

Revision A:

- MSZ-HJ50VA-**E1** has been added.

Please void OBH647.

INDOOR UNIT SERVICE MANUAL

No. OBH647
REVISED EDITION-A

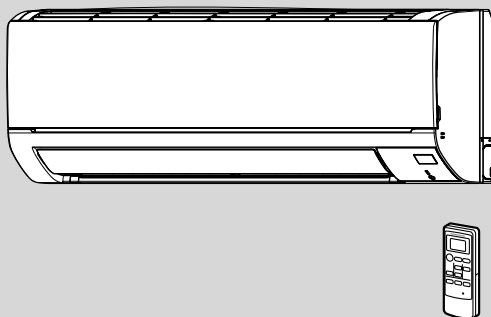
Models

MSZ-HJ25VA - **E1**

MSZ-HJ35VA - **E1**

MSZ-HJ50VA - **E1**

Outdoor unit service manual
MUZ-HJ-VA Series (OBH648)



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PARTS CATALOG (OBB647)

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.

Revision A:

- MSZ-HJ50VA-**E1** has been added.

MSZ-HJ25VA - E1

MSZ-HJ35VA - E1

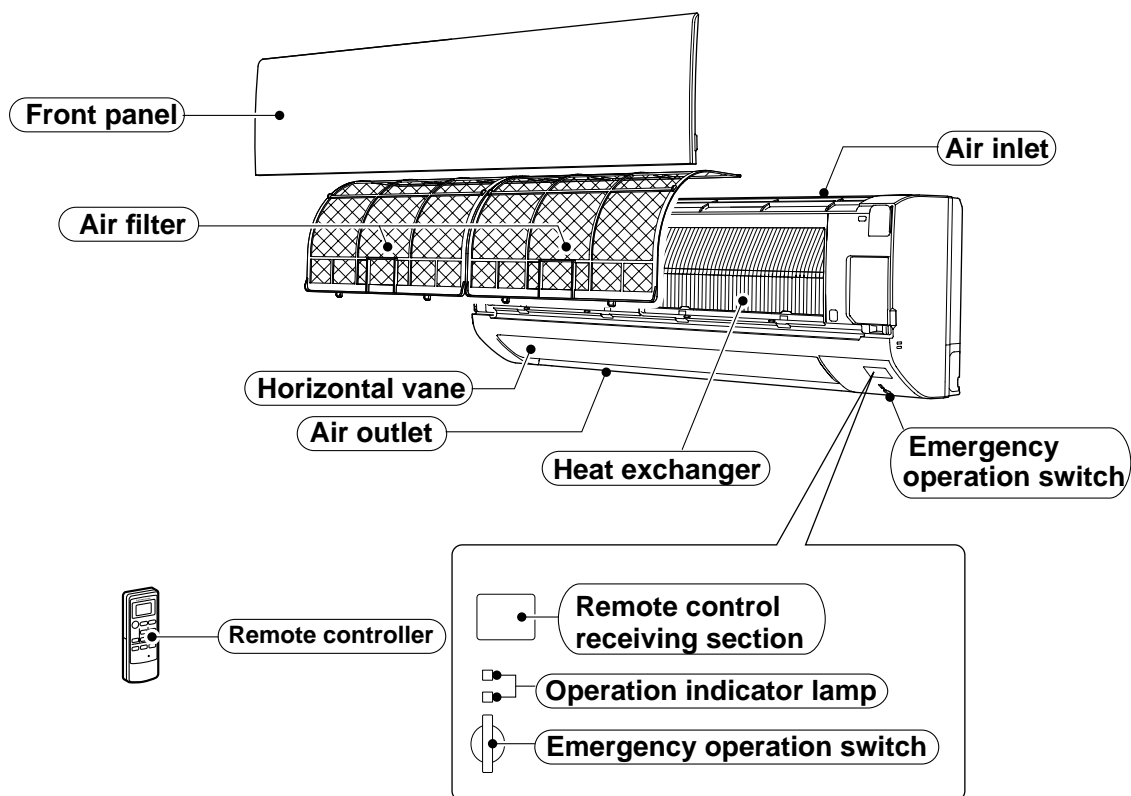
MSZ-HJ50VA - E1

1. New model

2

PART NAMES AND FUNCTIONS

MSZ-HJ25VA MSZ-HJ35VA MSZ-HJ50VA



ACCESSORIES

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

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SPECIFICATION

Indoor model			MSZ-HJ25VA	MSZ-HJ35VA	MSZ-HJ50VA		
Power supply			Single phase 230 V, 50 Hz				
Breaker Capacity		A	10		12		
Electrical data	Power input *1 (Total)	Cooling	W	730	1,040	2,050	
		Heating	W	870	995	1,480	
	Running current *1 (Total)	Cooling	A	3.7	4.9	9.0	
		Heating	A	4.2	4.8	6.6	
	Power factor *1 (Total)	Cooling	%	85	92	99	
		Heating	%	90	90	97	
Starting current *1 (Total)		A	4.2	4.9	9.0		
Fan motor	Model		RC0J40-EF				
