

INDOOR UNIT

No. OBH780

SERVICE MANUAL

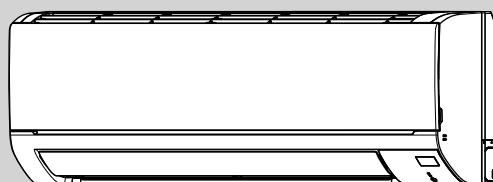
Models

MSZ-DM50VA - ER1

MSZ-DM60VA - ER1

MSZ-DM71VA - ER1

Outdoor unit service manual
MUZ-DM•VA Series (OBH781)
MXZ-DM•VA Series (OBH739)



MSZ-DM50VA



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PARTS CATALOG (OBB780)

NOTE:

RoHS compliant products have
<G> mark on the spec name plate.

Use the specified refrigerant only

Never use any refrigerant other than that specified.

Doing so may cause a burst, an explosion, or fire when the unit is being used, serviced, or disposed of.

Correct refrigerant is specified in the manuals and on the spec labels provided with our products.

We will not be held responsible for mechanical failure, system malfunction, unit breakdown or accidents caused by failure to follow the instructions.

<Preparation before the repair service>

- Prepare the proper tools.
- Prepare the proper protectors.
- Provide adequate ventilation.
- After stopping the operation of the air conditioner, turn off the power-supply breaker and remove the power plug.
- Discharge the capacitor before the work involving the electric parts.

<Precautions during the repair service>

- Do not perform the work involving the electric parts with wet hands.
- Do not pour water into the electric parts.
- Do not touch the refrigerant.
- Do not touch the hot or cold areas in the refrigeration cycle.
- When the repair or the inspection of the circuit needs to be done without turning off the power, exercise great caution not to touch the live parts.

MSZ-DM50VA - ER1

MSZ-DM60VA - ER1

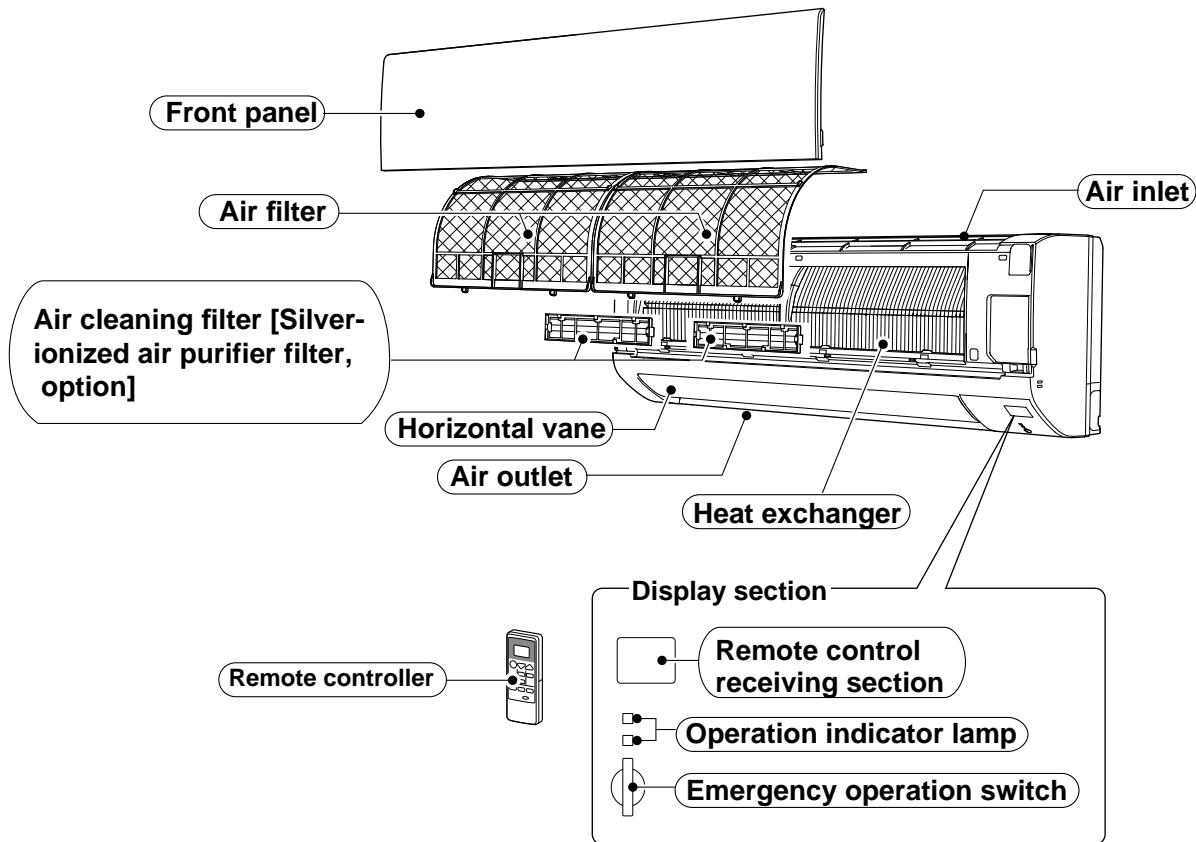
MSZ-DM71VA - ER1

1. New model

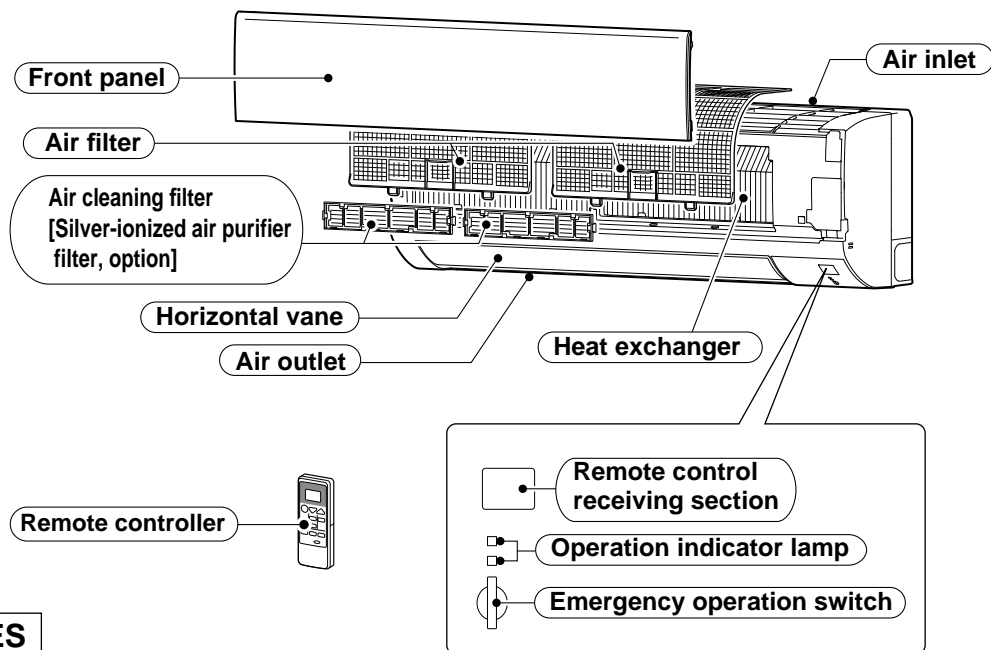
2

PART NAMES AND FUNCTIONS

MSZ-DM50VA



MSZ-DM60VA MSZ-DM71VA



ACCESSORIES

①	Installation plate	1
②	Installation plate fixing screw 4 × 25 mm	5
③	Wireless remote controller	1
④	Felt tape (For left or left-rear piping)	1
⑤	Battery (AAA) for remote controller	2

Indoor model				MSZ-DM50VA	MSZ-DM60VA	MSZ-DM71VA	
Power supply				Single phase 230 V, 50 Hz			
Breaker Capacity			A	12	16		
Electrical data	Power input *1 (Total)	Cooling	W	2,050	1,900	2,330	
		Heating		1,480	1,970	2,440	
	Running current *1 (Total)	Cooling	A	9.0	8.4	10.3	
		Heating		6.6	8.7	10.8	
	Power factor *1 (Total)	Cooling	%	99	98		
		Heating		97	98		
Starting current *1 (Total)			A	9.0	8.7	10.8	
Fan motor	Model			RC0J40-QA	RC0J30-MD		
	Current *1	Cooling	A	0.27	0.49		
		Heating		0.34	0.49		
Dimensions W × H × D			mm	799 × 290 × 232	923 × 305 × 250		
Weight			kg	9	13		
Special remarks	Air direction			5			
	Airflow	Cooling	Super High	m³/h	772	1,192	
			High		667	900	
			Med.		547	729	
			Low		380	555	598
		Heating	Super High	m³/h	861	1,192	
			High		667	957	981
			Med.		497	752	763
			Low		364	565	619
	Sound level	Cooling	Super High	dB(A)	43	50	
			High		40	44	
			Med.		36	38	
			Low		28	31	33
		Heating	Super High	dB(A)	47	49	
			High		41	44	
			Med.		34	38	
			Low		27	31	33
	Fan speed	Cooling	Super High	rpm	1,120	1,250	
			High		1,000		
			Med.		860	850	
			Low		660	690	730
		Heating	Super High	rpm	1,220	1,250	
			High		1,000	1,050	1,070
			Med.		800	870	880
			Low		640	700	750
Fan speed regulator			4				
Remote controller model			RH16A				

NOTE : Test conditions are based on ISO 5151.

Cooling : Indoor Dry-bulb temperature 27°C

Wet-bulb temperature 19°C

Outdoor Dry-bulb temperature 35°C

Heating : Indoor Dry-bulb temperature 20°C

Wet-bulb temperature 6°C

Outdoor Dry-bulb temperature 7°C

*1 Measured under rated operating frequency.

Specifications and rated conditions of main electric parts

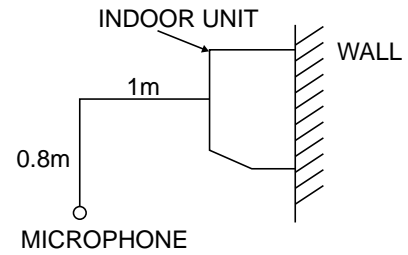
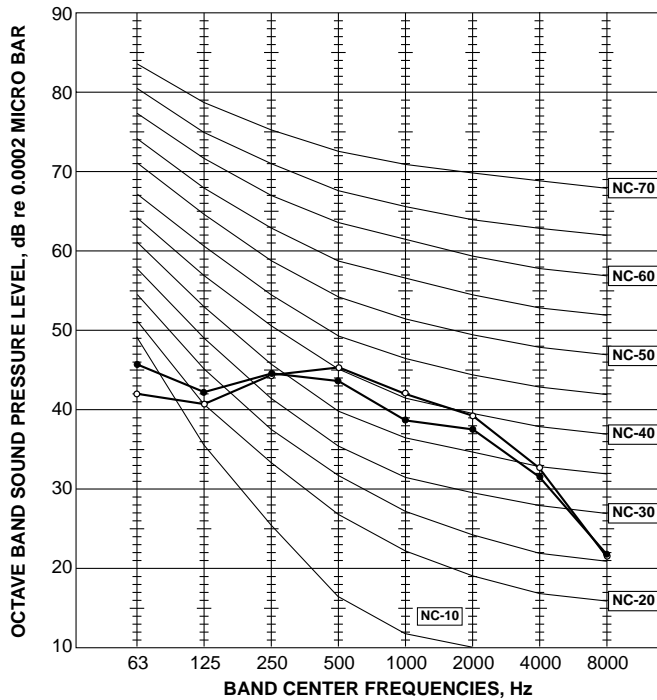
Fuse	(F11)	T3.15AL250V
Horizontal vane motor	(MV)	12 V DC
Varistor	(NR11)	470 V
Terminal block	(TB)	5P

MSZ-DM50VA

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
Super High	COOLING	45	●—●
	HEATING	47	○—○

Test conditions

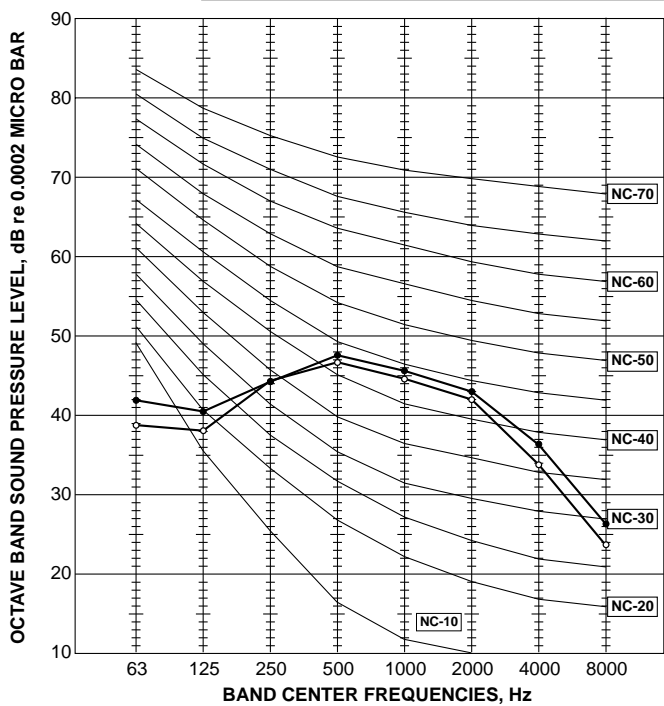
Cooling : Dry-bulb temperature 27°C Wet-bulb temperature 19°C
 Heating : Dry-bulb temperature 20°C





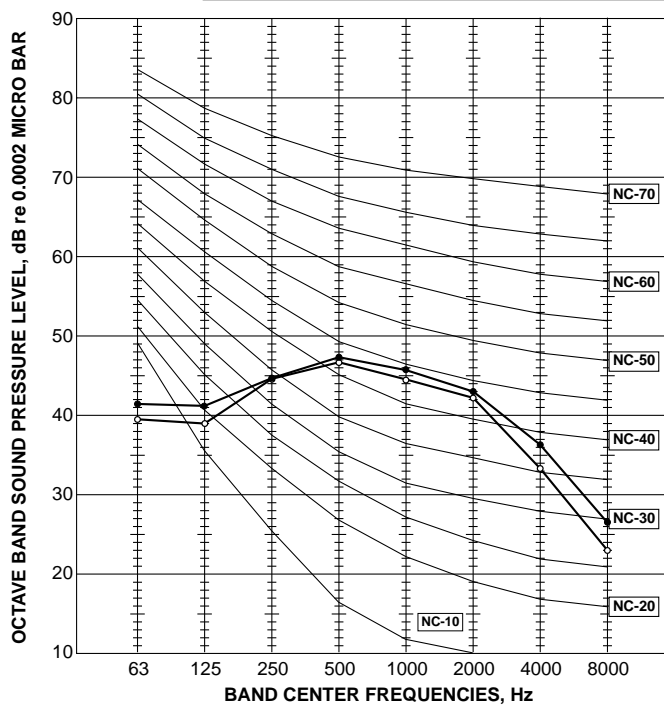
MSZ-DM60VA

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
Super High	COOLING	50	● — ●
	HEATING	49	○ — ○

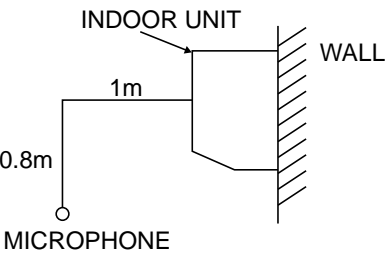


MSZ-DM71VA

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
Super High	COOLING	50	● — ●
	HEATING	49	○ — ○



