for play.
1 Remove the fan rotor. The bearing is on the left side.		
2 Loosen the 2 screws and remove the mounting plate for the bearing.		
3 The bearing is made of rubber. Push it inwards firmly and remove it.		

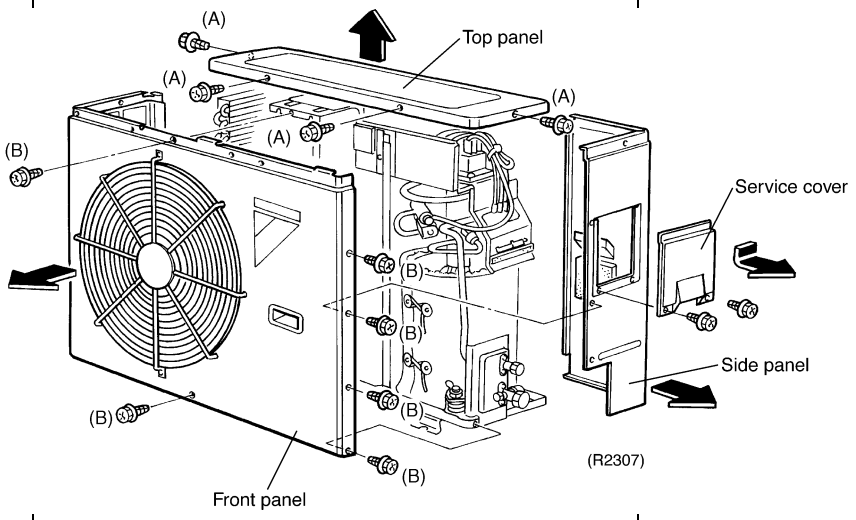
2. R50/60BV1, R60BVL, R50/60CV1A

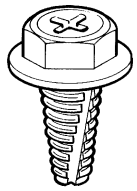
2.1 Removal of Panels

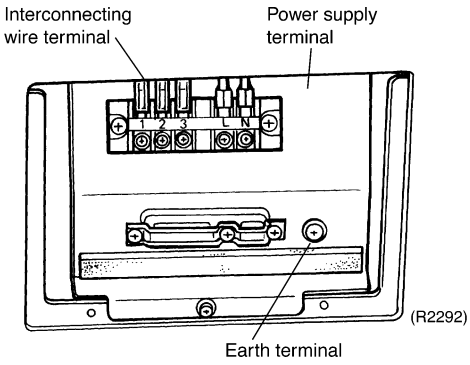
Procedure

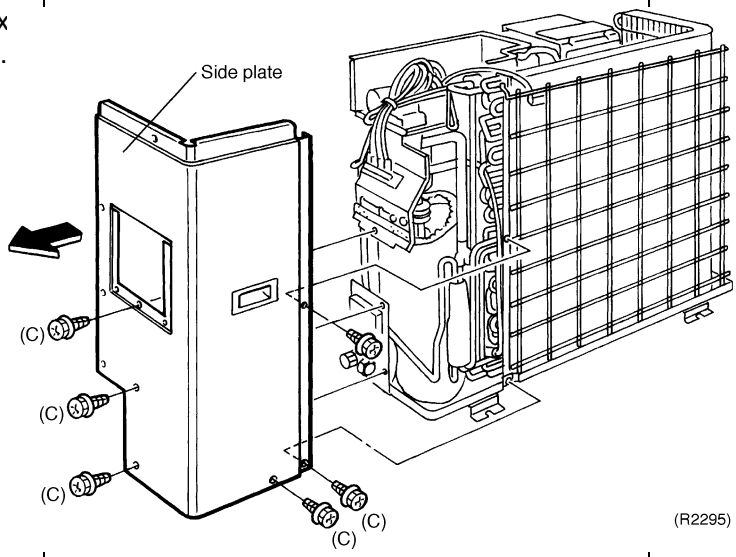
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1	To dismount the top panel, remove the four mounting screws (A).	
2	To dismount the front panel, remove the six mounting screws (B).	
3	To dismount the service cover, remove the two mounting screws.	
4	To dismount the side panel, remove the six mounting screws (C).	