	Current *1	Cooling	A	0.19	0.24	0.27	
Heating		A	0.20	0.22	0.34		
Dimensions W x H x D		mm	799 x 290 x 232				
Weight		kg	9				
Special remarks	Air direction		5				
	Airflow	Cooling	Super High	m ³ /h	571	654	772
			High		438	470	667
			Med.		328	341	547
			Low		227	227	380
		Heating	Super High	m ³ /h	598	619	861
			High		451	451	667
			Med.		328	328	497
			Low		208	208	364
	Sound level	Cooling	Super High	dB(A)	43	45	45
			High		37	38	40
			Med.		30	31	36
			Low		22	22	28
		Heating	Super High	dB(A)	43	44	47
			High		37	37	41
			Med.		30	30	34
			Low		23	23	27
	Fan speed	Cooling	Super High	rpm	1,080	1,200	1,120
			High		880	930	1,000
			Med.		710	730	860
Low			550		550	660	
Heating		Super High	rpm	1,120	1,150	1,220	
		High		900	900	1,000	
		Med.		710	710	800	
		Low		520	520	640	
Fan speed regulator		4					
Remote controller model		MP13A					

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 VDC
Varistor	(NR11)	S10K320E3K1 (ERZV14D471)
Terminal block	(TB)	5P

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NOISE CRITERIA CURVES

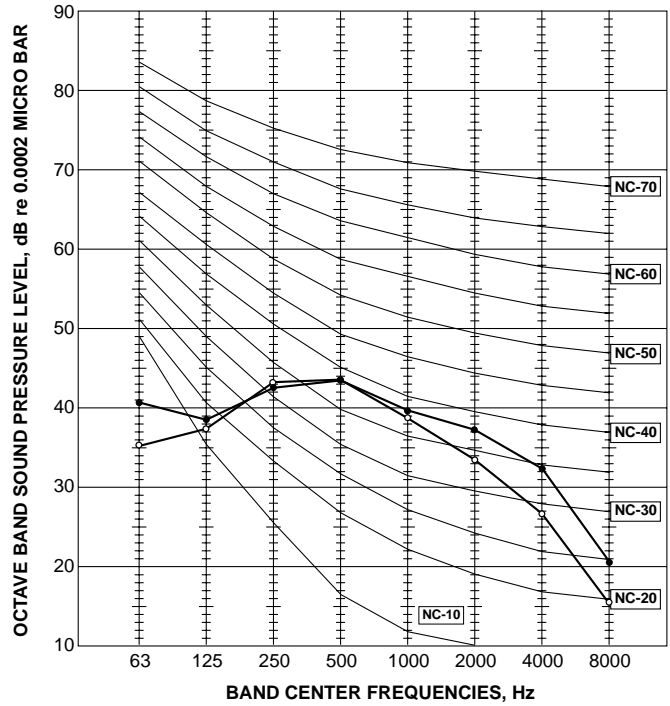
MSZ-HJ25VA

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
Super High	COOLING	43	●—●
	HEATING	43	○—○