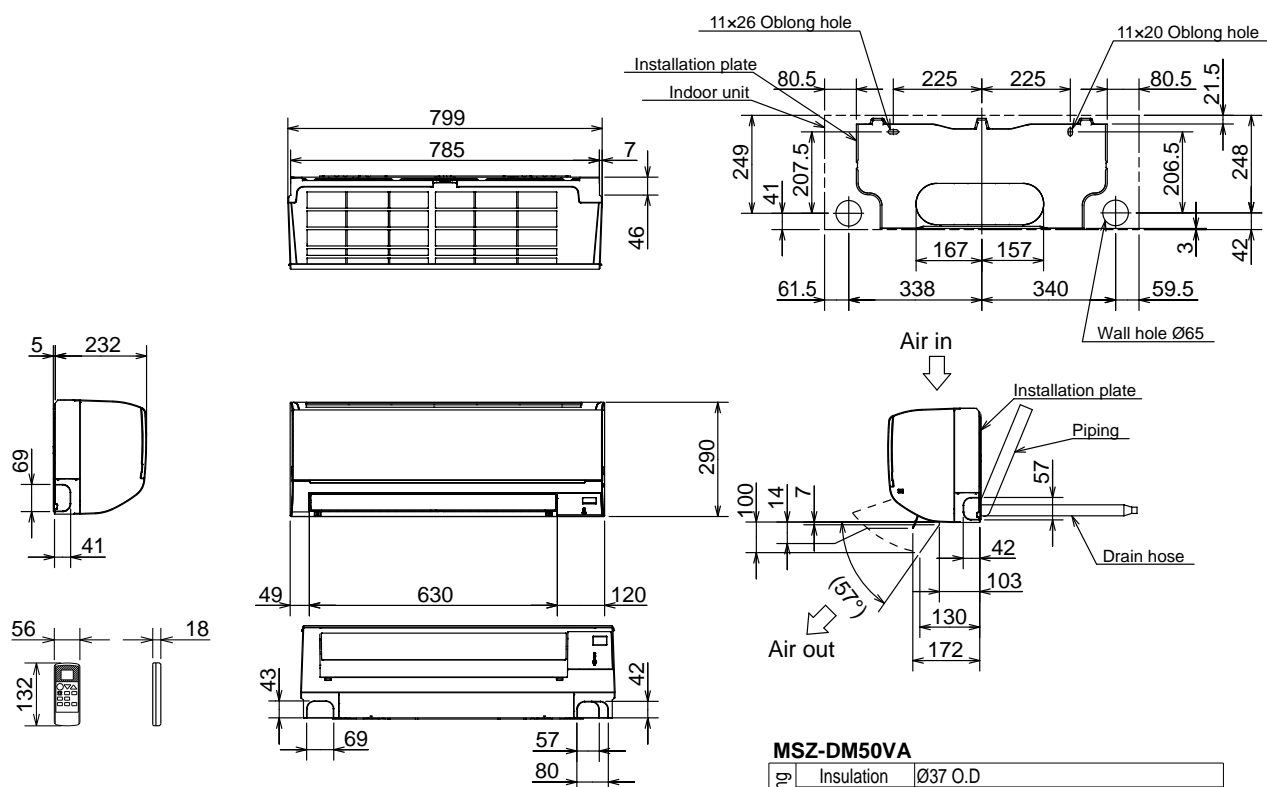
Test conditions
Cooling : Dry-bulb temperature 27°C Wet-bulb temperature 19°C
Heating : Dry-bulb temperature 20°C



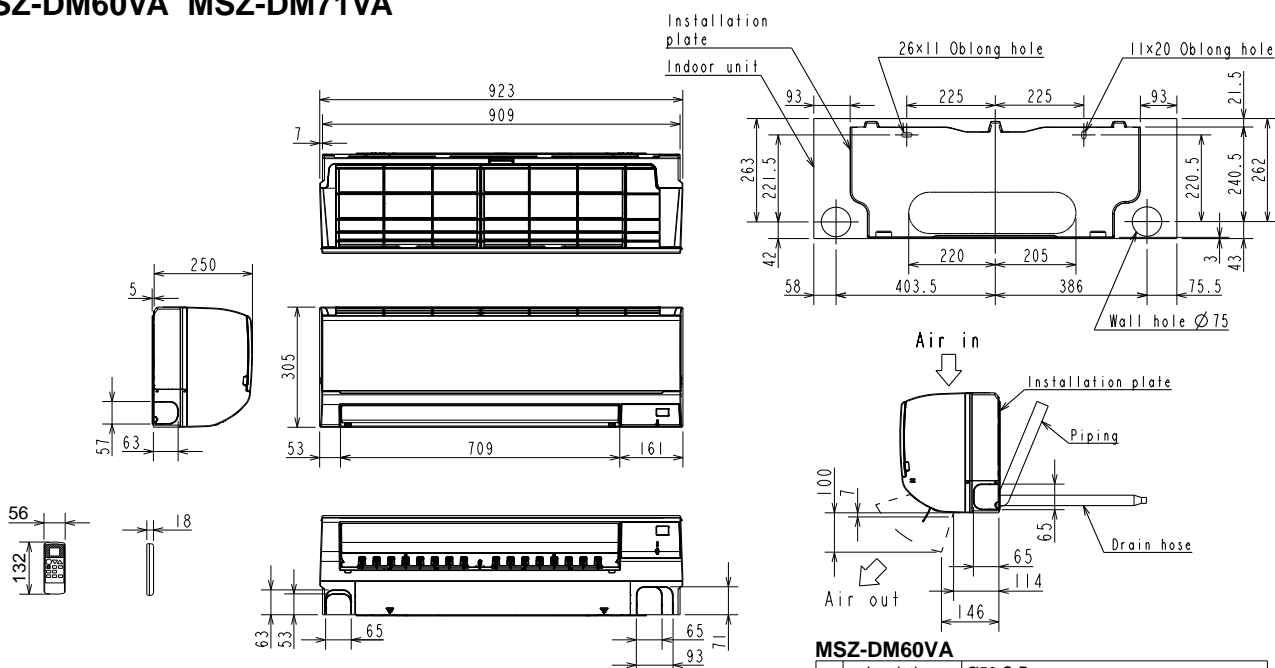
OUTLINES AND DIMENSIONS

MSZ-DM50VA

Unit: mm

**MSZ-DM50VA**

Piping	Insulation	Ø37 O.D
	Liquid line	Ø7.0 - 0.39m (Flared connection Ø6.35)
	Gas line	Ø9.52 - 0.34m (Flared connection Ø12.7)
	Drain hose	Insulation Ø28 Connected part Ø16 O.D

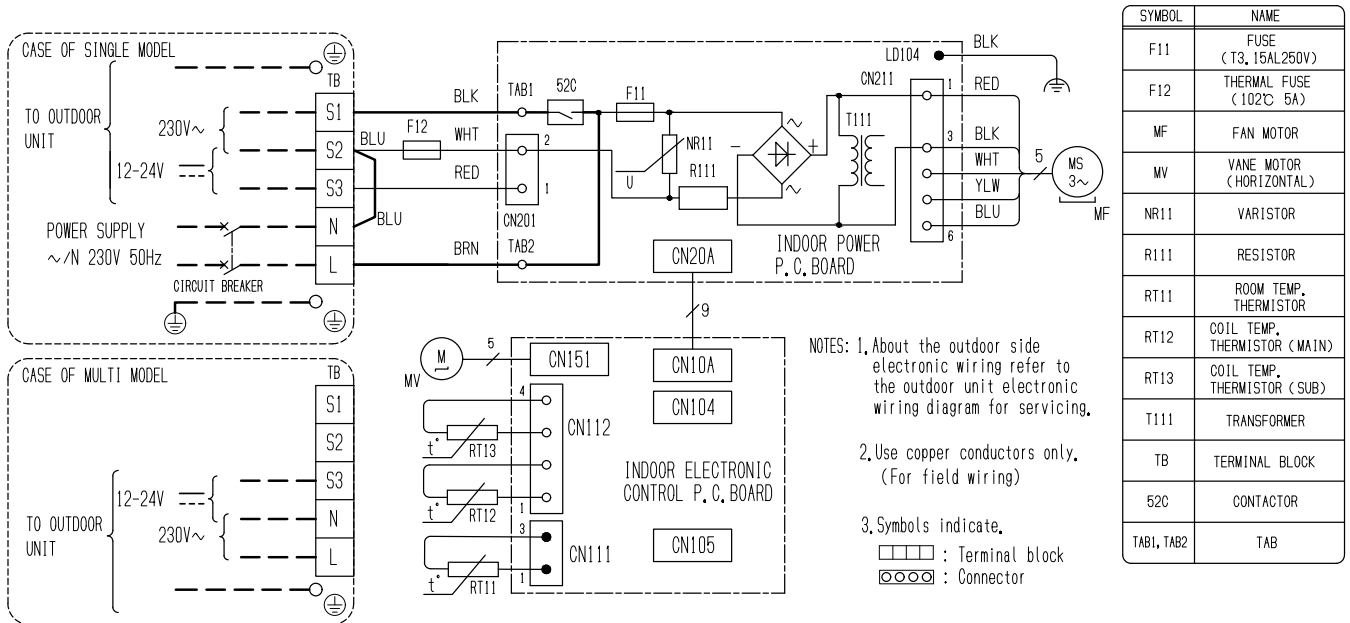
MSZ-DM60VA MSZ-DM71VA**MSZ-DM60VA**

Piping	Insulation	Ø50 O.D
	Liquid line	Ø8 - 0.39m (Flared connection Ø6.35)
	Gas line	Ø12 - 0.34m (Flared connection Ø15.88)
	Drain hose	Insulation Connected part Ø16 O.D

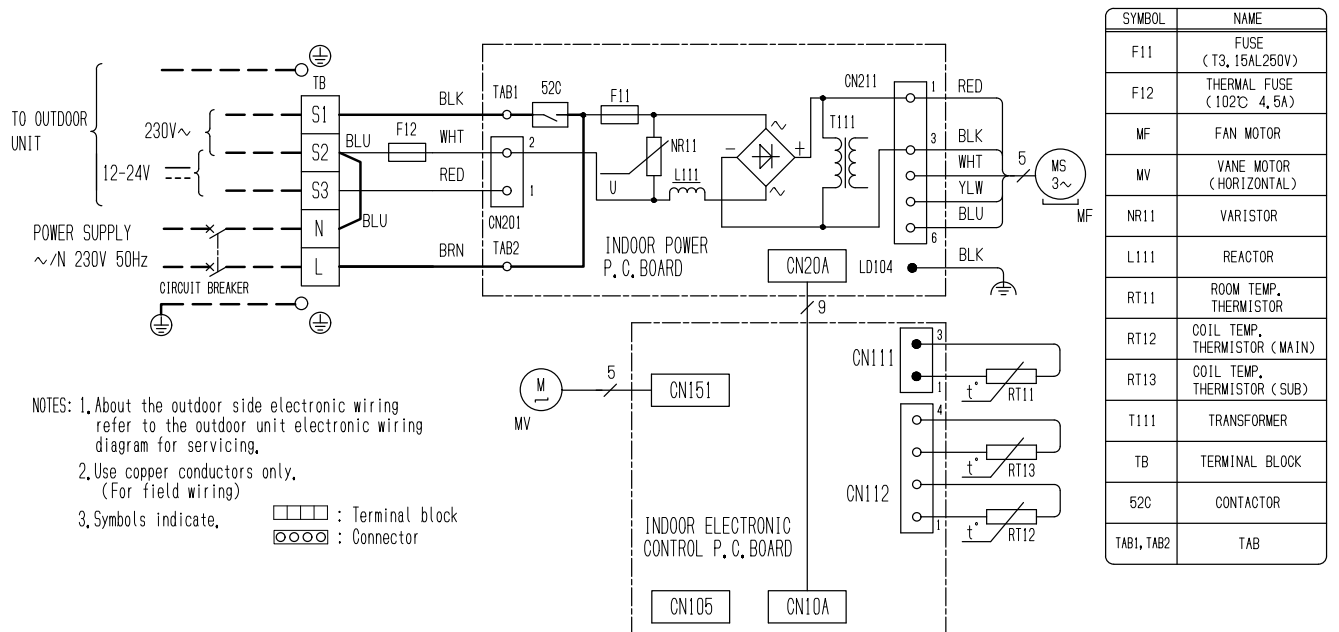
MSZ-DM71VA

Piping	Insulation	Ø50 O.D
	Liquid line	Ø8 - 0.39m (Flared connection Ø9.52)
	Gas line	Ø12 - 0.34m (Flared connection Ø15.88)
	Drain hose	Insulation Connected part Ø16 O.D

MSZ-DM50VA

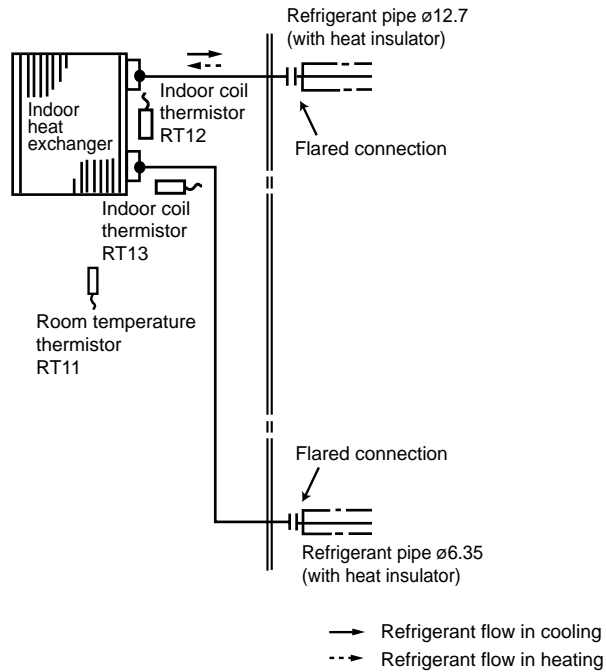


MSZ-DM60VA MSZ-DM71VA

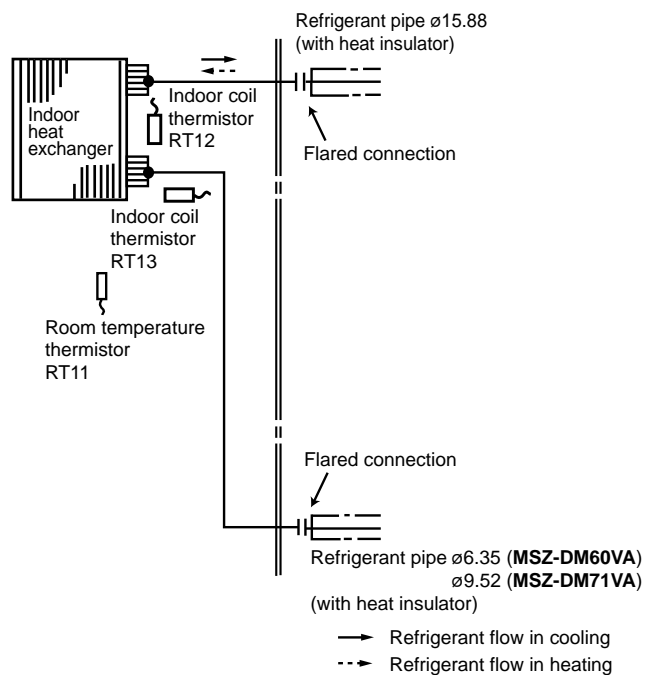


MSZ-DM50VA

Unit: mm



MSZ-DM60VA MSZ-DM71VA



MSZ-DM50VA MSZ-DM60VA MSZ-DM71VA

8-1. TIMER SHORT MODE

For service, the following set time can be shortened by bridging the timer short mode point on the electronic control P.C. board. (Refer to 10-7.)