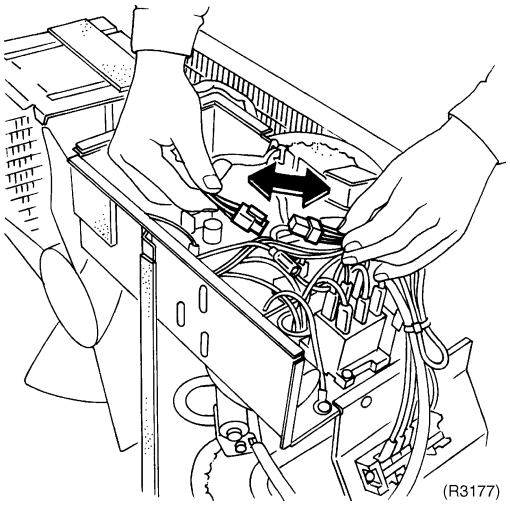


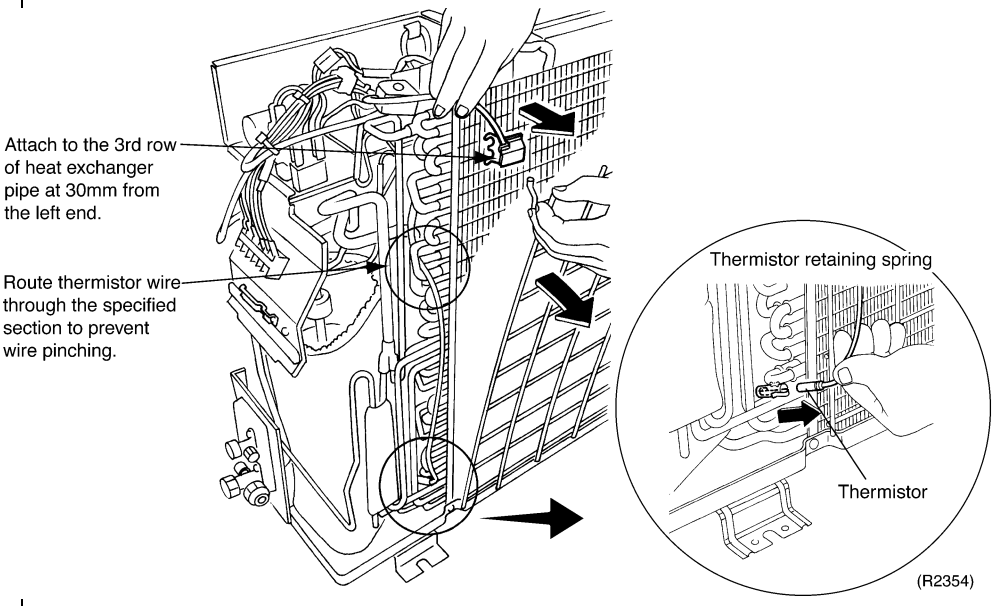
2.2 Removal of Electrical Box

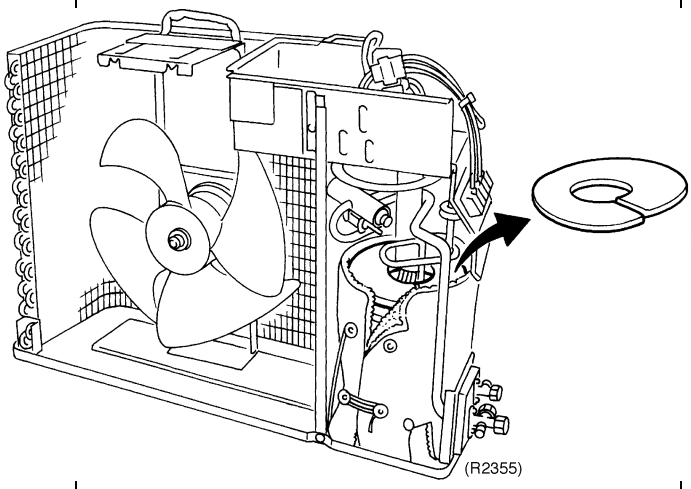
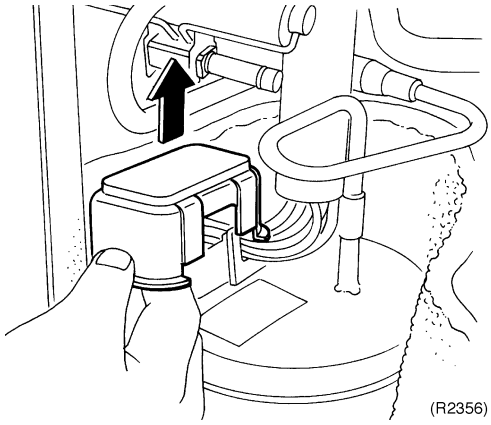
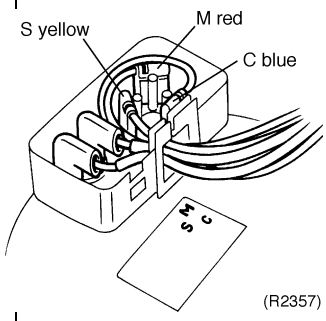
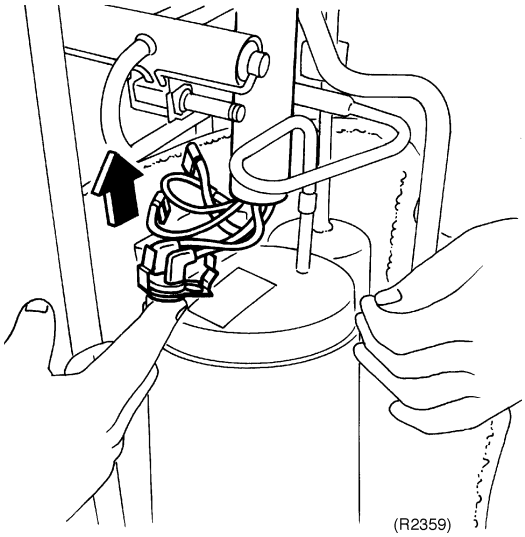
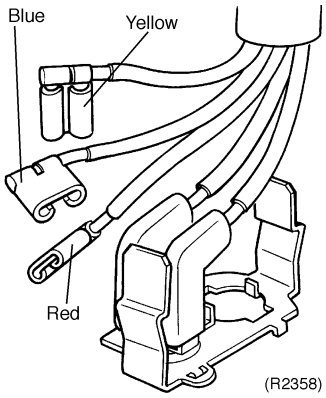
Procedure

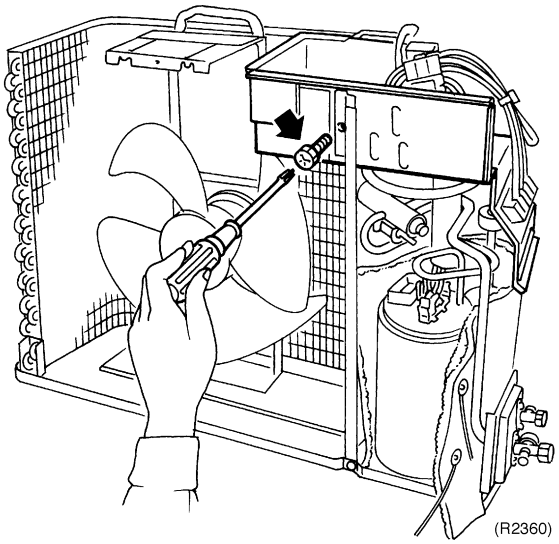
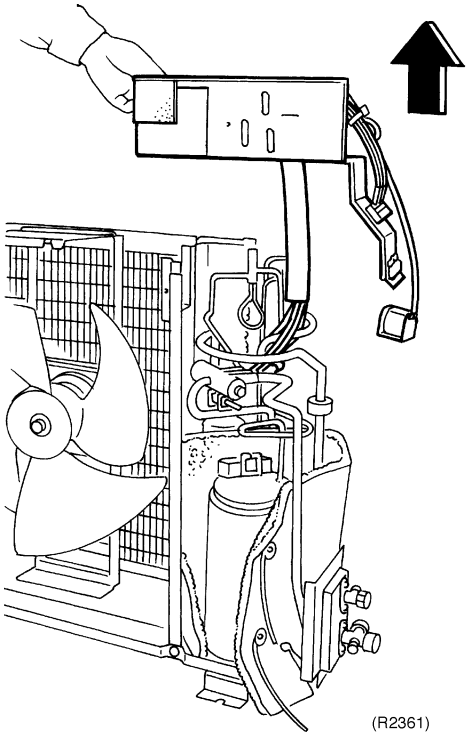
Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