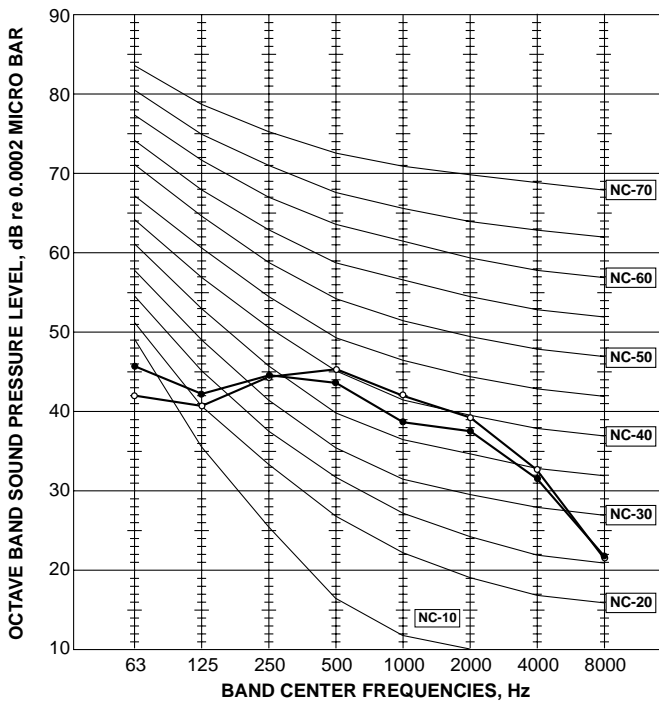
MSZ-HJ35VA

FAN SPEED	FUNCTION	SPL(dB(A))	LINE
Super High	COOLING	45	●—●
	HEATING	44	○—○



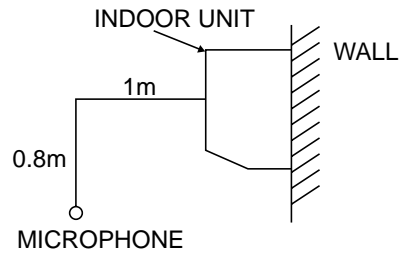
MSZ-HJ50VA

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

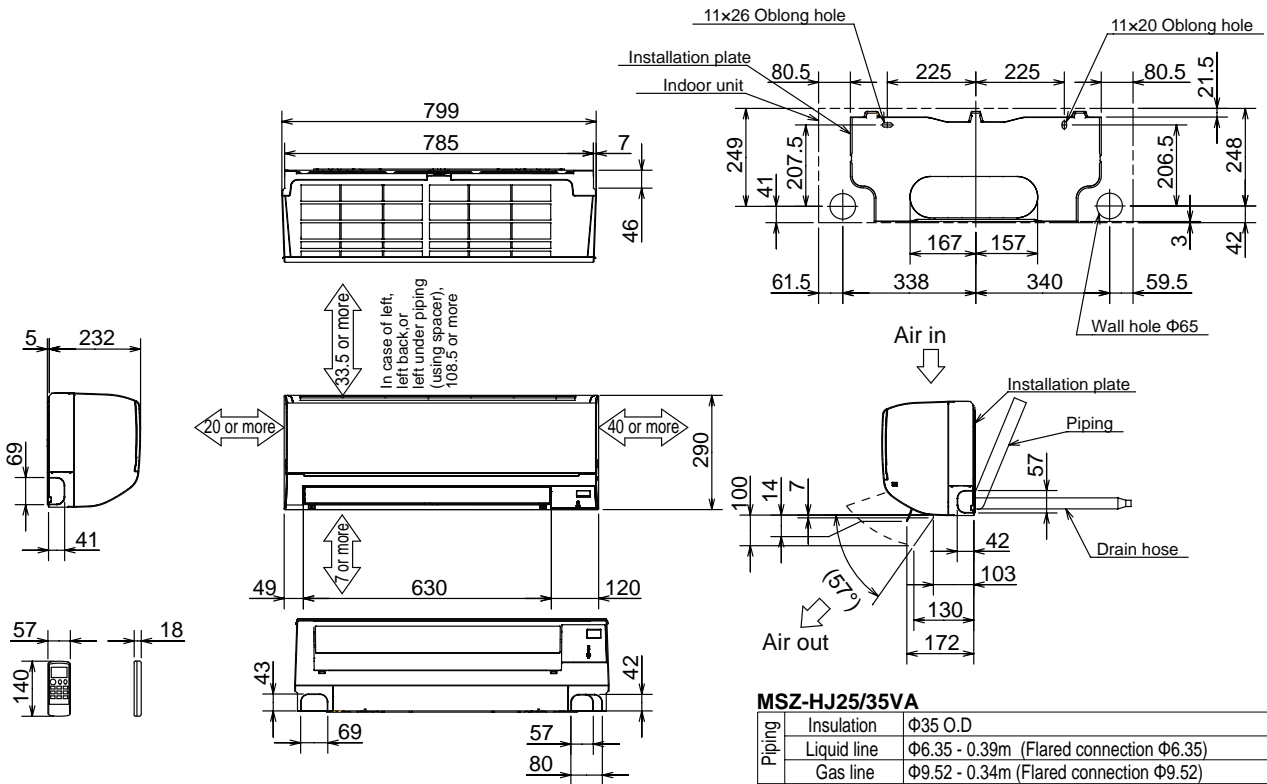


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OUTLINES AND DIMENSIONS

MSZ-HJ25VA MSZ-HJ35VA MSZ-HJ50VA

Unit : mm



MSZ-HJ25/35VA

Piping	Insulation	Φ35 O.D
	Liquid line	Φ6.35 - 0.39m (Flared connection Φ6.35)
	Gas line	Φ9.52 - 0.34m (Flared connection Φ9.52)
	Drain hose	Insulation Φ28 Connected part Φ16 O.D active length 370