Set time : 3-minute → 3-second (It takes 3 minutes for the compressor to start operation. However, the starting time is shortened by bridging the timer short mode point.)

NOTE: While the relay 52C is ON, the compressor starting time cannot be shortened.

8-2. P.C. BOARD MODIFICATION FOR INDIVIDUAL OPERATION

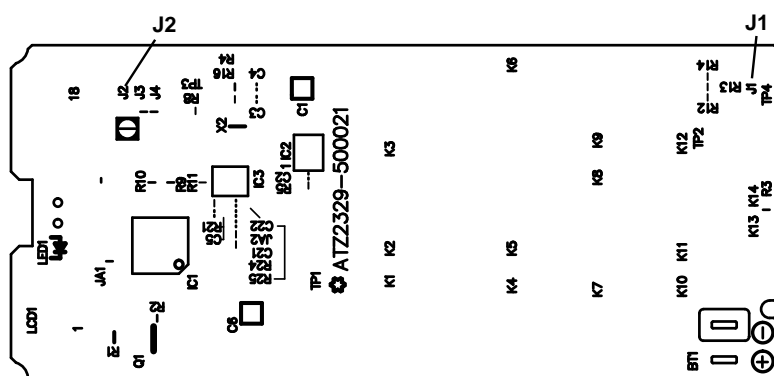
A maximum of 4 indoor units with wireless remote controllers can be used in a room.

In this case, to operate each indoor unit individually by each remote controller, P.C. boards of remote controller must be modified according to the number of the indoor unit.

How to modify the remote controller P.C. board

Remove batteries before modification.

The board has a print as shown below :



8-3. AUTO RESTART FUNCTION

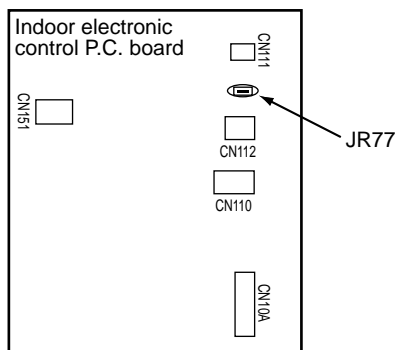
When the indoor unit is controlled with the remote controller, the operation mode, the set temperature, and the fan speed are memorized by the indoor electronic control P.C. board. "AUTO RESTART FUNCTION" automatically starts operation in the same mode just before the shutoff of the main power.

Operation

- ① If the main power has been cut, the operation settings remain.
- ② After the power is restored, the unit restarts automatically according to the memory.
(However, it takes at least 3 minutes for the compressor to start running.)

How to disable "AUTO RESTART FUNCTION"

- ① Turn off the main power for the unit.
- ② Cut the Jumper wire to JR77 on the indoor electronic control P.C. board. (Refer to 10-7.)

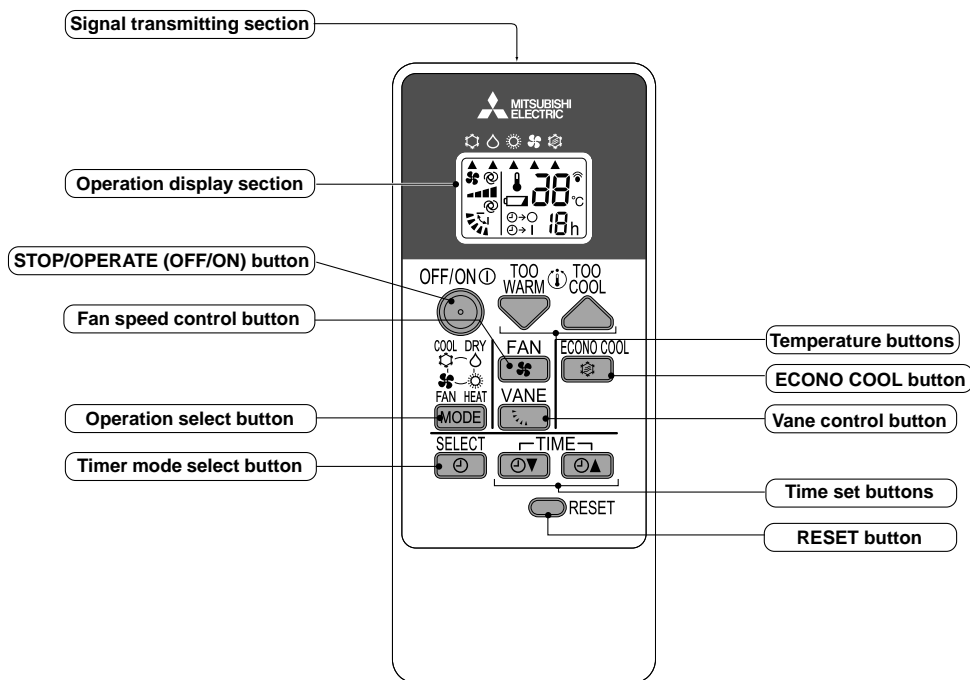


NOTE:

- The operation settings are memorized when 10 seconds have passed after the indoor unit was operated with the remote controller.
- If main power is turned OFF or a power failure occurs while AUTO START/STOP timer is active, the timer setting is cancelled.
- If the unit has been turned OFF with the remote controller before power failure, the auto restart function does not work as the power button of the remote controller is off.
- To prevent the breaker from tripping OFF due to the rush of starting current, systematize other home appliance not to turn ON at the same time.
- When some air conditioners are connected to the same supply system, if they are operated before power failure, the starting current of all the compressors may flow simultaneously at restart.
Therefore, the special countermeasures are required to prevent the main voltage-drop or the rush of the starting current by adding to the system that allows the units to start one by one.

MSZ-DM50VA MSZ-DM60VA MSZ-DM71VA

WIRELESS REMOTE CONTROLLER



NOTE : Last setting will be stored after the unit is turned OFF with the remote controller. Indoor unit receives the signal of the remote controller with beeps.

INDOOR UNIT DISPLAY SECTION

Operation Indicator lamp

The operation indicator at the right side of the indoor unit indicates the operation state.

- The following indication applies regardless of shape of the indication.

Indication	Operation state	Room temperature
	The unit is operating to reach the set temperature	About 2°C or more away from set temperature
	The room temperature is approaching the set temperature	About 1 to 2°C from set temperature
	Standby mode (Only during multi system operation)	—

Lit
 Blinking
 Not lit

9-1. COOL (❄️) OPERATION

- Press STOP/OPERATE/ (OFF/ON) button.
OPERATION INDICATOR lamp of the indoor unit turns on with a beep tone.
- Select COOL mode with OPERATION SELECT button.
- Press TEMPERATURE buttons (TOO WARM or TOO COOL button) to select the desired temperature.
The setting range is 16 ~ 31°C.

1. Coil frost prevention

The compressor operational frequency is controlled by the temperature of the indoor heat exchanger to prevent the coil from frosting.

When the temperature of indoor heat exchanger becomes too low, the coil frost prevention mode works. The indoor fan operates at the set speed and the compressor stops. This mode continues until the temperature of indoor heat exchanger rises.

9-2. DRY (△) OPERATION

- (1) Press STOP/OPERATE/ (OFF/ON) button.
OPERATION INDICATOR lamp of the indoor unit turns on with a beep tone.
- (2) Select DRY mode with OPERATION SELECT button.
- (3) The set temperature is determined from the initial room temperature.

1. Coil frost prevention

Coil frost prevention works the same way as that in COOL mode. (9-1.1.)

9-3. HEAT (☀) OPERATION

- (1) Press STOP/OPERATE/ (OFF/ON) button.
OPERATION INDICATOR lamp of the indoor unit turns on with a beep tone.
- (2) Select HEAT mode with OPERATION SELECT button.
- (3) Press TEMPERATURE buttons (TOO WARM or TOO COOL button) to select the desired temperature.
The setting range is 16 ~ 31°C.

1. Cold air prevention control

When the compressor is not operating or is starting, and the temperature of indoor heat exchanger and/or the room temperature is low or when defrosting is being done, the indoor fan will stop or rotate in Very Low speed.

2. High pressure protection

The compressor operational frequency is controlled by the temperature of the indoor heat exchanger to prevent the condensing pressure from increasing excessively.

When the temperature of indoor heat exchanger becomes too high, the high pressure protection works.

The indoor fan operates following the cold air prevention control. This mode continues until the temperature of indoor heat exchanger falls.

3. Defrosting

Defrosting starts when the temperature of outdoor heat exchanger becomes too low.

The compressor stops once, the indoor/outdoor fans stop, the 4-way valve reverses, and the compressor re-starts.

This mode continues until the temperature of outdoor heat exchanger rises or the fixed time passes.

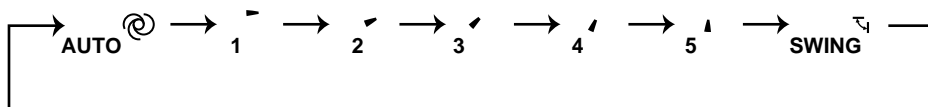
9-4. AUTO VANE OPERATION

1. Horizontal vane

- (1) Vane motor drive

These models are equipped with a stepping motor for the horizontal vane. The rotating direction, speed, and angle of the motor are controlled by pulse signals (approximately 12 V) transmitted from indoor microprocessor.

- (2) The horizontal vane angle and mode change as follows by pressing VANE CONTROL button.



- (3) Positioning

To confirm the standard position, the vane moves until it touches the vane stopper. Then the vane is set to the selected angle.

Confirmation of standard position is performed in the following cases:

- (a) When the operation starts or finishes (including timer operation).
- (b) When the test run starts.
- (c) When standby mode (only during multi system operation) starts or finishes.

- (4) VANE AUTO (⊙) mode

In VANE AUTO mode, the microprocessor automatically determines the vane angle to make the optimum room temperature distribution.

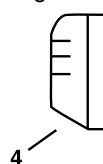
In COOL and DRY operation

Vane angle is fixed to Horizontal position.



In HEAT operation

Vane angle is fixed to Angle 4.



(5) STOP (operation OFF) and ON TIMER standby

In the following cases, the horizontal vane returns to the closed position.

- (a) When STOP/OPERATE/ (OFF/ON) button is pressed (POWER OFF).
- (b) When the operation is stopped by the emergency operation.
- (c) When ON TIMER is ON standby.

(6) Dew prevention

During COOL or DRY operation with the vane angle at Angle 3 ~ 5 when the compressor cumulative operation time exceeds 1 hour, the vane angle automatically changes to Angle 2 for dew prevention.

(7) SWING (↕) mode

By selecting SWING mode with VANE CONTROL button, the horizontal vane swings vertically.

(8) Cold air prevention in HEAT operation.

The horizontal vane position is set to Upward.

NOTE: When 2 or more indoor units are operated with multi outdoor unit, even if any indoor unit turns thermostat off, this control does not work in the indoor unit.

(9) ECONO COOL (🌀) operation (ECONomical operation)

When ECONO COOL button is pressed in COOL mode, set temperature is automatically set 2°C higher.

Also the horizontal vane swings in various cycle.


SWING operation makes you feel cooler than set temperature. So, even though the set temperature is higher, the air conditioner can keep comfort. As a result, energy can be saved.

ECONO COOL operation is cancelled when ECONO COOL button is pressed once again or VANE CONTROL button is pressed or change to other operation mode.

9-5. TIMER OPERATION (ON/OFF TIMER)



1. How to set the timer

(1) Press STOP/OPERATE/ (OFF/ON) button to start the air conditioner.

(2) Select the timer mode by pressing the  button during operation.

Each time this button is pressed, the timer mode is changed in sequence:

🕒 (OFF TIMER) → 🕒 | (ON TIMER) → TIMER RELEASE

(3) Set the time of the timer using the   button.

Each time this button is pressed, the set time increase or decrease by 1 hour to 12 hours.

2. To release the timer

Press the  button until 🕒 (OFF TIMER) and 🕒 | (ON TIMER) are not displayed.

NOTE :

- The OFF TIMER and the ON TIMER cannot be set at the same time.
- The displayed time is the time remaining and will decrease in 1-hour increments as time passes.

9-6. EMERGENCY/TEST OPERATION

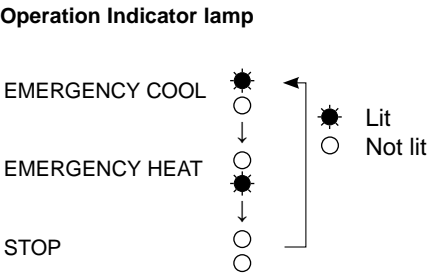
In the case of test run operation or emergency operation, use EMERGENCY OPERATION switch on the right side of the indoor unit. Emergency operation is available when the remote controller is missing or has failed, or when the batteries in the remote controller are running down. The unit will start and OPERATION INDICATOR lamp will light up. The first 30 minutes of operation is the test run operation. This operation is for servicing. The indoor fan runs at High speed and the temperature control does not work. After 30 minutes of test run operation, the system shifts to EMERGENCY COOL/HEAT MODE with a set temperature of 24°C. The fan speed shifts to Med. The coil frost prevention works even in the test run or the emergency operation. In the test run or emergency operation, the horizontal vane operates in VANE AUTO (@) mode. Emergency operation continues until EMERGENCY OPERATION switch is pressed once or twice or the unit receives any signal from the remote controller. In the latter case, normal operation will start.

NOTE: Do not press EMERGENCY OPERATION switch during normal operation.



Operation mode	COOL	HEAT
Set temperature	24°C	24°C
Fan speed	Med.	Med.
Horizontal vane	Auto	Auto

The operation mode is indicated by the Operation Indicator lamp as follows:



9-7. 3-MINUTE TIME DELAY OPERATION

When the system turns OFF, compressor will not restart for 3 minutes as 3-minute time delay function operates to protect compressor from overload.

MSZ-DM50VA MSZ-DM60VA MSZ-DM71VA

10-1. CAUTIONS ON TROUBLESHOOTING

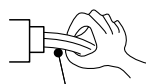
1. Before troubleshooting, check the following:

- 1) Check the power supply voltage.
- 2) Check the indoor/outdoor connecting wire for miswiring.

2. Take care of the following during servicing

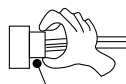
- 1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, and then after confirming the horizontal vane is closed, turn OFF the breaker and/or disconnect the power plug.
- 2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the P.C. board.
- 3) When removing the P.C. board, hold the edge of the board with care NOT to apply stress on the components.
- 4) When connecting or disconnecting the connectors, hold the connector housing. DO NOT pull the lead wires.

<Incorrect>



Lead wiring

<Correct>



Connector housing

3. Troubleshooting procedure

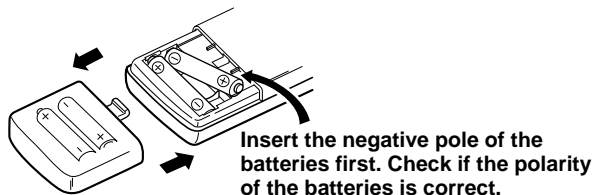
- 1) Check if the OPERATION INDICATOR lamp on the indoor unit is flashing ON and OFF to indicate an abnormality. To make sure, check how many times the OPERATION INDICATOR lamp is flashing ON and OFF before starting service work.
- 2) Before servicing, check that the connector and terminal are connected properly.
- 3) When the P.C. board seems to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
- 4) When troubleshooting, Refer to 10-2, 10-3 and 10-4.

4. How to replace batteries

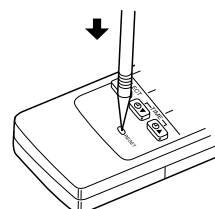
Weak batteries may cause the remote controller malfunction.

In this case, replace the batteries to operate the remote controller normally.

- ① Remove the back lid and insert batteries. Then reattach the back lid.



- ② Press RESET button with a thin instrument, and then use the remote controller.