Step	Procedure	Points
1	Remove the wire harness connectors from the PCB.	
2	Dismount the outdoor air thermistor and the heat exchanger thermistor.	





Step	Procedure	Points
3	Remove top insulation material from compressor.  (R2355)	■ Terminal code is printed. Do not scorch the indication with the flame of welder. Also record terminal code on a memo paper in case the indication becomes illegible.
4	Remove terminal cover.  (R2356)	 (R2357)
5	Remove compressor protective device and three terminals together with mounting plate.  (R2359)	 (R2358) ■ Connect lead wires to proper fasten terminals. S ·····Yellow M·····Red C ·····Blue

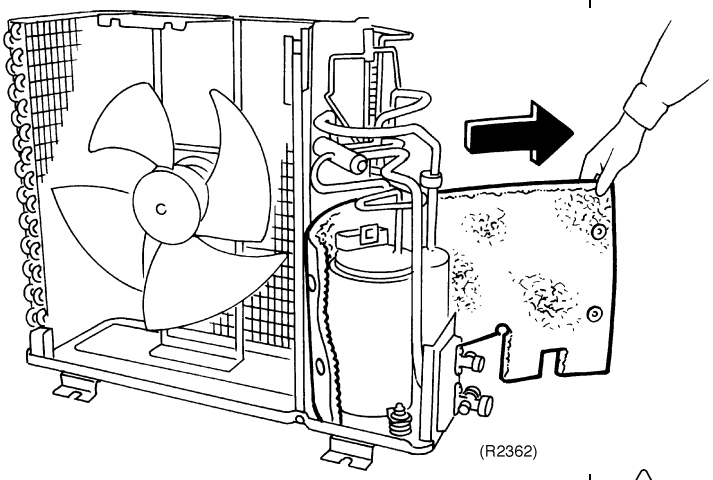
Step	Procedure		Points
6	Remove the screw.	 (R2360)	
7	Take off the electrical box.	 (R2361)	

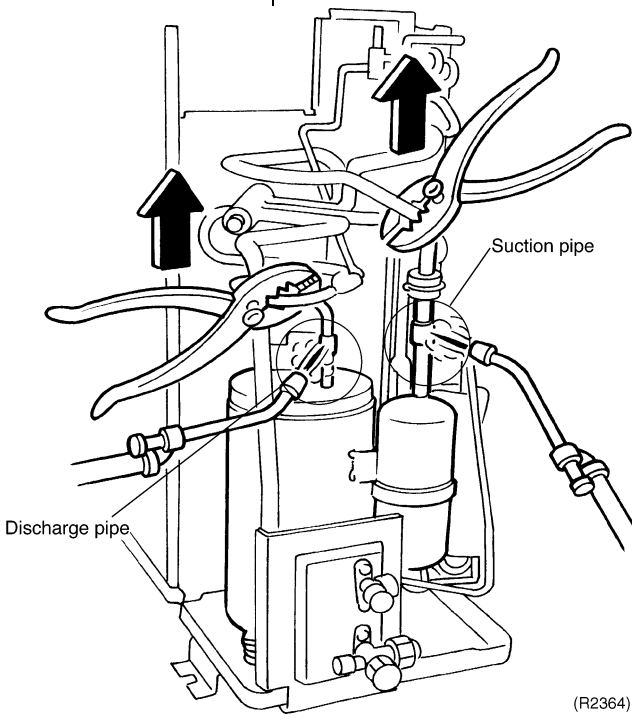
2.3 Removal of Compressor

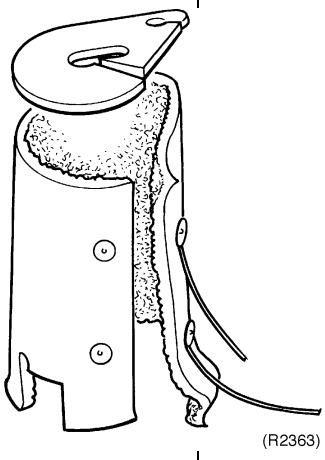
Procedure

Warning **Be sure to wait 10 minutes or more after turning off all power supplies before disassembling work.**