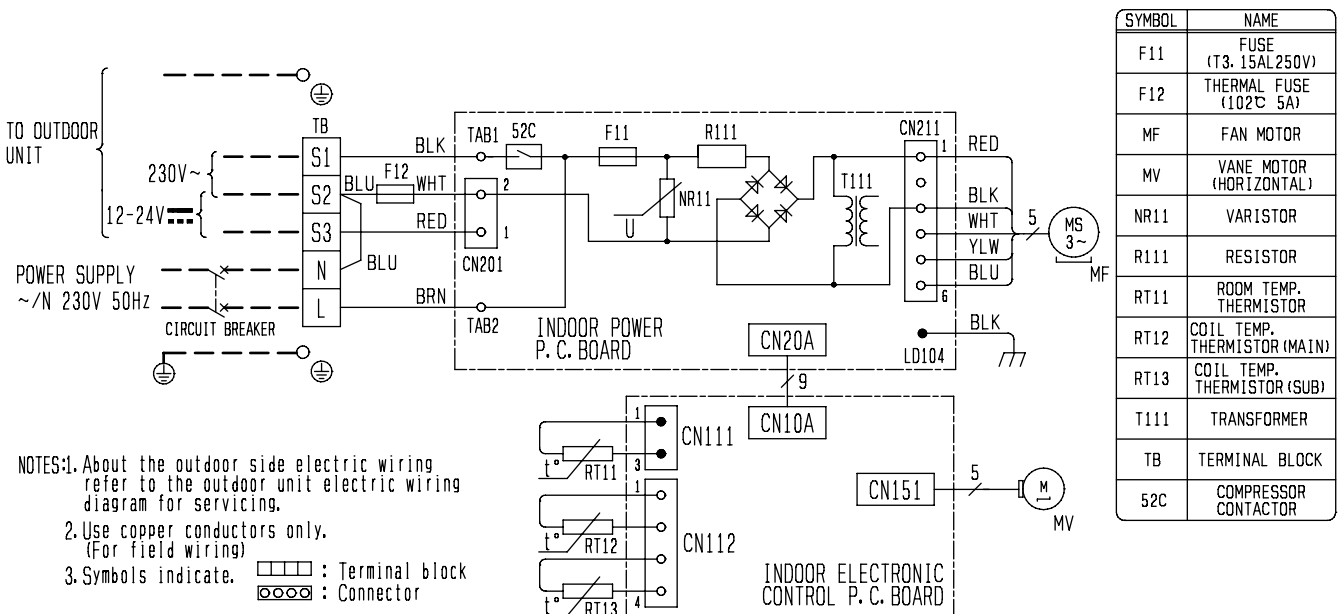
MSZ-HJ50VA

Piping	Insulation	Φ37 O.D
	Liquid line	Φ6.35 - 0.39m (Flared connection Φ6.35)
	Gas line	Φ9.52 - 0.34m (Flared connection Φ12.7)
	Drain hose	Insulation Φ28 Connected part Φ16 O.D active length 370

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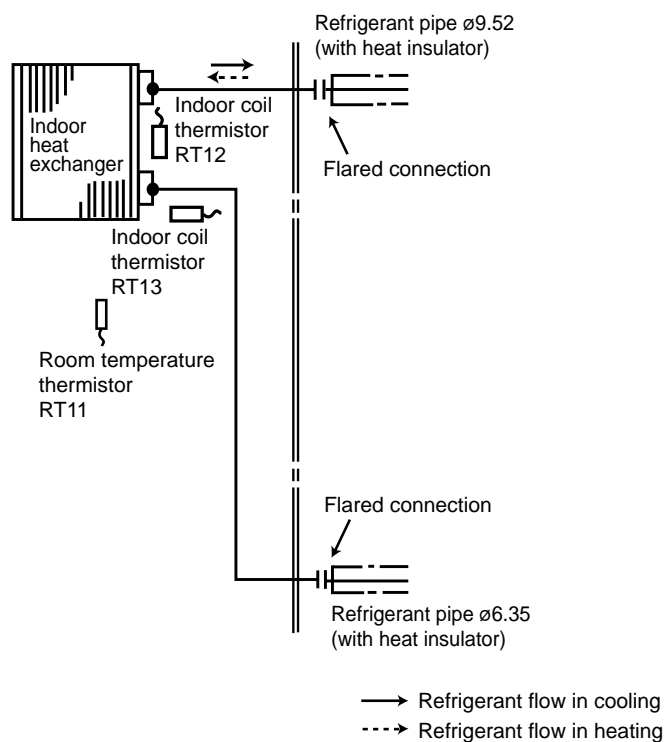
WIRING DIAGRAM