NOTE: 1. If RESET button is not pressed, the remote controller may not operate correctly.

2. This remote controller has a circuit to automatically reset the microcomputer when batteries are replaced. This function is equipped to prevent the microcomputer from malfunctioning due to the voltage drop caused by the battery replacement.
3. Do not use the leaking batteries.

10-2. FAILURE MODE RECALL FUNCTION

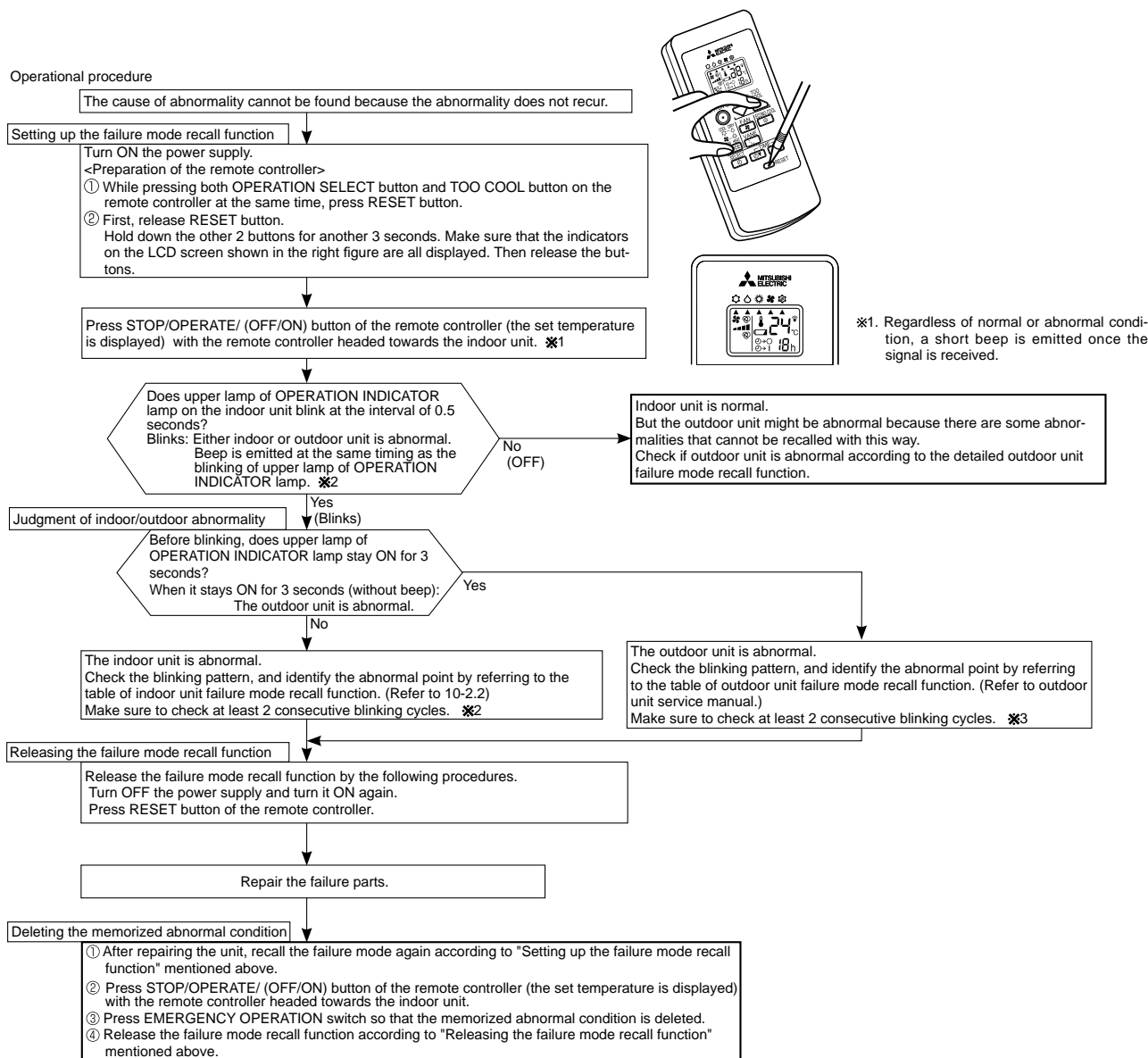
Outline of the function

This air conditioner can memorize the abnormal condition which has occurred once.

Even though LED indication listed on the troubleshooting check table (10-4.) disappears, the memorized failure details can be recalled.

This mode is very useful when the unit needs to be repaired for the abnormality which does not recur.

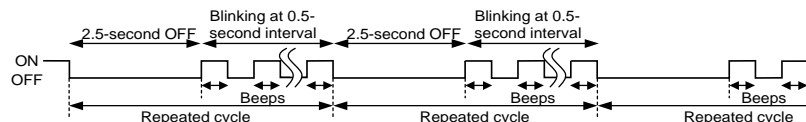
1. Flow chart of failure mode recall function for the indoor/outdoor unit



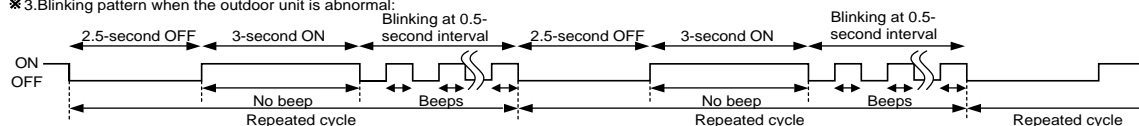
NOTE: 1. Make sure to release the failure mode recall function after it is set up, otherwise the unit cannot operate properly.

2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2. Blinking pattern when the indoor unit is abnormal:



※3. Blinking pattern when the outdoor unit is abnormal:



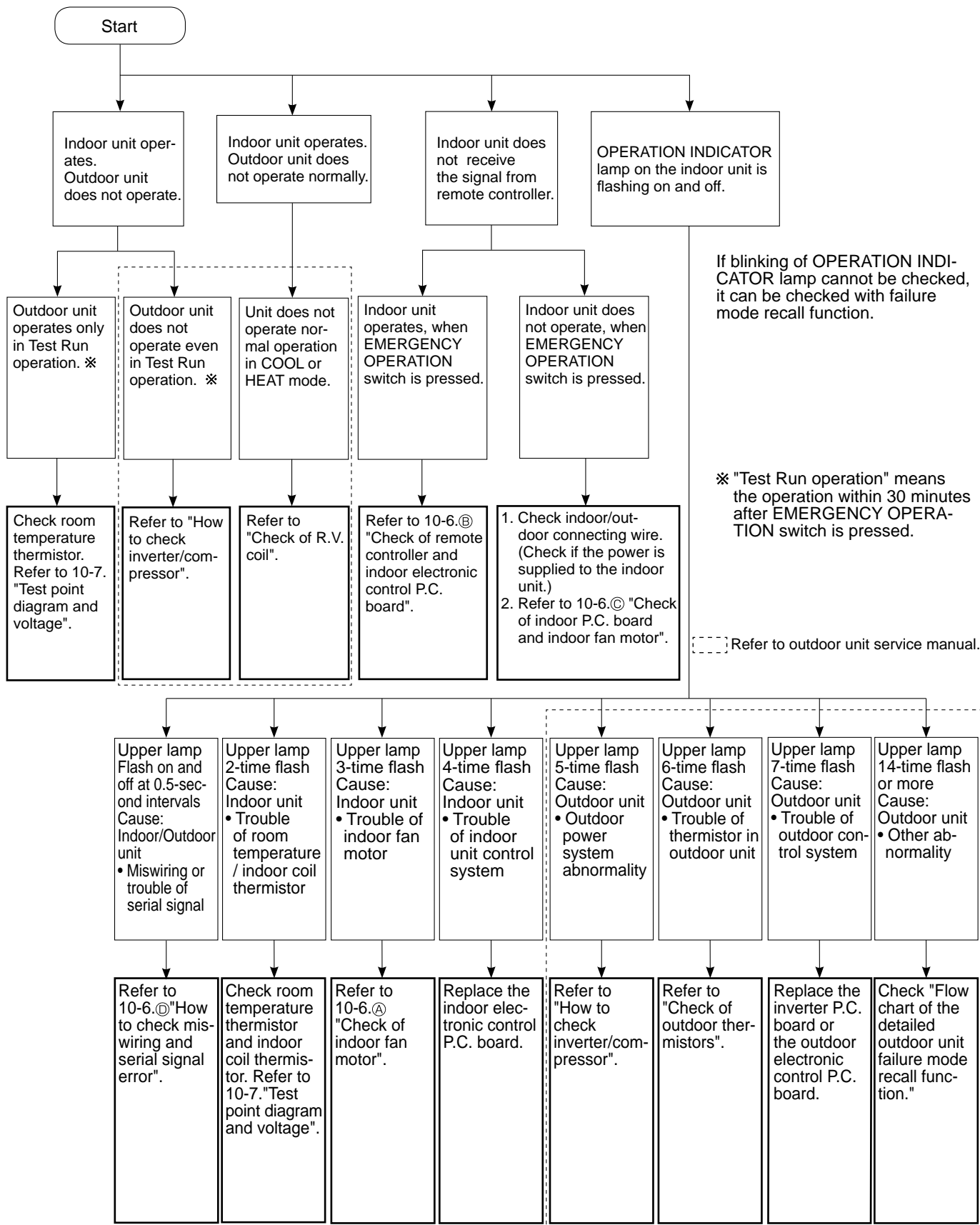


NOTE : Blinking patterns of this mode differ from the ones of TROUBLESHOOTING CHECK TABLE (10-4.).

2. Table of indoor unit failure mode recall function

Upper lamp of OPERATION INDICATOR lamp	Abnormal point (Failure mode)	Condition	Remedy
Not lit	Normal	—	—
1-time flash every 0.5-second	Room temperature thermistor	The room temperature thermistor short or open circuit is detected every 8 seconds during operation.	Refer to the characteristics of the room temperature thermistor (10-7.).
2-time flash 2.5-second OFF	Indoor coil thermistor	The indoor coil thermistor short or open circuit is detected every 8 seconds during operation.	Refer to the characteristics of the main indoor coil thermistor, the sub indoor coil thermistor (10-7.).
3-time flash 2.5-second OFF	Serial signal	The serial signal from outdoor unit is not received for a maximum of 6 minutes.	Refer to 10-6.⑥ "How to check miswiring and serial signal error".
11-time flash 2.5-second OFF	Indoor fan motor	The rotational frequency feedback signal is not emitted for the 12 seconds after the indoor fan motor is operated.	Refer to 10-6.④ "Check of indoor fan motor".
12-time flash 2.5-second OFF	Indoor control system	It cannot properly read data in the nonvolatile memory of the indoor electronic control P.C. board.	Replace the indoor electronic control P.C. board.

10-3. INSTRUCTION OF TROUBLESHOOTING



10-4. TROUBLESHOOTING CHECK TABLE

Before taking measures, make sure that the symptom reappears for accurate troubleshooting.

When the indoor unit has started operation and detected an abnormality of the following condition (the first detection after the power ON), the indoor fan motor turns OFF and OPERATION INDICATOR lamp flashes.

OPERATION INDICATOR



Lit



Blinking




Not lit

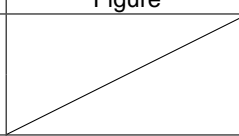
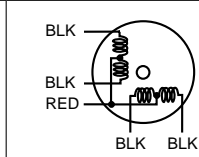
No.	Abnormal point	Operation indicator lamp	Symptom	Condition	Remedy
1	Miswiring or serial signal	Upper lamp flashes. 0.5-second ON ●○○●○○●○○ 0.5-second OFF	Indoor unit and outdoor unit do not operate.	The serial signal from the outdoor unit is not received for 6 minutes.	• Refer to 10-6. ③ "How to check miswiring and serial signal error".
2	Indoor coil thermistor	Upper lamp flashes. 2-time flash ●●○○○○○○●●○○○○ 2.5-second OFF		The indoor coil or the room temperature thermistor is short or open circuit.	• Refer to the characteristics of indoor coil thermistor, and the room temperature thermistor (10-7.).
3	Room temperature thermistor	Upper lamp flashes. 3-time flash ●●○○○○○○●●○○○○○○ 2.5-second OFF		The rotational frequency feedback signal is not emitted during the indoor fan operation.	• Refer to 10-6. ④ "Check of indoor fan motor".
4	Indoor fan motor	Upper lamp flashes. 4-time flash ●●○○○○○○●●○○○○○○●●○○○○ 2.5-second OFF		It cannot properly read data in the nonvolatile memory of the indoor electronic control P.C. board.	• Replace the indoor electronic control P.C. board.
5	Indoor control system	Upper lamp flashes. 5-time flash ●●○○○○○○●●○○○○○○●●○○○○ 2.5-second OFF		It consecutively occurs 3 times that the compressor stops for overcurrent protection or start-up failure protection within 1 minute after start-up.	• Refer to "How to check of inverter/compressor". Refer to outdoor unit service manual • Check the stop valve.
6	Outdoor power system	Upper lamp flashes. 6-time flash ●●○○○○○○●●○○○○○○●●○○○○ 2.5-second OFF		The outdoor thermistors short or open circuit during the compressor operation.	• Refer to "Check of outdoor thermistor". Refer to outdoor unit service manual.
7	Outdoor thermistors	Upper lamp flashes. 7-time flash ●●○○○○○○●●○○○○○○●●○○○○○○ 2.5-second OFF		It cannot properly read data in the nonvolatile memory of the inverter P.C. board or the outdoor electronic control P.C. board.	• Replace the inverter P.C. board or the outdoor electronic control P.C. board. Refer to outdoor unit service manual.
8	Outdoor control system	Upper lamp flashes. 14-time flash or more ●●○○○○○○●●○○○○○○●●○○○○○○●●○○○○○○ 2.5-second OFF		An abnormality other than above mentioned is detected.	• Check the stop valve. • Check the 4-way valve. • Confirm the abnormality in detail using the failure mode recall function for outdoor unit.
9	Other abnormality	Upper lamp lights up ●	Outdoor unit does not operate	It cannot properly read data in the nonvolatile memory of the inverter P.C. board or the outdoor electronic control P.C. board.	• Check the blinking pattern of the LED on the inverter P.C. board or the outdoor electronic control P.C. board.

OPERATION INDICATOR



No.	Abnormal point	Operation indicator lamp	Symptom	Condition	Remedy
1	MXZ type Operation mode setting	Upper lamp lights and lower lamp flashes. 	Outdoor unit operates but indoor unit does not operate.	The operation mode of the each indoor unit is differently set to COOL (includes DRY) and HEAT at the same time, the operation mode of the indoor unit that has operated at first has the priority.	<ul style="list-style-type: none"> Unify the operation mode. Refer to outdoor unit service manual.