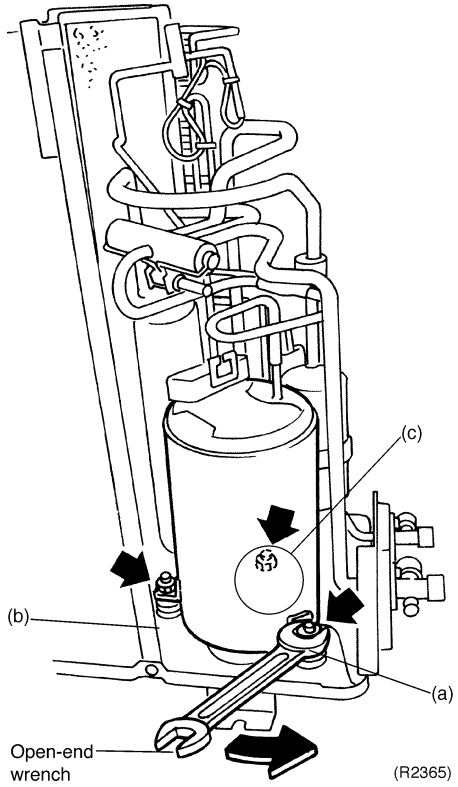
Step	Procedure	Points
■ Make sure that there is no refrigerant in the unit before disassembling.		
1	Pull out sound blanket (side insulation) from right side.	
2	Disconnect suction pipe and discharge pipe of compressor at brazed sections.	**WARNING** **If refrigerant gas leaks during servicing work, ventilate the area. (If refrigerant gas contacts flames, hazardous gas can generate.)** ■ When removing sound blanket, do not pull it with excessive force, since it is inserted between pipes.

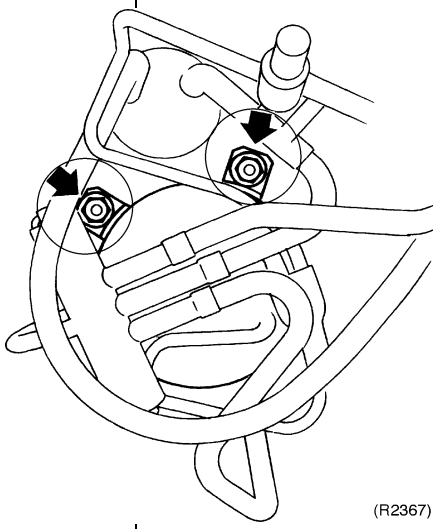


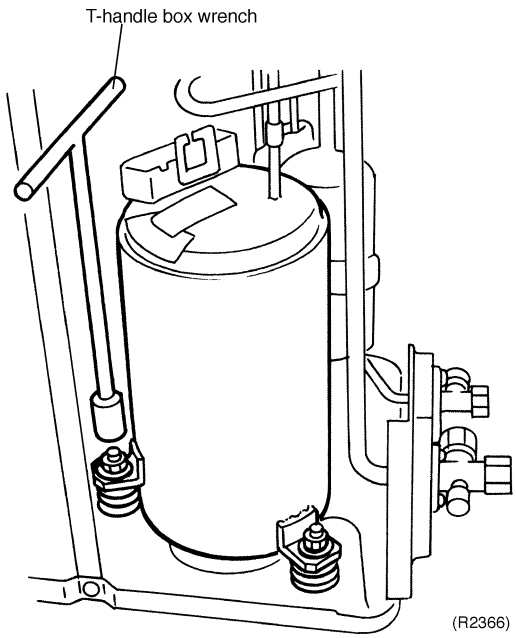




Step	Procedure	Points
3	After disconnecting refrigerant pipes, remove three washer nuts that secure compressor in place. Use open-end wrench to remove washer nut (a) located on right front side.	
4	Use T-handle box wrench to loosen nuts (b) and (c).	







Part 8
Others

1. Others

1.1 Test Run from the Remote Controller

ARC433 series

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.

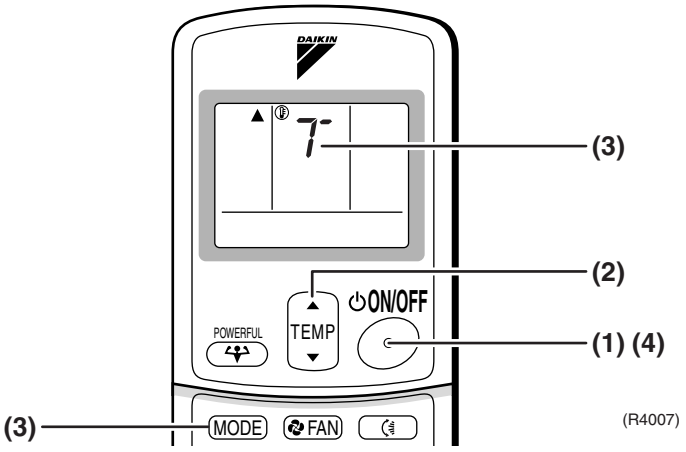
Trial Operation and Testing

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.
("7" 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

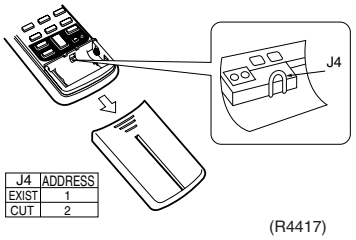
(1) Remove the electrical box.

(2) Cut the address jumper JA on the control PCB.

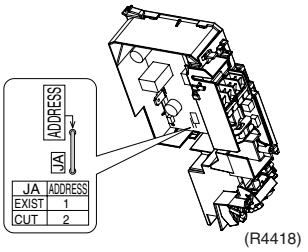
■ Wireless remote controller

(1) Slide the front cover and take it off.

(2) Cut the address jumper J4.



(R4417)



(R4418)

1.2.2 Jumper Setting

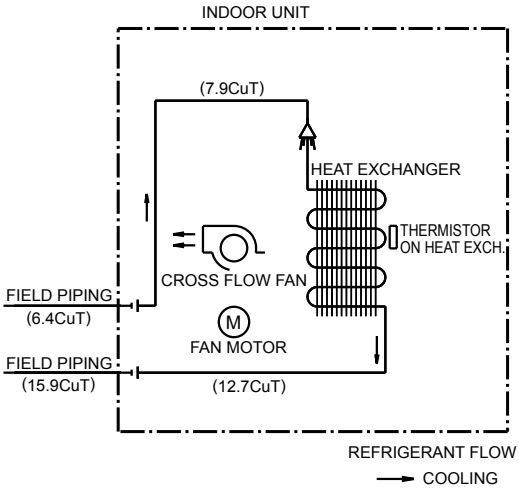
Jumper (On indoor control PCB)	Function	When connected (factory set)	When cut
JC	Power failure recovery function	Auto re-start	Unit does not resume operation after recovering from a power failure. Timer ON-OFF settings are cleared.
JB	Fan speed setting when compressor is OFF on thermostat. (effective only at cooling operation)	Fan speed setting ; Remote controller setting	Fan rpm is set to “0” <Fan stop>