MSZ-HJ25VA MSZ-HJ35VA MSZ-HJ50VA

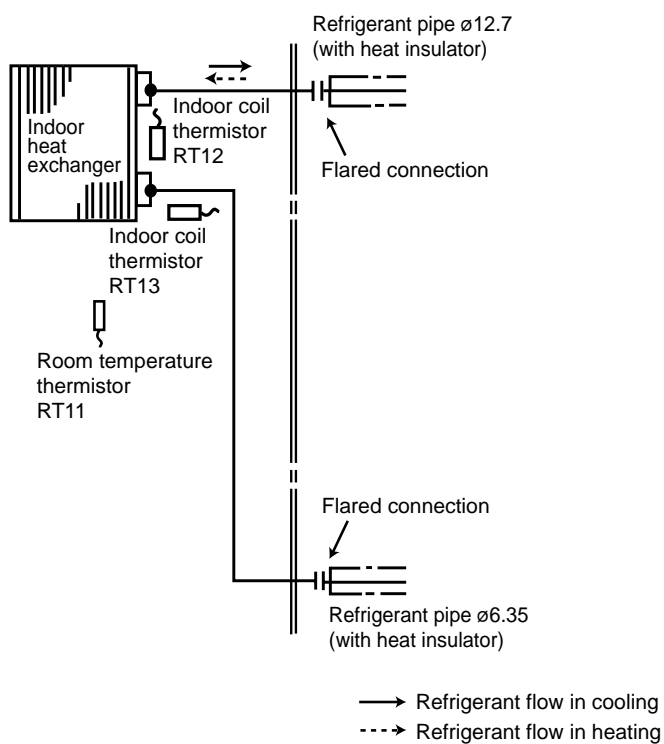


MSZ-HJ25VA MSZ-HJ35VA

Unit : mm



MSZ-HJ50VA



MSZ-HJ25VA MSZ-HJ35VA MSZ-HJ50VA

8-1. TIMER SHORT MODE

For service, the following set time can be shortened by short circuiting 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 short circuiting the timer short mode point.)

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

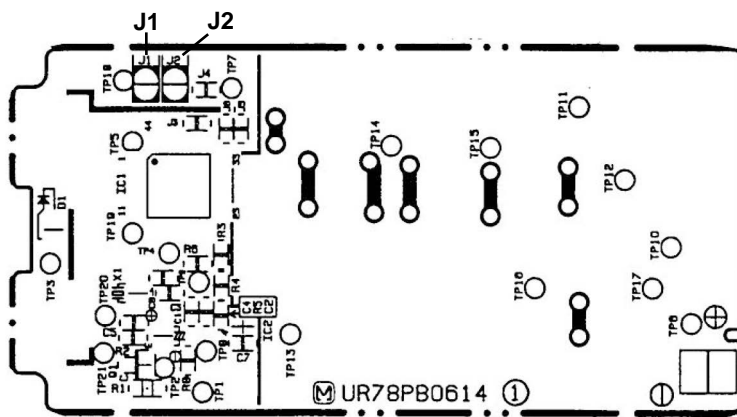
A maximum of 4 indoor units with wireless remote controllers can be used in a room.

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 :



NOTE : For modification, take out the batteries and press the OPERATE/STOP (ON/OFF) button 2 or 3 times at first.

After finish modification, put back the batteries then press the RESET button.

The P.C. board has the print "J1" and "J2". Solder "J1" and "J2" according to the number of indoor unit as shown in Table 1. After modification, press the RESET button.

Table 1

	1 unit operation	2 units operation	3 units operation	4 units operation
No. 1 unit	No modification	Same as at left	Same as at left	Same as at left
No. 2 unit	—	Solder J1	Same as at left	Same as at left
No. 3 unit	—	—	Solder J2	Same as at left
No. 4 unit	—	—	—	Solder both J1 and J2

How to set the remote controller exclusively for particular indoor unit

After you turn the breaker ON, the first remote controller that sends the signal to the indoor unit will be regarded as the remote controller for the indoor unit.

The indoor unit will only accept the signal from the remote controller that has been assigned to the indoor unit once they are set.

The setting will be cancelled if the breaker has turned OFF, or the power supply has shut down.

Please conduct the above setting once again after the power has restored.

8-3. AUTO RESTART FUNCTION

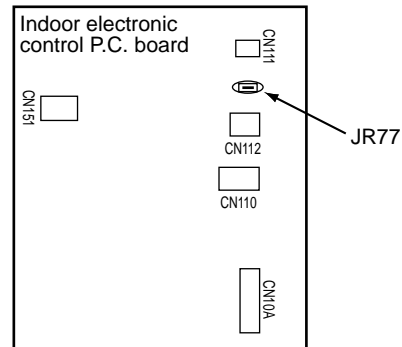
When the indoor unit is controlled with the remote controller, the operation mode, the set temperature, and the fan speed are memorized by the indoor electronic control P.C. board. "AUTO RESTART FUNCTION" automatically starts operation in the same mode just before the shutoff of the main power.