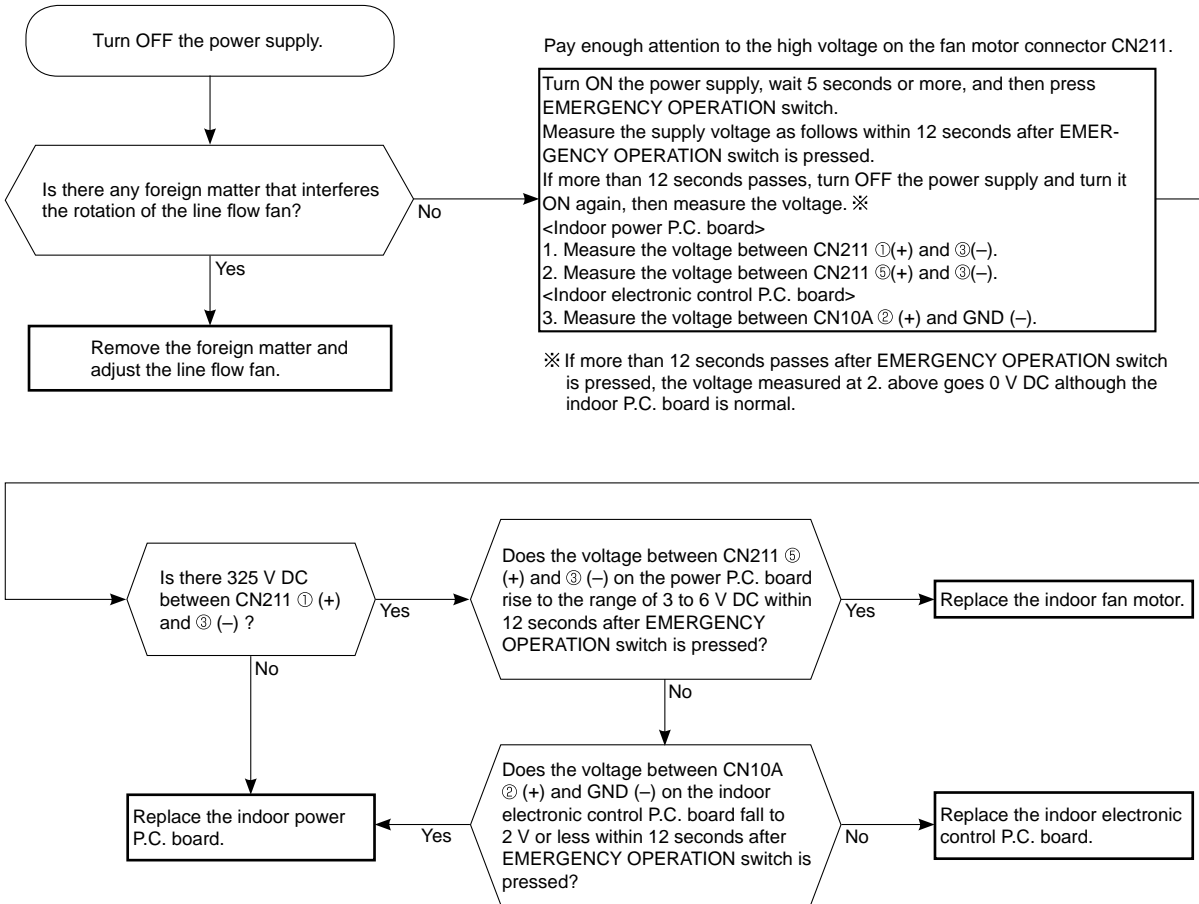
10-5. TROUBLE CRITERION OF MAIN PARTS MSZ-DM50VA MSZ-DM60VA MSZ-DM71VA

Part name	Check method and criterion	Figure			
Room temperature thermistor (RT11)	Measure the resistance with a tester.				
Indoor coil thermistor (RT12, RT13)	Refer to 10-7. "Test point diagram and voltage", "2. Indoor electronic control P.C. board", for the chart of thermistor.				
Indoor fan motor (MF)	Check 10-6.㉔.				
Vane motor (MV)	<div>Measure the resistance between the terminals with a tester. (Part temperature 10 ~ 30°C)</div> <table><tr><td>Color of the lead wire</td><td>Normal</td></tr><tr><td>RED - BLK</td><td>235 ~ 255 Ω</td></tr></table>		Color of the lead wire	Normal	RED - BLK
Color of the lead wire	Normal				
RED - BLK	235 ~ 255 Ω				

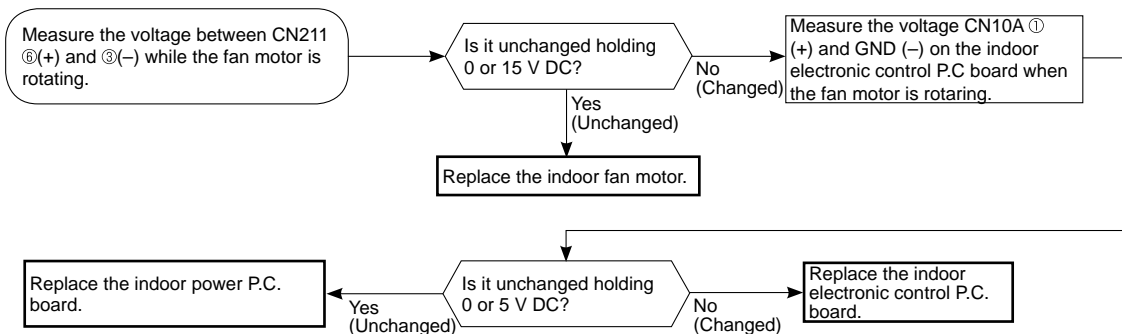
10-6. TROUBLESHOOTING FLOW

A Check of indoor fan motor

The indoor fan motor error has occurred, and the indoor fan does not operate.

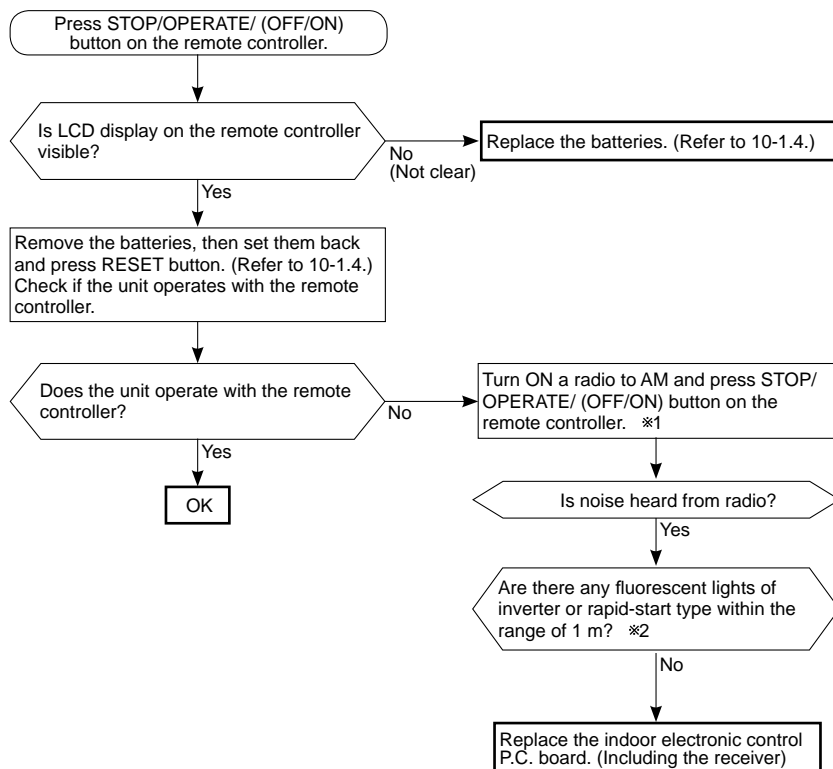


The indoor fan motor error has occurred, and the indoor fan repeats "12-second ON and 30-second OFF" 3 times, and then stops.



B Check of remote controller and indoor electronic control P.C. board

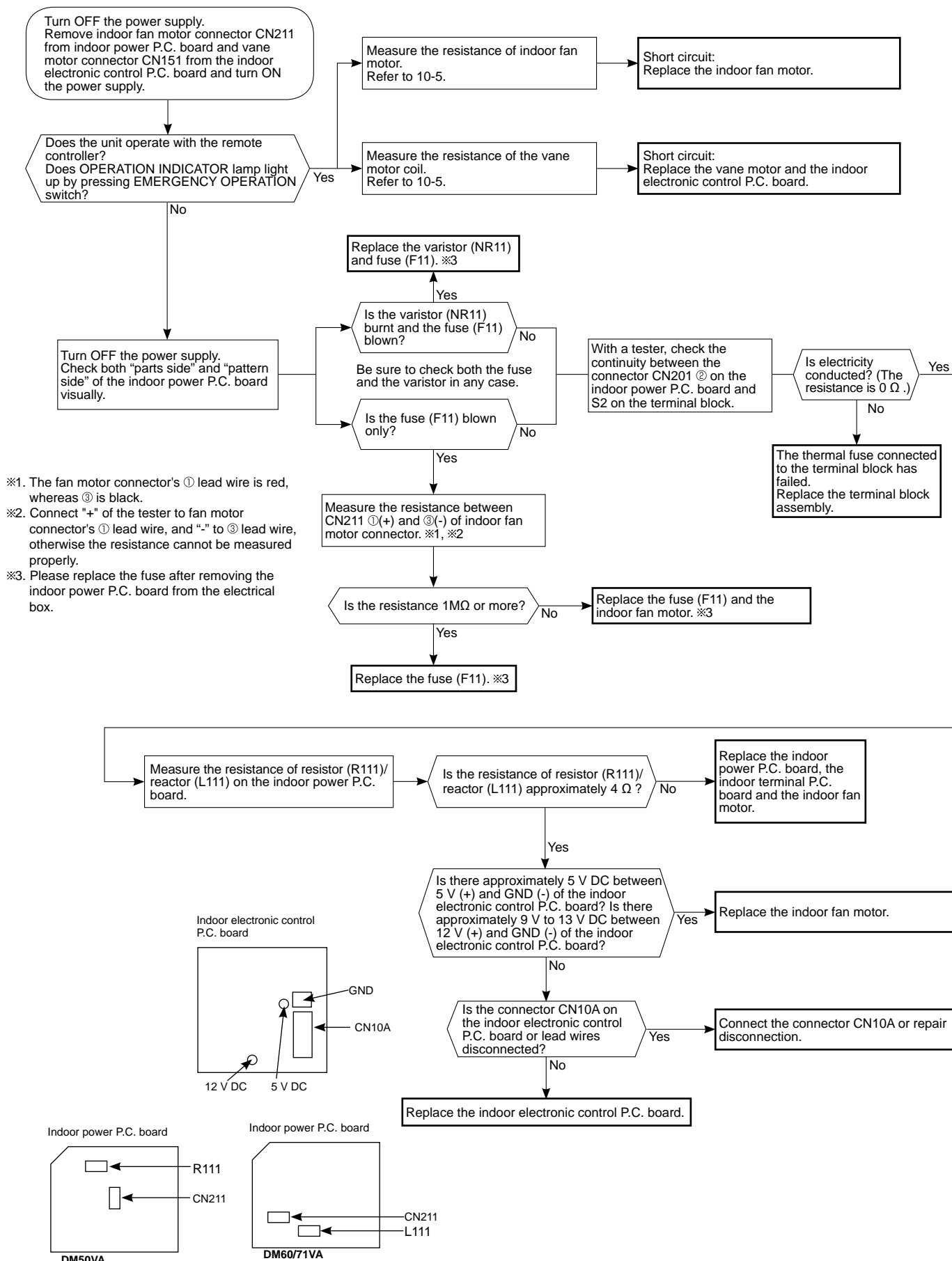
※Check if the remote controller is exclusive for this air conditioner.



※ 1 Look at the image of the signal transmitting section of the remote controller through the monitor of a digital camera or a camera phone. It is normal if the LED of the signal transmitting section lights up when the STOP/ OPERATE/ (OFF/ON) button on the remote controller is pressed. However, it may be difficult to see the illuminated LED of the signal transmitting section with a smartphone camera.

※ 2 If the inverter fluorescent light is turned on when the room is cool, the unit may have difficulty receiving the signal from the remote controller or may not be able to operate with it; if the inverter fluorescent light is turned on when the room is warm, the unit may be able to operate with the remote controller.

C Check of indoor P.C. board and indoor fan motor



D How to check miswiring and serial signal error

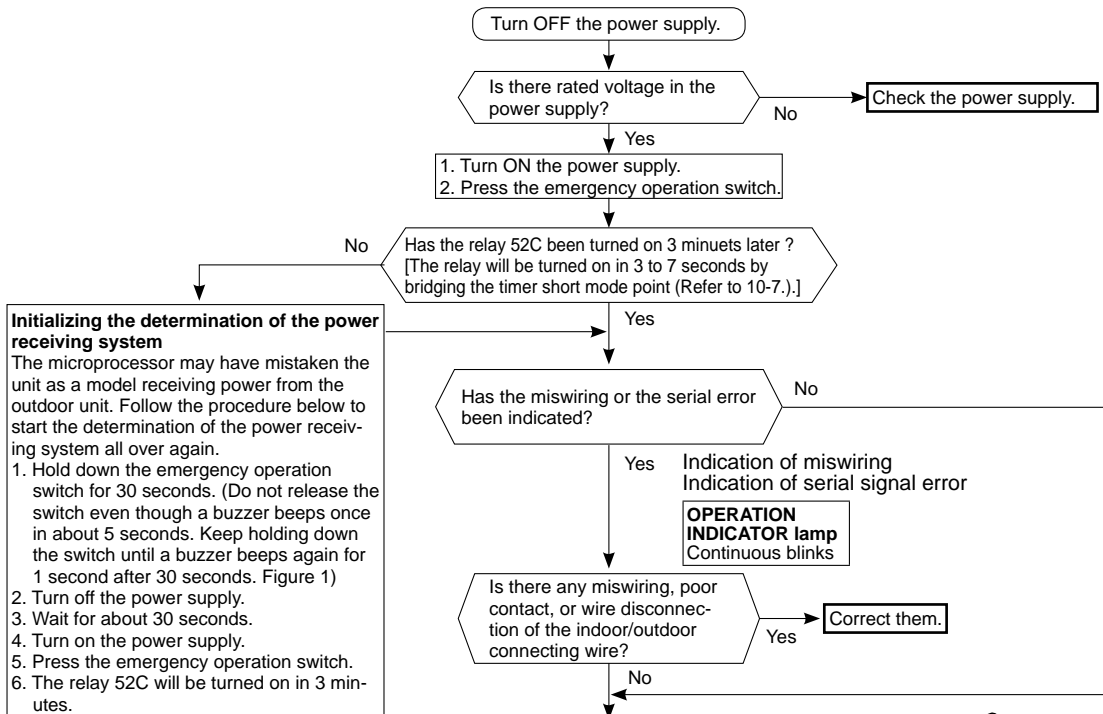
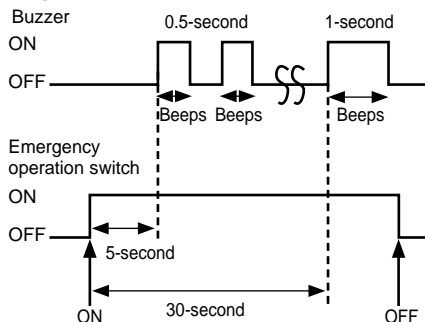


Figure 1

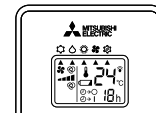
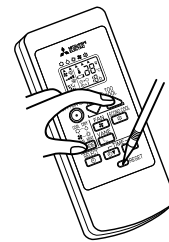


Turn OFF the power supply. Make sure again that the indoor/outdoor connecting wire is correctly connected. With the indoor/outdoor connecting wire connected, bridge between S2 and S3 on the outdoor terminal block. *1

<Preparation of the remote controller>

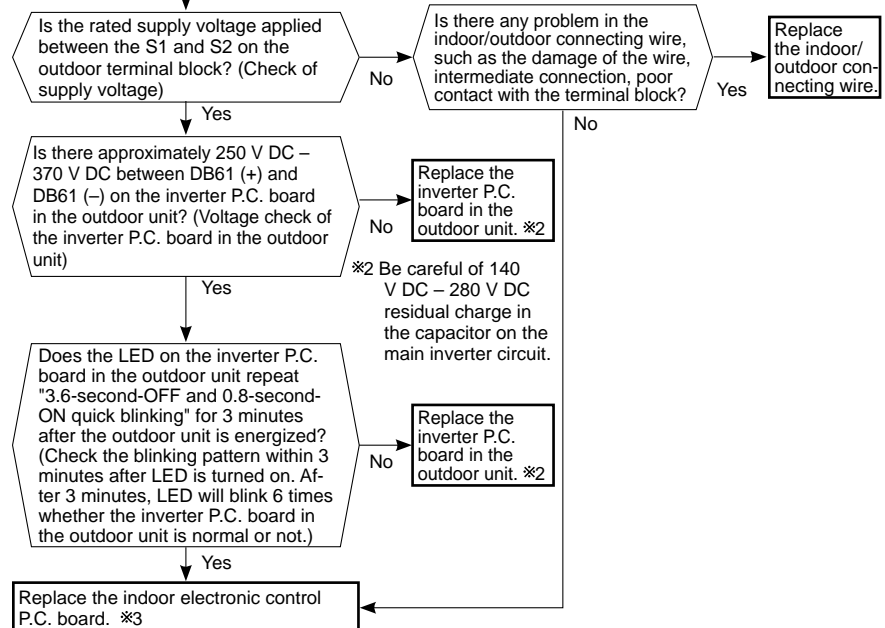
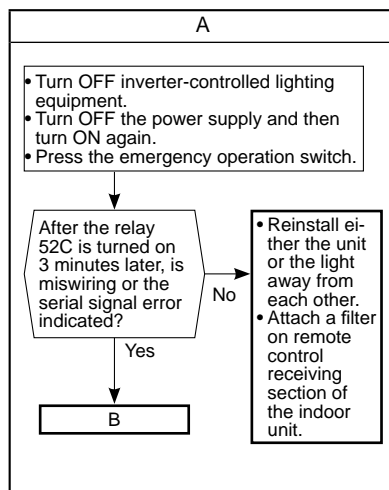
① While pressing both OPERATION SELECT button and TOO COOL button on the remote controller at the same time, press RESET button.