Part 9
Appendix

1. Piping Diagrams

1.1 Indoor Units

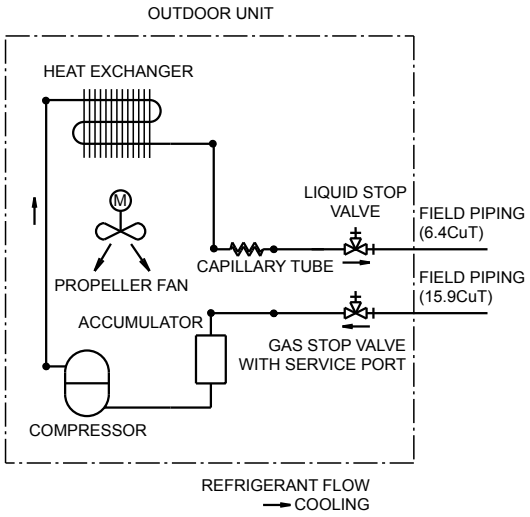
FT50FVM, FT60FVM



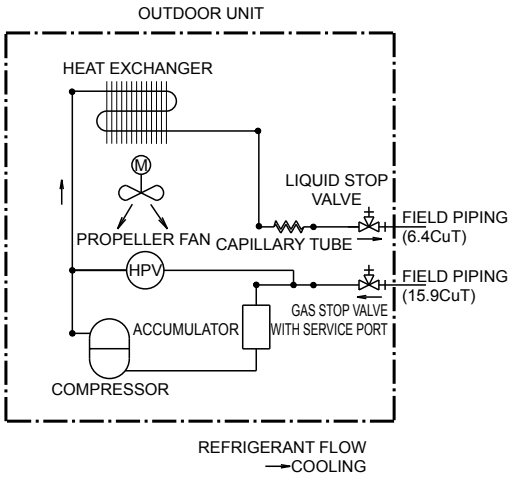
4D050919E

1.2 Outdoor Units

R50BV1, R60BV1, R50BVL, R50CV1A, R60CV1A **R60BVL**



DW521-856N

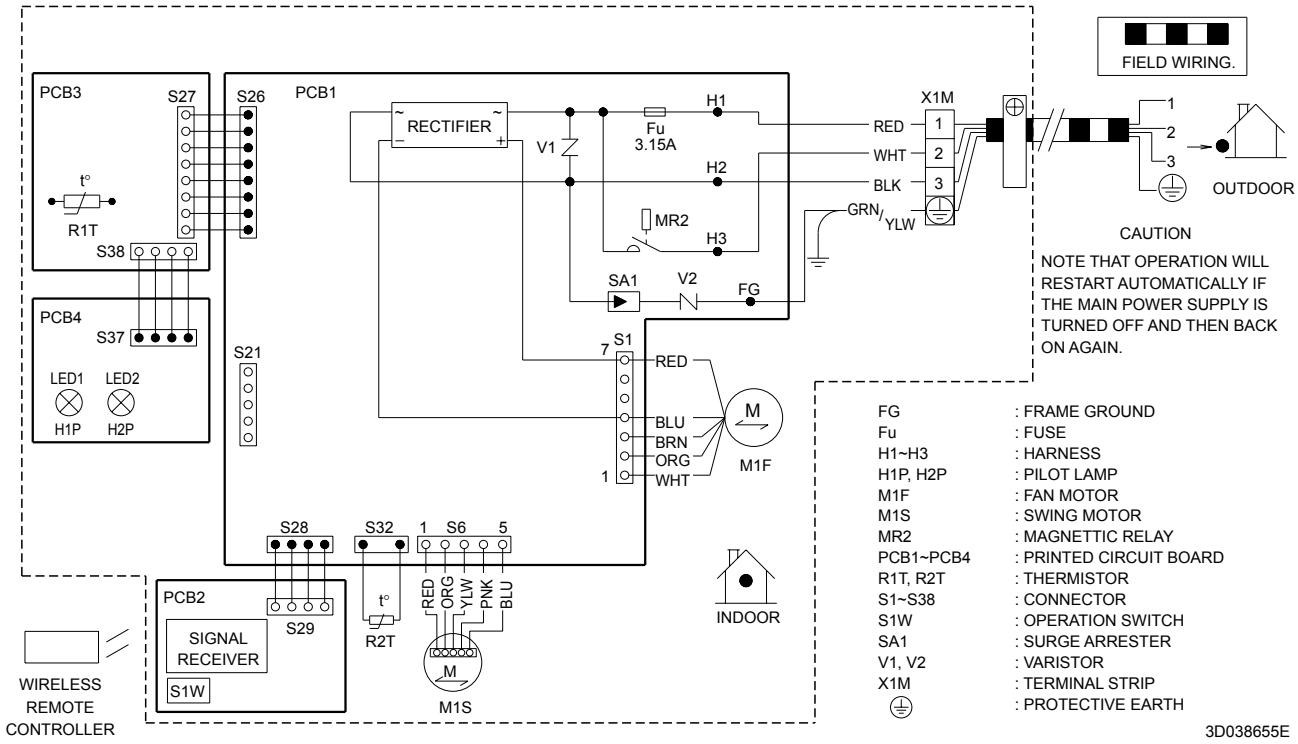


DW527-236D

2. Wiring Diagrams

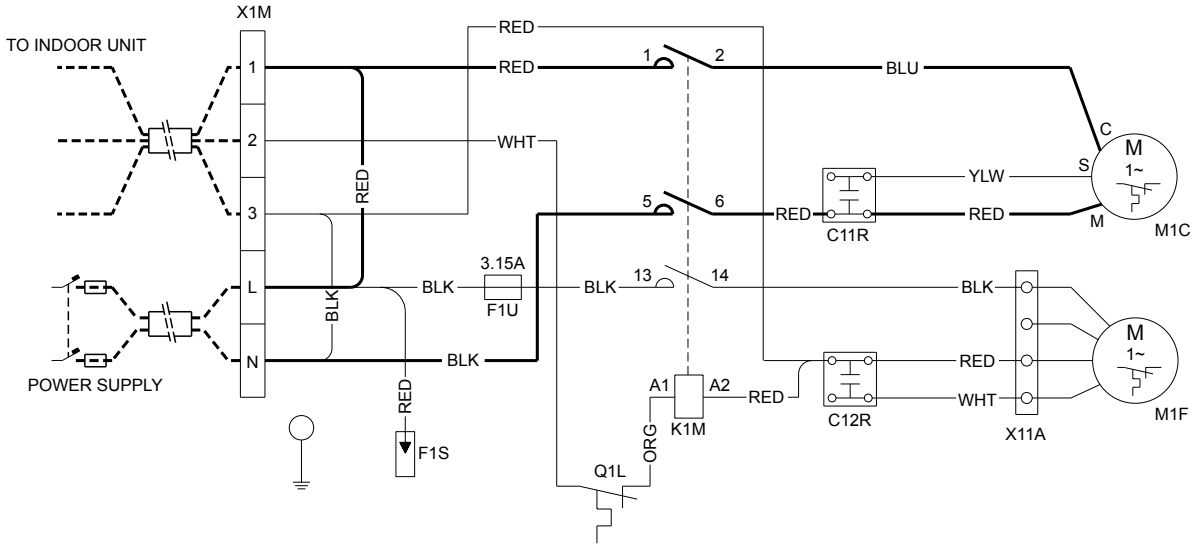