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.)

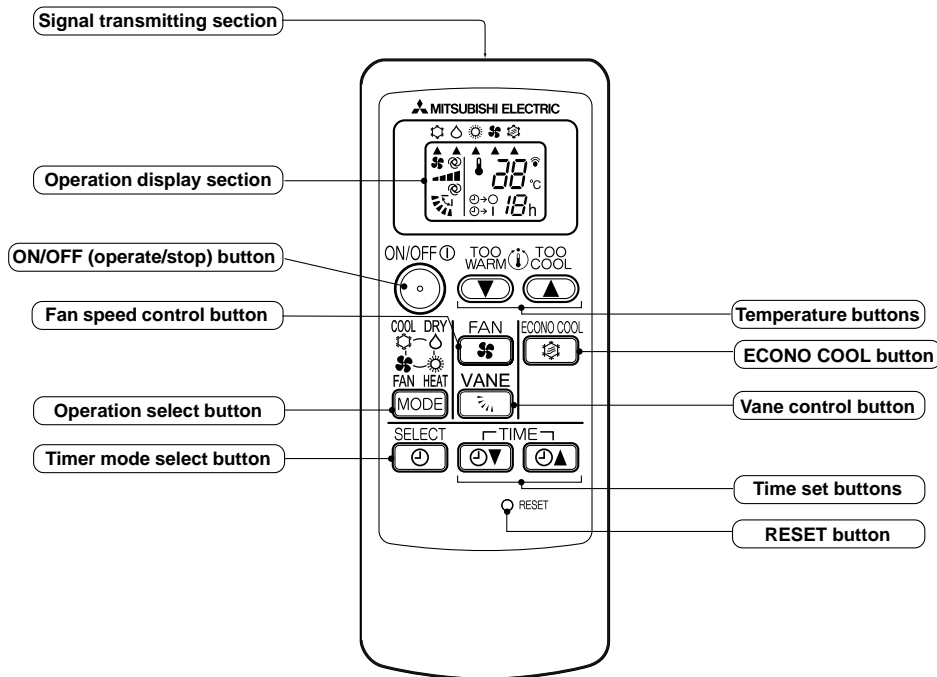


NOTE:

- 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 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 breaker 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 counter measures 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-HJ25VA MSZ-HJ35VA MSZ-HJ50VA

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	 Lighted  Blinking  Not lighted
 	The room temperature is approaching the set temperature	About 1 to 2°C from set temperature	

9-1. COOL (❄️) OPERATION

- Press OPERATE/STOP (ON/OFF) 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 OPERATE/STOP (ON/OFF) 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 is as same as COOL mode. (9-1.1.)

9-3. HEAT (☀) OPERATION

- (1) Press OPERATE/STOP (ON/OFF) 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.

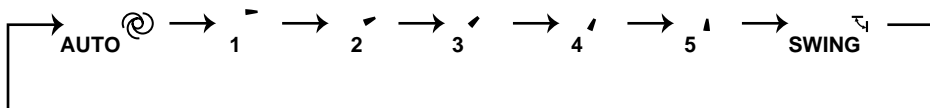
The compressor stops once, the indoor/outdoor fans stop, the 4-way valve reverses, and the compressor re-starts.

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.

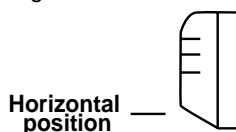
Confirming of standard position is performed in the following cases:

- (a) When the operation starts or finishes (including timer operation).
- (b) When the test run starts.

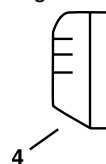
(4) VANE AUTO (@) mode

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 OPERATE/STOP (ON/OFF) 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.

(9) To change the airflow direction not to blow directly onto your body.