② First, release RESET button. Hold down the other 2 buttons for another 3 seconds. Make sure that the indicators on the LCD screen shown in the right figure are all displayed. Then release the buttons. (Setting up the failure mode recall function)



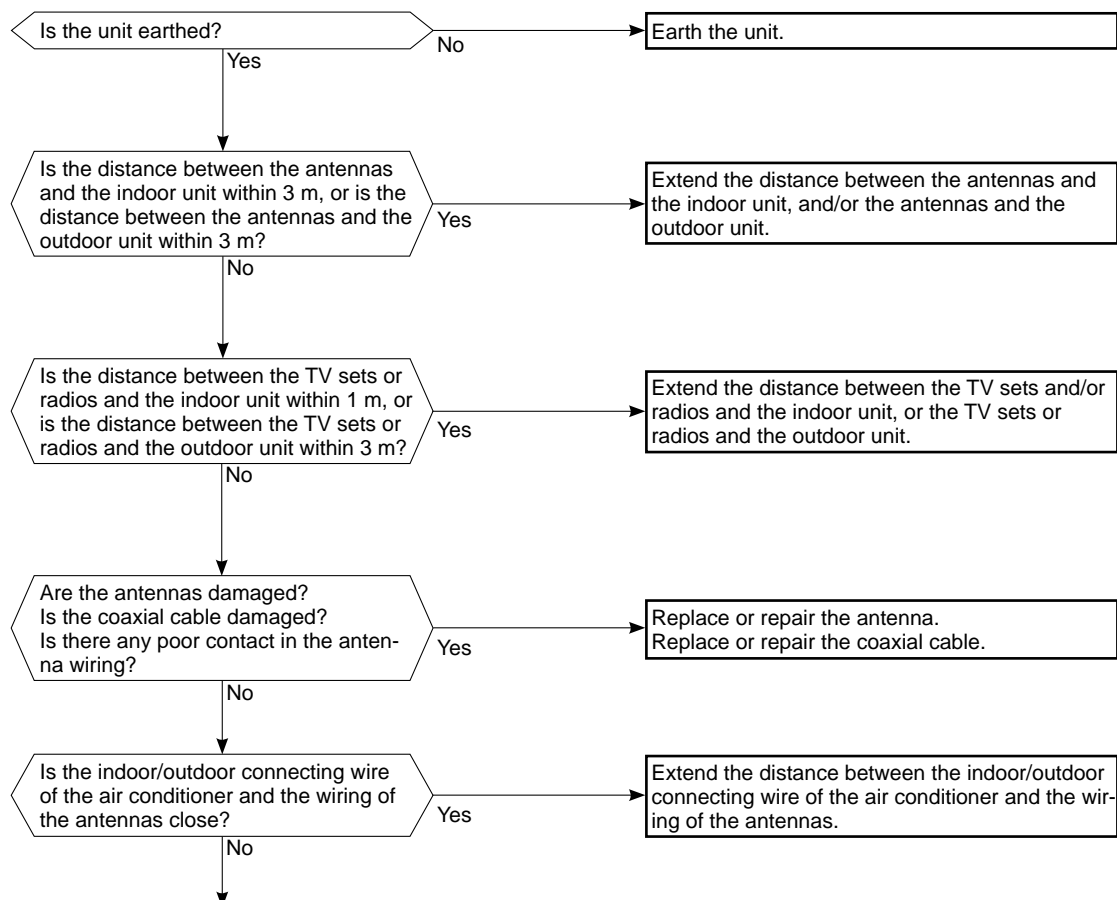
Aim the remote controller at the indoor unit, and press STOP/OPERATE/ (OFF/ON) button. The relay 52C will be turned on, and the outdoor unit will be energized.

*1 Make sure that the wiring is correct. If the procedure is performed without correcting miswiring, it may lead to damage to the P.C. board.



*3 Be sure to release the failure-mode recall function after checking.

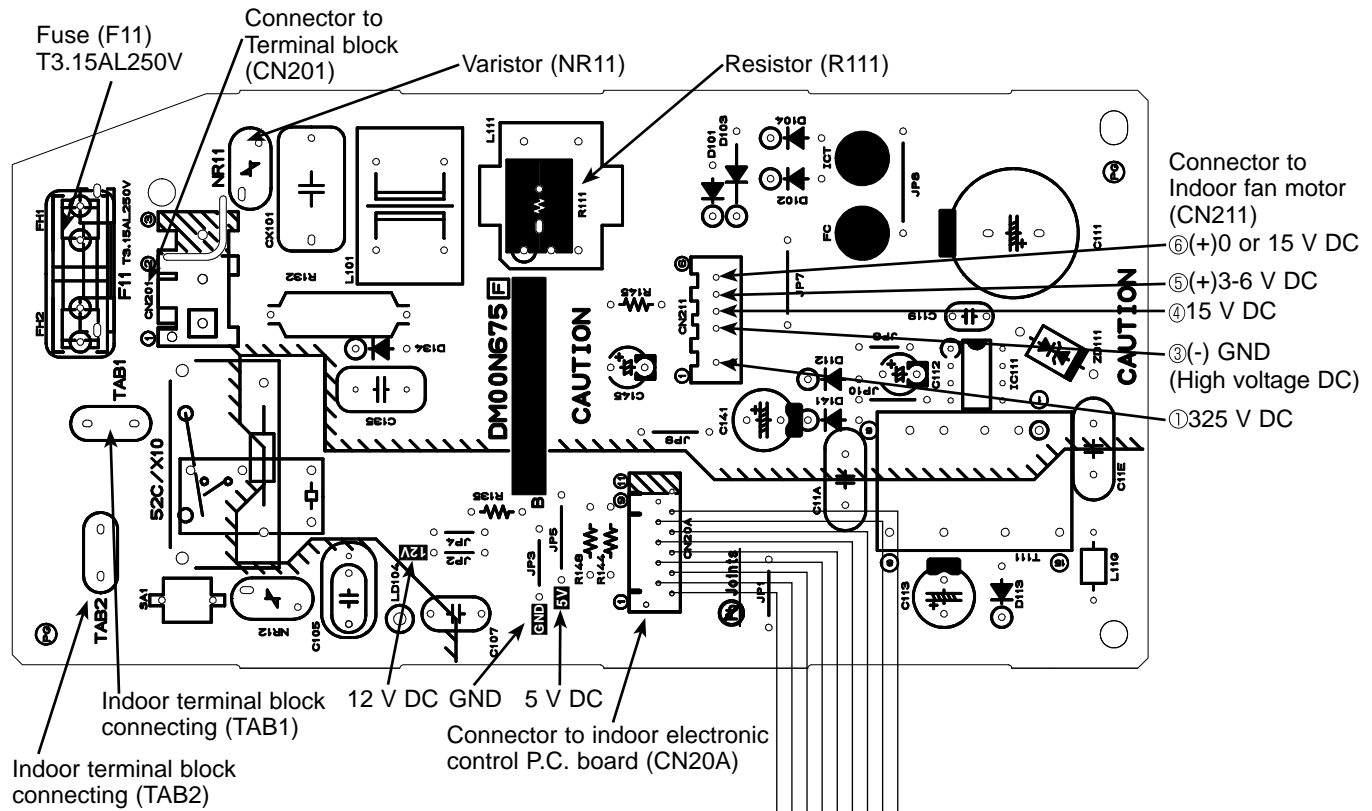
E Electromagnetic noise enters into TV sets or radios



10-7. TEST POINT DIAGRAM AND VOLTAGE

MSZ-DM50VA

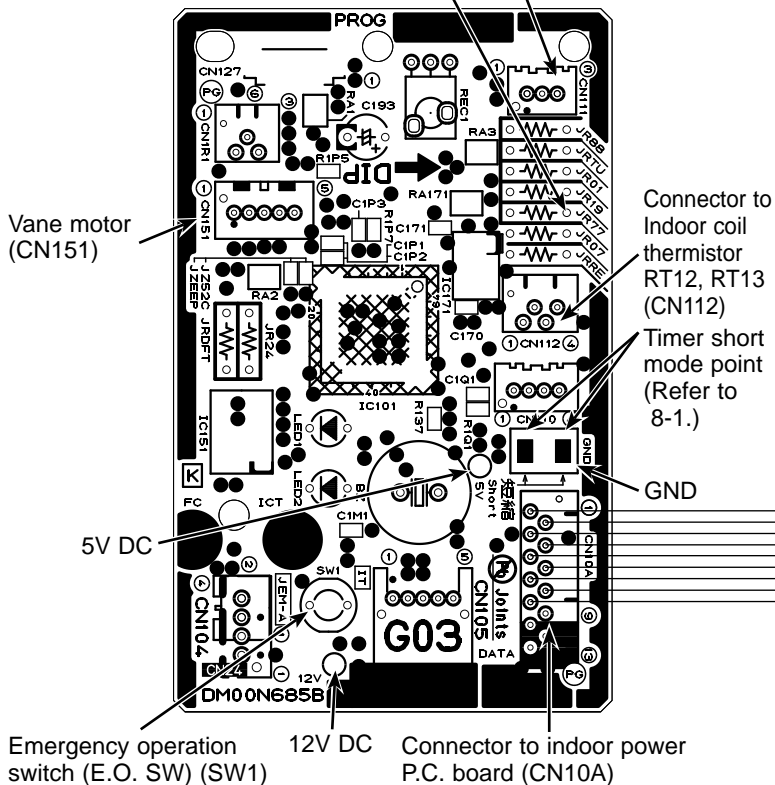
1. Indoor power P.C. board



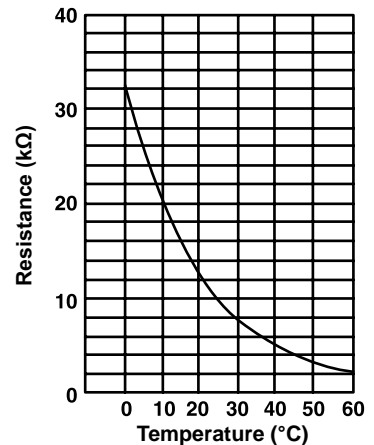
2. Indoor electronic control P.C. board

Room temperature thermistor RT11 (CN111)

To disable "Auto restart function", cut the Jumper wire to JR77. (Refer to 8-3.)

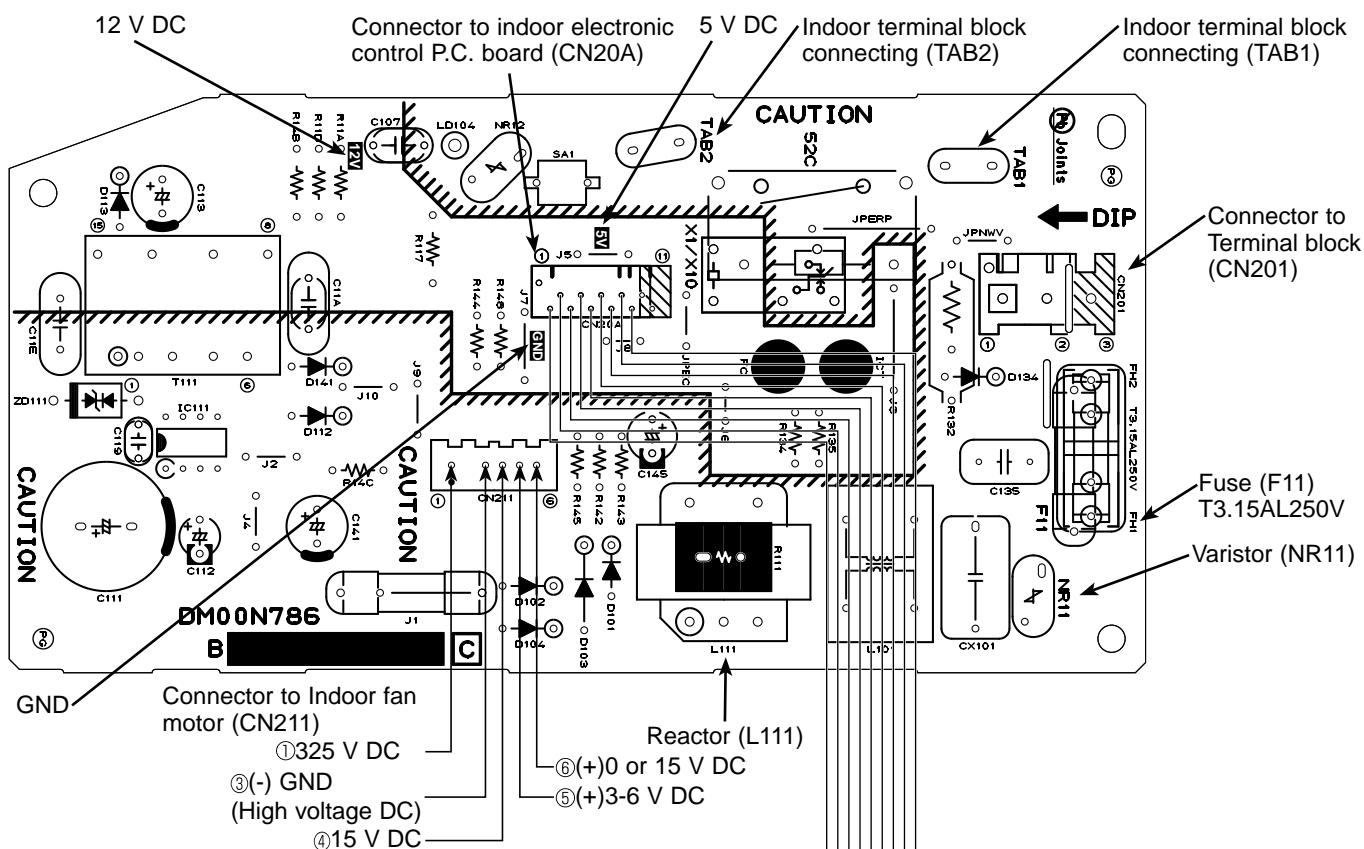


Room temperature thermistor (RT11)
Indoor coil thermistor (RT12, RT13)