2.1 Indoor Units

FT50FVM, FT60FVM



2.2 Outdoor Units

R50BV1

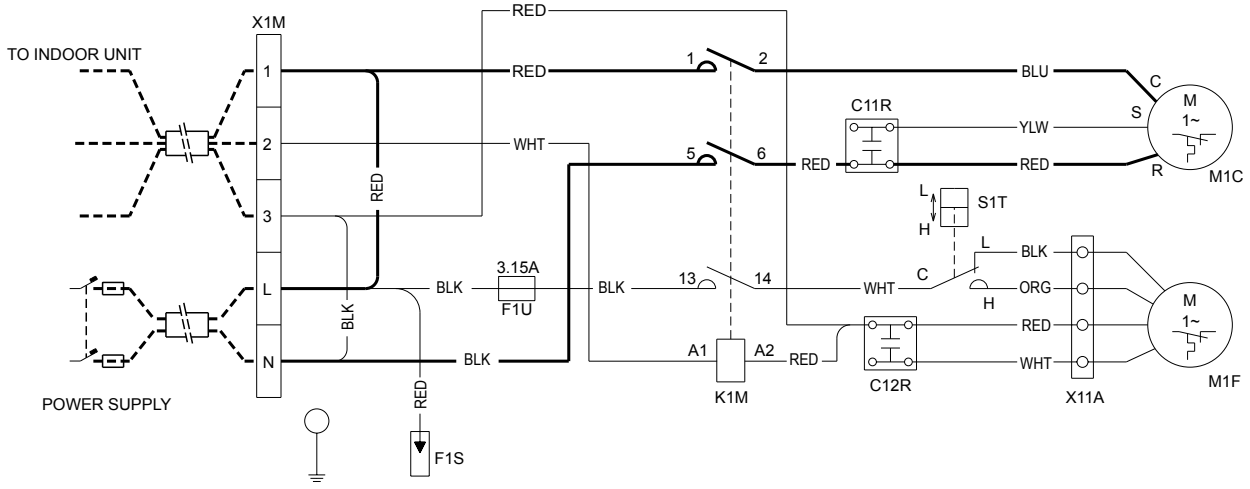


C11R, C12R : RUNNING CAPACITOR
F1U : FUSE
F1S : SURGE ARRESTER
K1M : COMPRESSOR RELAY
L : LIVE
M1C : COMPRESSOR MOTOR
M1F : FAN MOTOR
N : NEUTRAL
Q1L : OVERLOAD PROTECTOR
X11A : CONNECTOR
X1M : TERMINAL STRIP

NOTES
1. REFER TO THE NAMEPLATE FOR THE POWER REQUIREMENTS.