MSZ-DM60VA MSZ-DM71VA

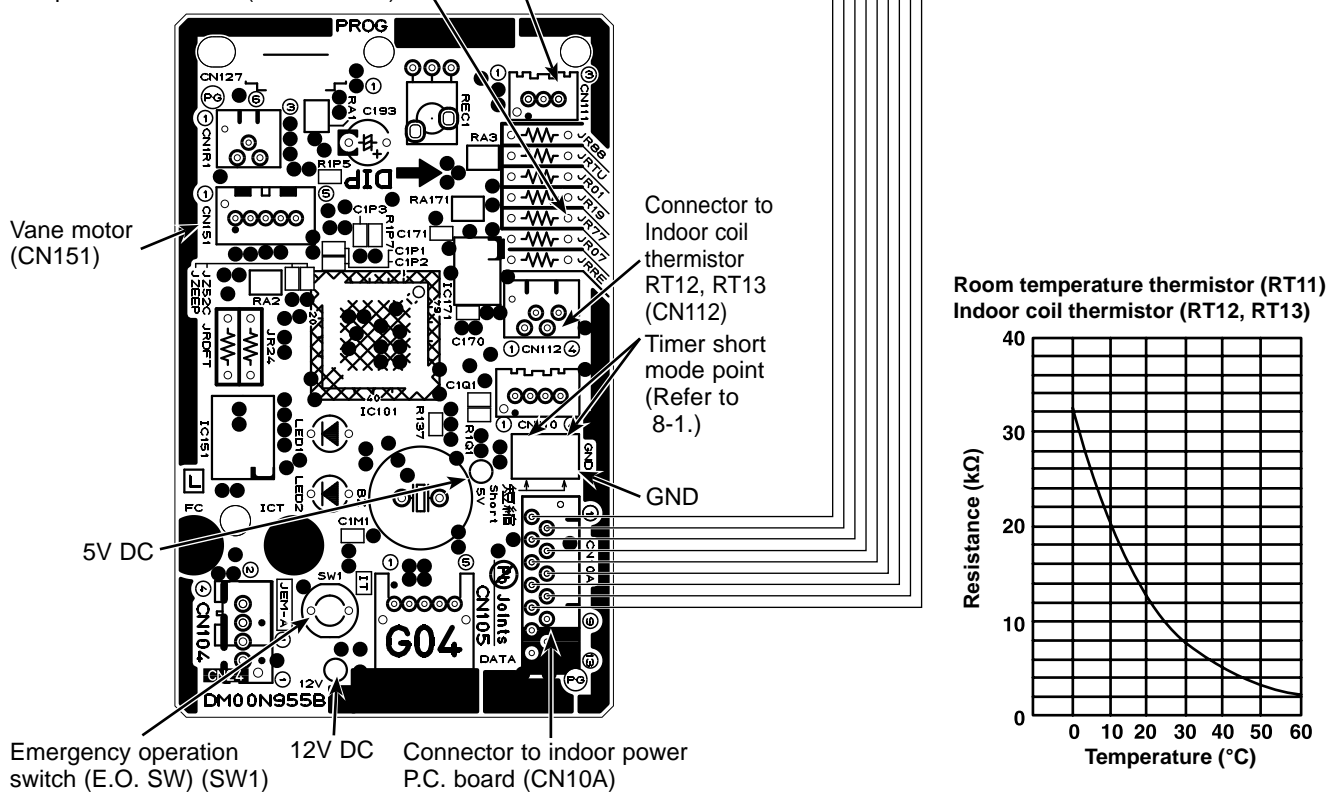
1. Indoor power P.C. board



2. Indoor electronic control P.C. board

Room temperature thermistor RT11 (CN111)

To disable "Auto restart function", cut the Jumper wire to JR77. (Refer to 8-3.)



<"Terminal with locking mechanism" Detaching points>

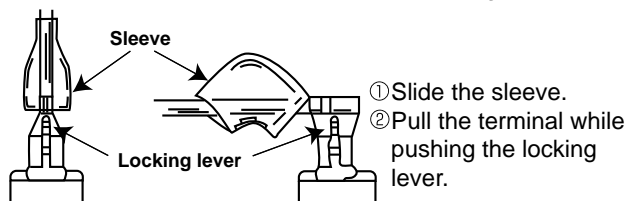
The terminal which has the locking mechanism can be detached as shown below.

There are 2 types (refer to (1) and (2)) of the terminal with locking mechanism.

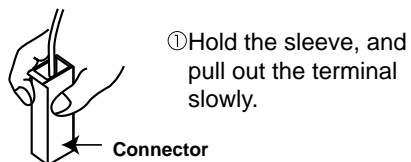
The terminal without locking mechanism can be detached by pulling it out.

Check the shape of the terminal before detaching.

(1) Slide the sleeve and check if there is a locking lever or not.



(2) The terminal with this connector has the locking mechanism.



11-1. MSZ-DM50VA

NOTE: Turn OFF the power supply before disassembly.

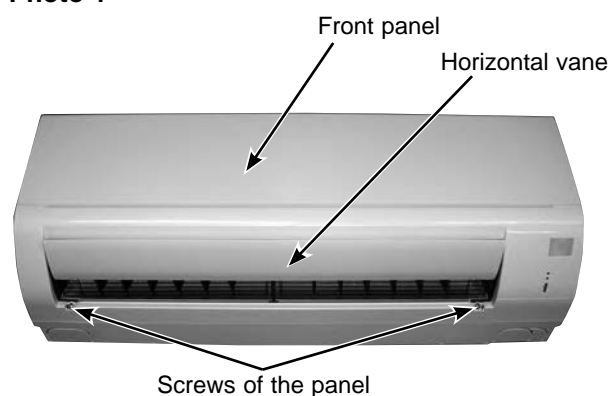
OPERATING PROCEDURE

1. Removing the panel

- (1) Remove the screw caps on the panel and remove the screws of the panel.
- (2) Pull the panel slightly toward you, and then remove the panel by pushing it upward.

PHOTOS

Photo 1



OPERATING PROCEDURE

2. Removing the indoor power P.C. board and the electrical box

- (1) Remove the panel. (Refer to 1.) Remove the right corner box.
 - (2) Disconnect the following connectors:
 <Indoor electronic control P.C. board>
 CN151 (Vane motor)
 CN112 (Indoor coil thermistor)
 CN10A (To the indoor power P.C. board)
 - (3) Unhook the catch on the left side of the control P.C. board holder. Pull the control P.C. board holder as if opening the door at 90 degrees. Remove the control P.C. board holder from the axial rod on the electrical box.
 - (4) Remove the screw of the V.A. clamp.
 - (5) Remove the V.A. clamp and the indoor/outdoor connecting wire.
 - (6) Remove the earth wire connected to the indoor heat exchanger from the electrical box.
 - (7) Remove the screw of the electrical cover and remove the electrical cover.
 - (8) Disconnect the following connectors:
 <Indoor power P.C. board>
 CN211 (Indoor fan motor)
 CN201, TAB1, TAB2 (Terminal block)
 CN20A (To the indoor electronic control P.C. board)
 - (9) Remove the upper catch of the electrical box, and pull out the electrical box.
- ※ To attach the electrical box, pass the wires connecting the indoor power P.C. board and the indoor electronic control P.C. board through ㉠. Pass the lead wires of the fan motor through ㉡ as shown in the Photo 3.

PHOTOS

Photo 2

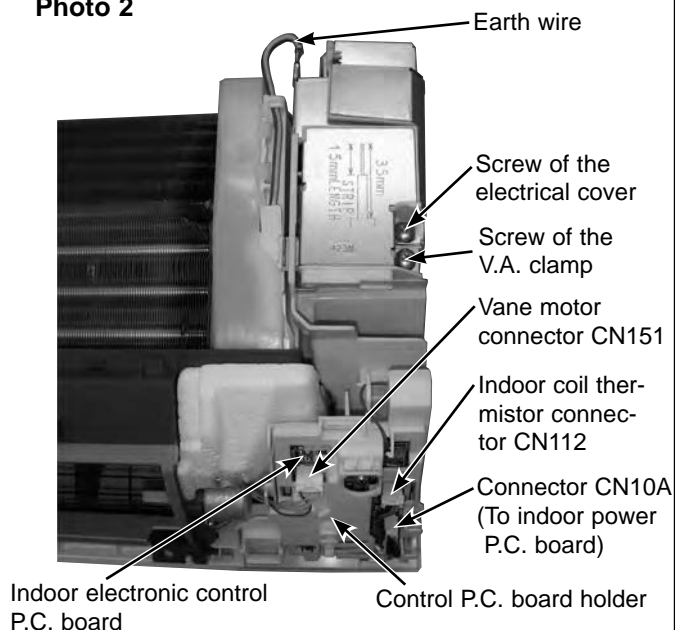
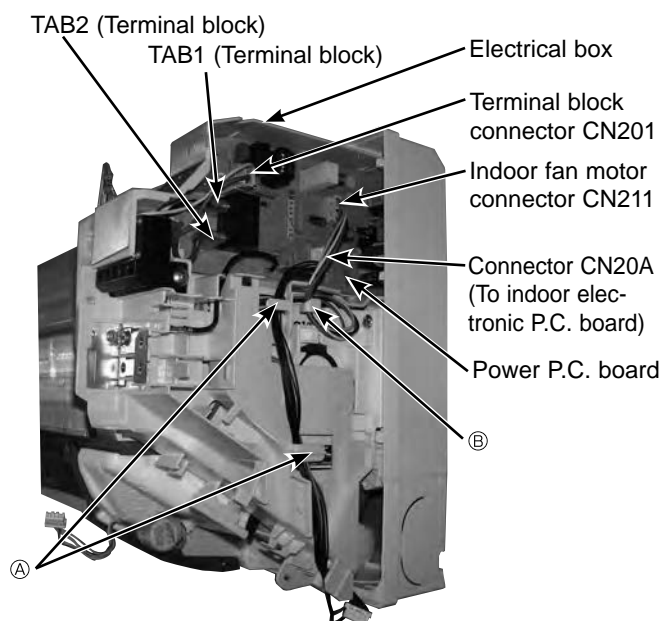


Photo 3



OPERATING PROCEDURE

3. Removing the indoor electronic control P.C. board

- (1) Remove the panel. (Refer to 1.) Remove the right corner box.
- (2) Disconnect the following connectors:
<Indoor electronic control P.C. board>
CN151 (Vane motor)
CN112 (Indoor coil thermistor)
CN10A (To the indoor power P.C. board)
- (3) Unhook the catch on the left side of the control P.C. board holder. Pull the control P.C. board holder as if opening the door at 90 degrees. Remove the control P.C. board holder from the axial rod on the electrical box.
- (4) Remove the room temperature thermistor from the back side of the control P.C. board holder.
- (5) Unhook the catches of the control P.C. board holder, and open the control P.C. board holder.
- (6) Remove the indoor electronic control P.C. board from the control P.C. board holder.

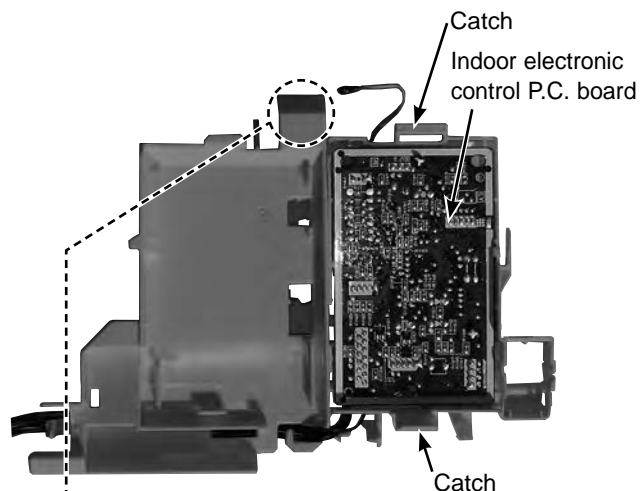
4. Removing the vane motor

- (1) Remove the panel. (Refer to 1.) Remove the corner box.
- (2) Remove the control P.C. board holder and the electrical box. (Refer to 2.)
- (3) Pull out the drain hose from the nozzle assembly and remove the nozzle assembly.
- (4) Remove the screws of the vane motor and remove the vane motor.
- (5) Disconnect the connector from the vane motor.

PHOTOS

Photo 4

Control P.C. board holder (Inside)



Control P.C. board holder (Back side)

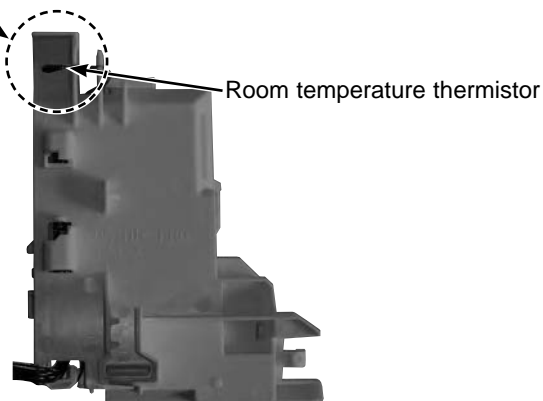


Photo 5

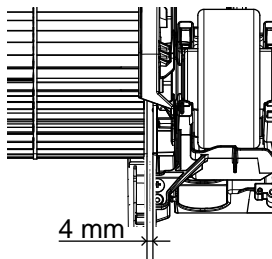


OPERATING PROCEDURE

5. Removing the indoor fan motor, the indoor coil thermistor and the line flow fan

- (1) Remove the panel. (Refer to 1.) Remove the corner box.
- (2) Remove the control P.C. board holder, the electrical box and the nozzle assembly. (Refer to 2.)
- (3) Remove the screws fixing the motor bed.
- (4) Disengage the hooks of the water cover and remove the water cover.
- (5) Disconnect the earth wire from the motor band.
- (6) Remove the indoor coil thermistor from the motor band.
- (7) Loosen the screw fixing the line flow fan.
- (8) Remove the motor bed together with the indoor fan motor and the motor band.
- (9) Disconnect the lead wire of the fan motor from the motor band.
- (10) Disengage the hooks of the motor band and remove the motor band. Pull out the indoor fan motor.
- (11) Remove the indoor coil thermistor from the heat exchanger.
 - * Install the indoor coil thermistor in its former position when assembling it.
- (12) Remove the screws fixing the left side of the heat exchanger.
- (13) Lift the heat exchanger, and pull out the line flow fan to the lower-left.
 - * When attaching the line flow fan, screw the line flow fan so 4 mm gap is provided between the right end of the line flow fan and the right wall of the air passage of the box (Figure 1).

Figure 1



PHOTOS

Photo 6

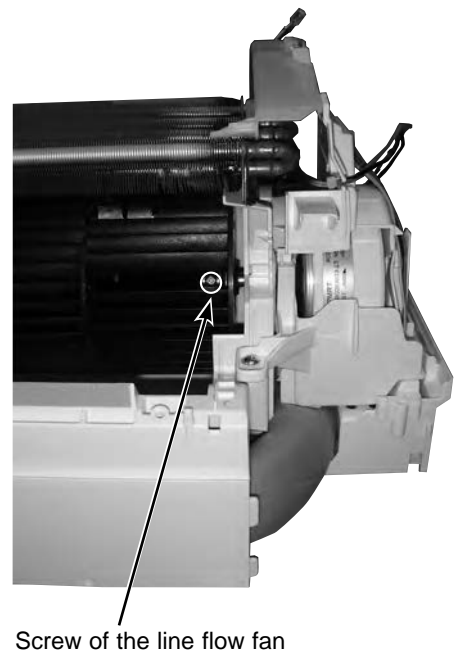
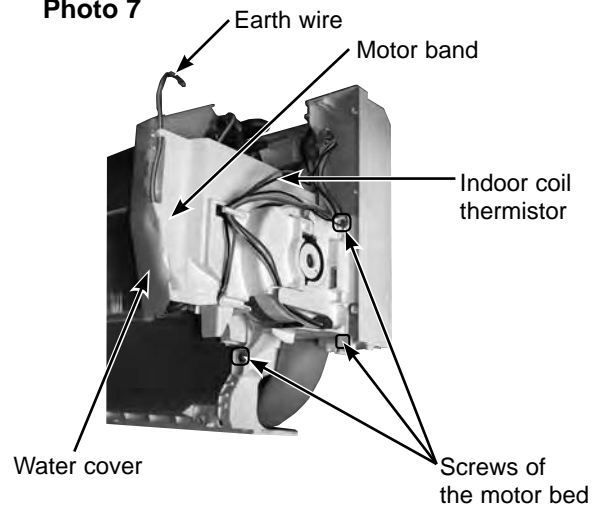
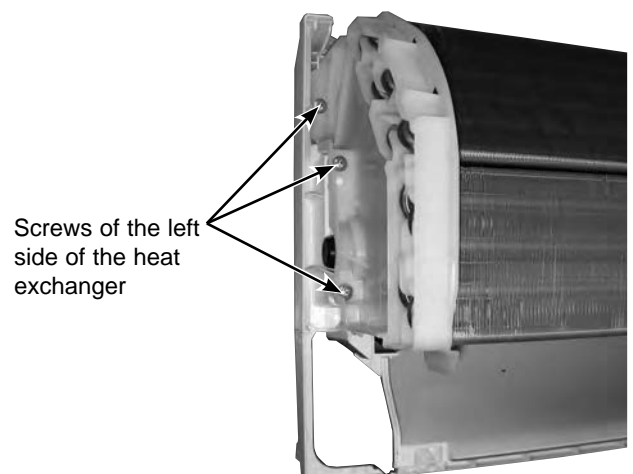


Photo 7

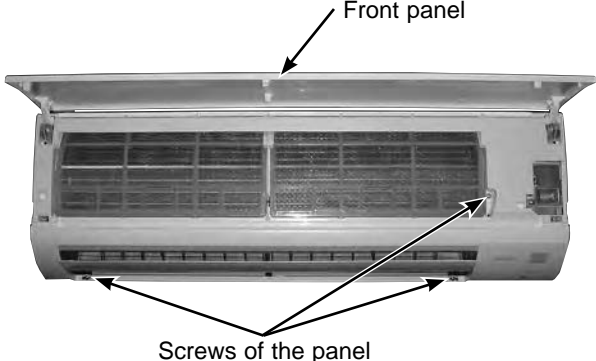


MSZ-DM50VA



11-2. MSZ-DM60VA MSZ-DM71VA

NOTE: Turn OFF the power supply before disassembly.

OPERATING PROCEDURE	PHOTOS
<p>1. Removing the panel</p> <p>(1) Remove the screw caps on the panel and remove the screws of the panel.</p> <p>(2) Pull the panel slightly toward you, and then remove the panel by pushing it upward.</p>	<p>Photo 1</p> 

OPERATING PROCEDURE

2. Removing the indoor power P.C. board and the electrical box

- (1) Remove the panel. (Refer to 1.) Remove the right corner box.
- (2) Disconnect the following connectors:
<Indoor electronic control P.C. board>
CN151 (Vane motor)
CN112 (Indoor coil thermistor)
CN10A (To the indoor power P.C. board)
- (3) Unhook the catch on the left side of the control P.C. board holder. Pull the control P.C. board holder as if opening the door at 90 degrees. Remove the control P.C. board holder from the axial rod on the electrical box.
- (4) Remove the screw of the V.A. clamp.
- (5) Remove the V.A. clamp and the indoor/outdoor connecting wire.
- (6) Remove the screws of the earth plate. (Photo 2)
- (7) Remove the indoor coil thermistor from the water cover.
- (8) Disengage the hooks of the water cover and remove the water cover.
- (9) Remove the screw of the electrical cover and remove the electrical cover.
- (10) Disconnect the CN211 (Indoor fan motor) from the indoor power P.C. board.
- (11) Remove the upper catch of the electrical box, and pull out the electrical box.
* To attach the electrical box, pass the wires connecting the indoor power P.C. board and the indoor electronic control P.C. board through ㊤. Pass the lead wires of the fan motor through ㊤ as shown in the Photo 3.
- (12) Disconnect the following connectors and tabs.
<Indoor power P.C. board>
CN201, TAB1, TAB2 (Terminal block)
CN20A (To the indoor electronic control P.C. board)

PHOTOS

Photo 2

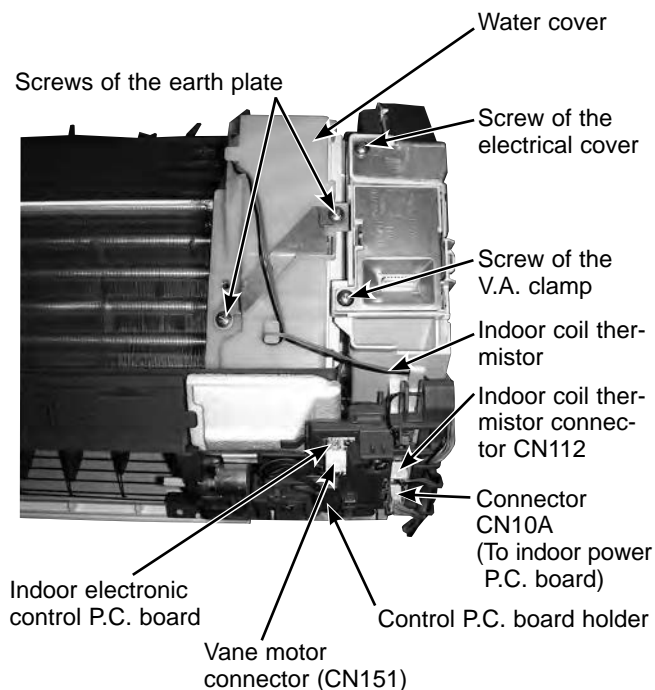
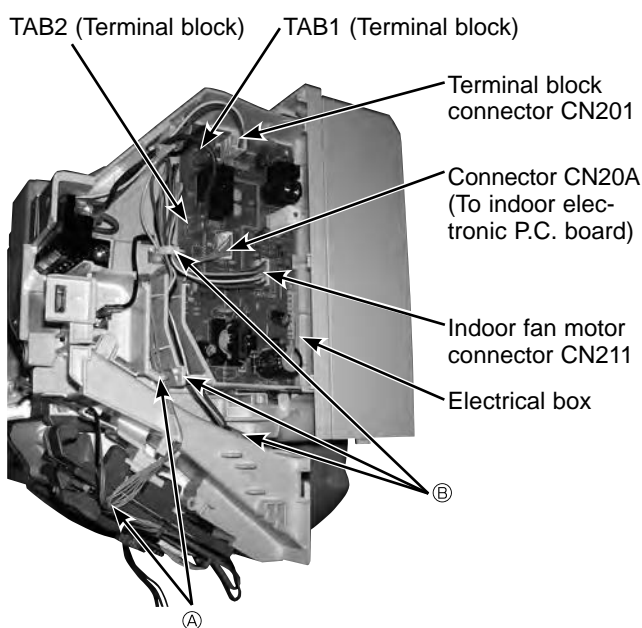


Photo 3



OPERATING PROCEDURE

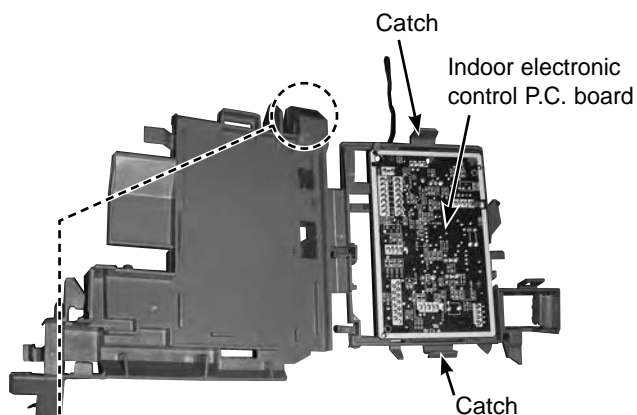
3. Removing the indoor electronic control P.C. board

- (1) Remove the panel. (Refer to 1.) Remove the right corner box.
- (2) Disconnect the following connectors:
<Indoor electronic control P.C. board>
CN151 (Vane motor)
CN112 (Indoor coil thermistor)
CN10A (To the indoor power P.C. board)
- (3) Unhook the catch on the left side of the control P.C. board holder. Pull the control P.C. board holder as if opening the door at 90 degrees. Remove the control P.C. board holder from the axial rod on the electrical box.
- (4) Remove the room temperature thermistor from the back side of the control P.C. board holder.
- (5) Unhook the catches of the control P.C. board holder, and open the control P.C. board holder.
- (6) Remove the indoor electronic control P.C. board from the control P.C. board holder.

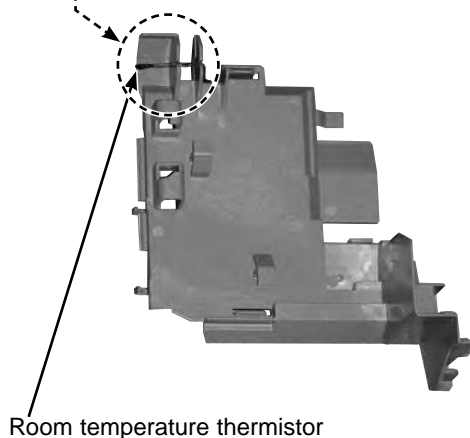
PHOTOS

Photo 4

Control P.C. board holder (Inside)



Control P.C. board holder (Back side)



4. Removing the vane motor

- (1) Remove the panel. (Refer to 1.) Remove the corner box.
- (2) Remove the control P.C. board holder, water cover and the electrical box. (Refer to 2.)
- (3) Pull out the drain hose from the nozzle assembly and remove the nozzle assembly.
- (4) Remove the screws of the vane motor and remove the vane motor.
- (5) Disconnect the connector from the vane motor.

Photo 5



Screws of the vane motor

OPERATING PROCEDURE

5. Removing the indoor fan motor, the indoor coil thermistor and the line flow fan

- (1) Remove the panel. (Refer to 1.) Remove the corner box.
- (2) Remove the control P.C. board holder, the water cover, the electrical box and the nozzle assembly. (Refer to 2.)
- (3) Remove the screws fixing the motor bed.
- (4) Loosen the screw fixing the line flow fan.
- (5) Remove the motor bed together with the indoor fan motor and the motor band.
- (6) Disconnect the lead wire of the fan motor from the motor band.
- (7) Disengage the hooks of the motor band and remove the motor band. Pull out the indoor fan motor.
- (8) Remove the indoor coil thermistor from the heat exchanger.
 - * Install the indoor coil thermistor in its former position when assembling it.
- (9) Remove the screws fixing the left side and upper right side of the heat exchanger.
- (10) Lift the heat exchanger, and pull out the line flow fan to the lower-left.
 - * When attaching the line flow fan, screw the line flow fan so 4 mm gap is provided between the right end of the line flow fan and the right wall of the air passage of the box (Figure 1).

Figure 1

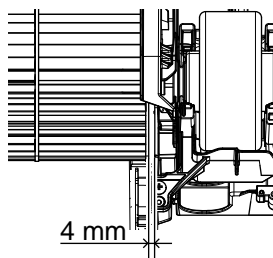
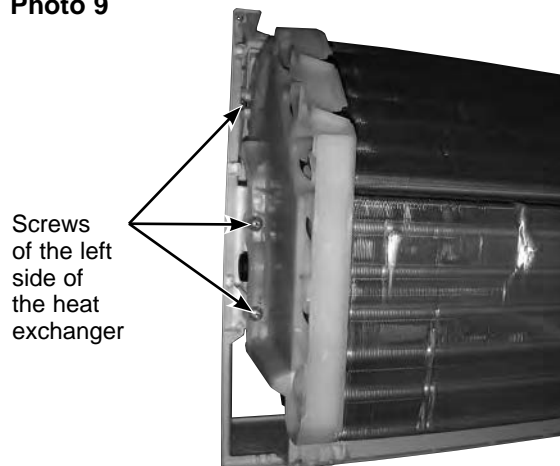
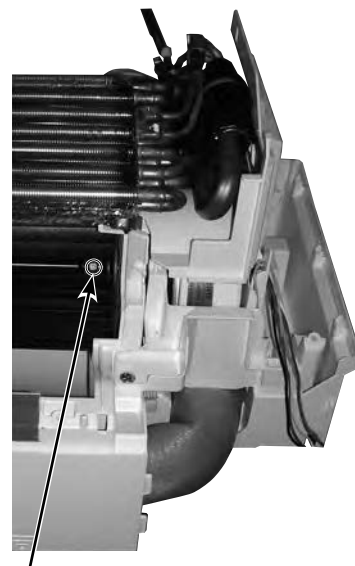


Photo 9



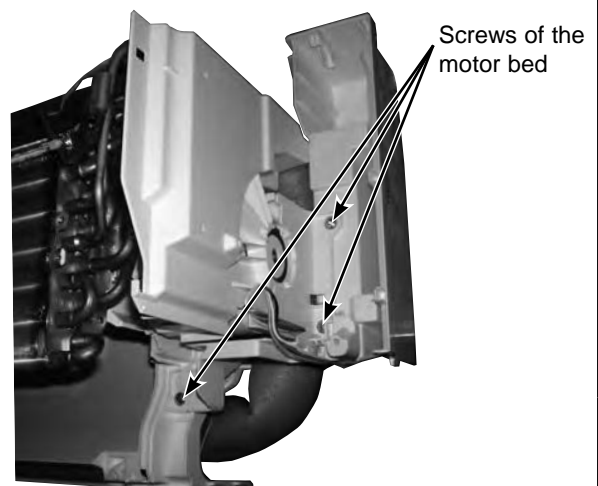
PHOTOS

Photo 6



Screw of the line flow fan

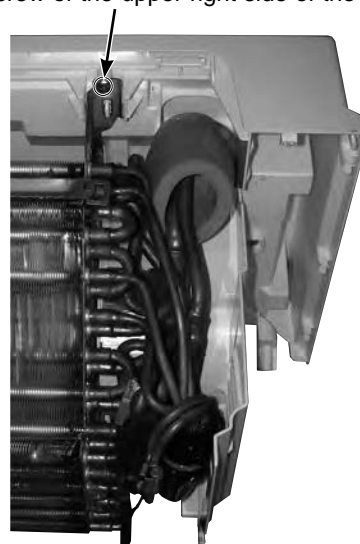
Photo 7



Screws of the motor bed

Photo 8

Screw of the upper right side of the heat exchanger



Fixing the indoor coil thermistor

※ There are 2 forms of parts for fixing the indoor coil thermistor.

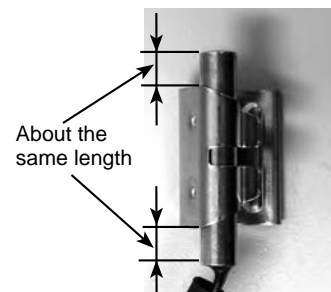
Clip shape



Holder shape



When fixing the indoor coil thermistor to the clip-shape/holder-shape part, the lead wire should point down.



Position and procedure for mounting the clip-shape part

1. Set the indoor coil thermistor in the center of the clip-shape part.



2. Check the (marked) mounting position.



3. Mount the clip-shape part.



NOTE:

- Take care to avoid loss and accidental falling of the clip-shape part inside the unit.
- Mount the clip-shape part on the marked position.
- Do not pull the lead wire when removing the indoor coil thermistor.

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