3D040743A

R60BV1

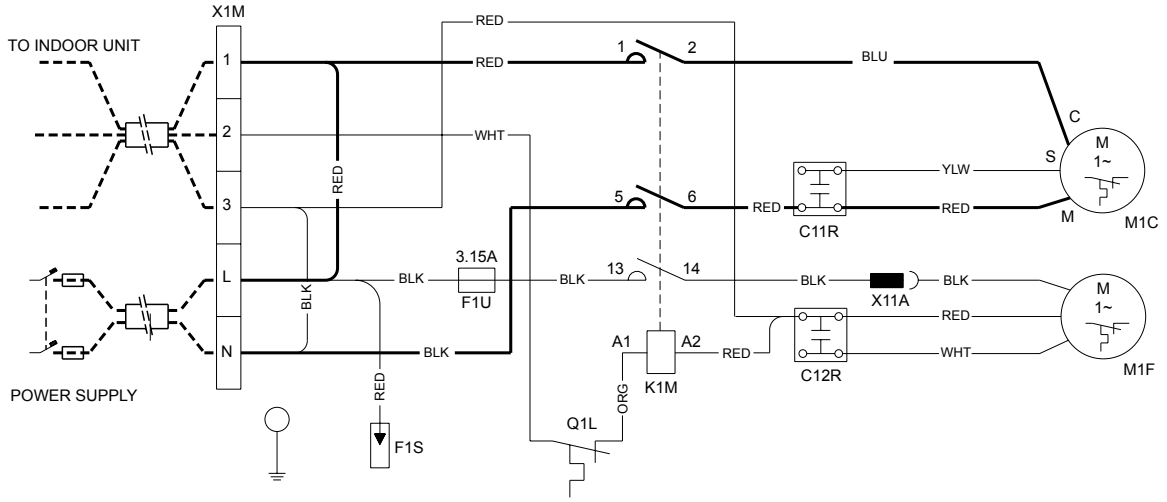


C11R, C12R : RUNNING CAPACITOR
F1S : SURGE ARRESTER
F1U : FUSE
K1M : COMPRESSOR RELAY
L : LIVE
M1C : COMPRESSOR MOTOR
M1F : FAN MOTOR
N : NEUTRAL
S1T : THERMOSTAT
X11A : CONNECTOR
X1M : TERMINAL STRIP

NOTES
1.REFER TO THE NAMEPLATE FOR THE POWER REQUIREMENTS.

3D032200A

R50BVL



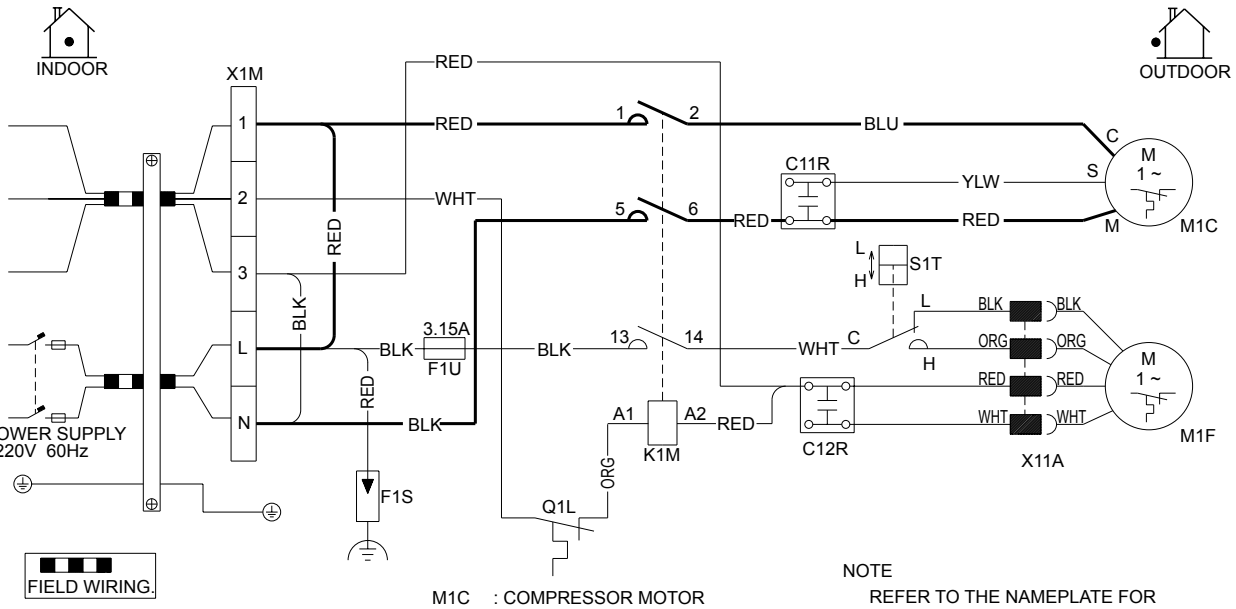
C11R, C12R : RUNNING CAPACITOR
F1U : FUSE
F1S : SURGE ARRESTER
K1M : COMPRESSOR RELAY
L : LIVE
M1C : COMPRESSOR MOTOR

M1F : FAN MOTOR
N : NEUTRAL
Q1L : OVERLOAD PROTECTOR
X11A : CONNECTOR
X1M : TERMINAL STRIP

NOTES
1.REFER TO THE NAMEPLATE FOR THE POWER REQUIREMENTS.

3D032199B

R60BVL



FIELD WIRING.

C11R,C12R :RUNNING CAPACITOR
F1S : SURGE ARRESTER
F1U : FUSE
K1M : COMPRESSOR RELAY
L : LIVE
N : NEUTRAL

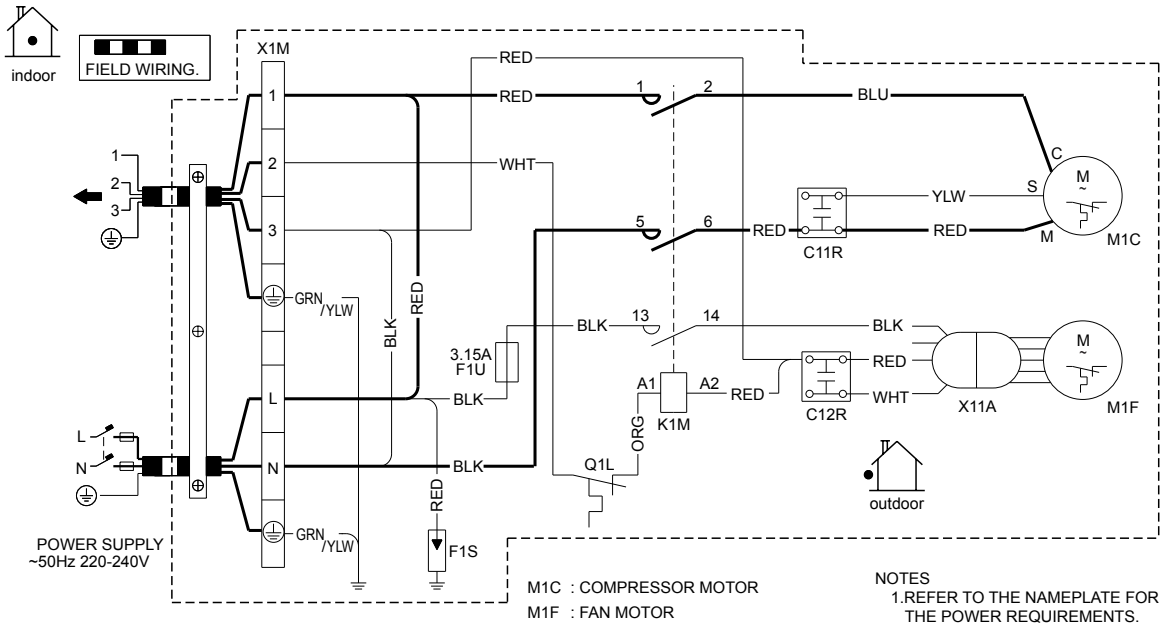
M1C : COMPRESSOR MOTOR
S1T : THERMOSTAT
M1F : FAN MOTOR
Q1L : OVERLOAD PROTECTOR
X1M : TERMINAL STRIP
X11A : CONNECTOR

⏚ PROTECTIVE EARTH

NOTE
REFER TO THE NAMEPLATE FOR THE POWER REQUIREMENTS.

3D032198C

R50CV1A



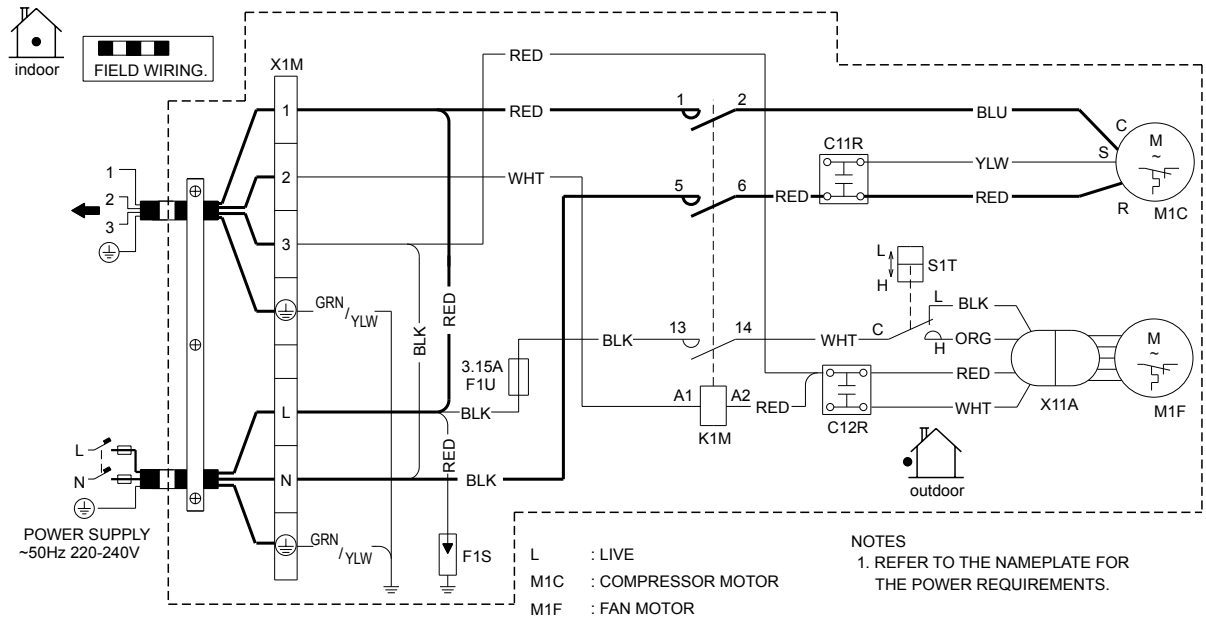
C11R, C12R : RUNNING CAPACITOR
F1S : SURGE ARRESTER
F1U : FUSE
K1M : COMPRESSOR RELAY
L : LIVE

M1C : COMPRESSOR MOTOR
M1F : FAN MOTOR
N : NEUTRAL
Q1L : OVERLOAD PROTECTOR
X11A : CONNECTOR
X1M : TERMINAL STRIP
⏚ : PROTECTIVE EARTH

NOTES
1.REFER TO THE NAMEPLATE FOR THE POWER REQUIREMENTS.

3D045730A

R60CV1A



L : LIVE
M1C : COMPRESSOR MOTOR
M1F : FAN MOTOR
N : NEUTRAL
S1T : THERMOSTAT
X11A : CONNECTOR
X1M : TERMINAL STRIP
⏚ : PROTECTIVE EARTH

C11R, C12R : RUNNING CAPACITOR
F1S : SURGE ARRESTER
F1U : FUSE
K1M : COMPRESSOR RELAY

NOTES
1. REFER TO THE NAMEPLATE FOR THE POWER REQUIREMENTS.

3D045733

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Warning

- Daikin Industries, Ltd.'s products are manufactured for export to numerous countries throughout the world. Daikin Industries, Ltd. does not have control over which products are exported to and used in a particular country. Prior to purchase, please therefore confirm with your local authorised importer, distributor and/or retailer whether this product conforms to the applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.
- 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 unauthorised 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.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

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. If you need to install the outdoor unit close to the sea shore, contact your local distributor.

JMI-0107

JQA-1452

About ISO 9001

ISO 9001 is a plant certification system defined by the International Organization for Standardization (ISO) relating to quality assurance. ISO 9001 certification covers quality assurance aspects related to the "design, development, manufacture, installation, and supplementary service" of products manufactured at the plant.

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

DAIKIN INDUSTRIES, LTD.
Head Office:
Umeda Center Bldg., 2-4-12, Nakazaki-Nishi,
Kita-ku, Osaka, 530-8323 Japan

Tokyo Office:
JR Shinagawa East Bldg., 2-18-1, Konan,
Minato-ku, Tokyo, 108-0075 Japan

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