To change the airflow direction	When to use this function?	COOL/DRY	HEAT
Pressing and holding VANE CONTROL button for 2 seconds or more cause the horizontal vane to reverse and move to horizontal position.  Horizontal position	Use this function if you do not want the air from the indoor unit to blow directly onto your body. <ul style="list-style-type: none"> • Depending on the shape of the room, the air may blow directly onto your body. • Press VANE CONTROL button again to return the vane to the previously-set position. 	The air conditioner starts the cooling or drying operation approximately 3 minutes after the vane has moved to the horizontal position. <ul style="list-style-type: none"> • When VANE CONTROL button is pressed again, the vane returns to the previously-set position and the air conditioner starts the cool or dry operation in approximately 3 minutes. 	The air conditioner starts heating operation approximately 3 minutes after the vane has moved to the horizontal position. <ul style="list-style-type: none"> • Sometimes the area around your feet may not warm. To warm the area around the feet, set the horizontal vane to @ (AUTO) or the downward-blowing position. • When VANE CONTROL button is pressed again, the vane returns to the previously-set position and the air conditioner starts the heat operation in approximately 3 minutes.

NOTE :

- If you make the airflow not to blow directly onto your body by pressing VANE CONTROL button, the compressor stops for 3 minutes even during the operation of the air conditioner.
- The air conditioner operates with Very Low speed until the compressor turns on again.

(10) 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 OPERATE/STOP (ON/OFF) 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 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, has failed or the batteries of the remote controller run down. The unit will start and OPERATION INDICATOR lamp will light.

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.

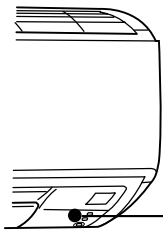
After 30 minutes of test run operation, the system shifts to EMERGENCY COOL/HEAT MODE with a set temperature of 24°C. The fan speed shifts to Med.

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 case of latter, normal operation will start.

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

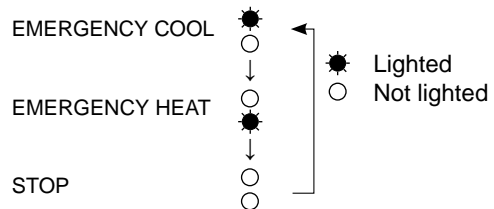


EMERGENCY OPERATION switch 

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 following

Operation Indicator lamp



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-HJ25VA MSZ-HJ35VA MSZ-HJ50VA

10-1. CAUTIONS ON TROUBLESHOOTING

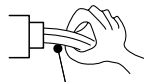
1. Before troubleshooting, check the following:

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

2. Take care of the following during servicing

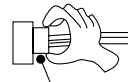
- 1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, and then after confirming the horizontal vane is closed, turn OFF the breaker and/or disconnect the power plug.
- 2) Be sure to turn OFF the power supply before removing the front panel, the 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 housing of the connector. DO NOT pull the lead wires.

<Incorrect>



Lead wiring

<Correct>



Housing point

3. Troubleshooting procedure

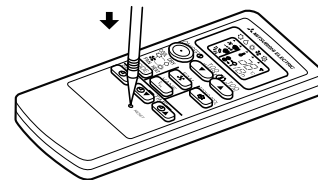
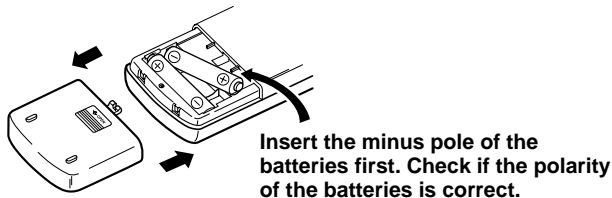
- 1) Check if the OPERATION INDICATOR lamp on the indoor unit is flashing ON and OFF to indicate an abnormality. To make sure, check how many times the OPERATION INDICATOR lamp is flashing ON and OFF before starting service work.
- 2) Before servicing, check that the connector and terminal are connected properly.
- 3) When the electronic control 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

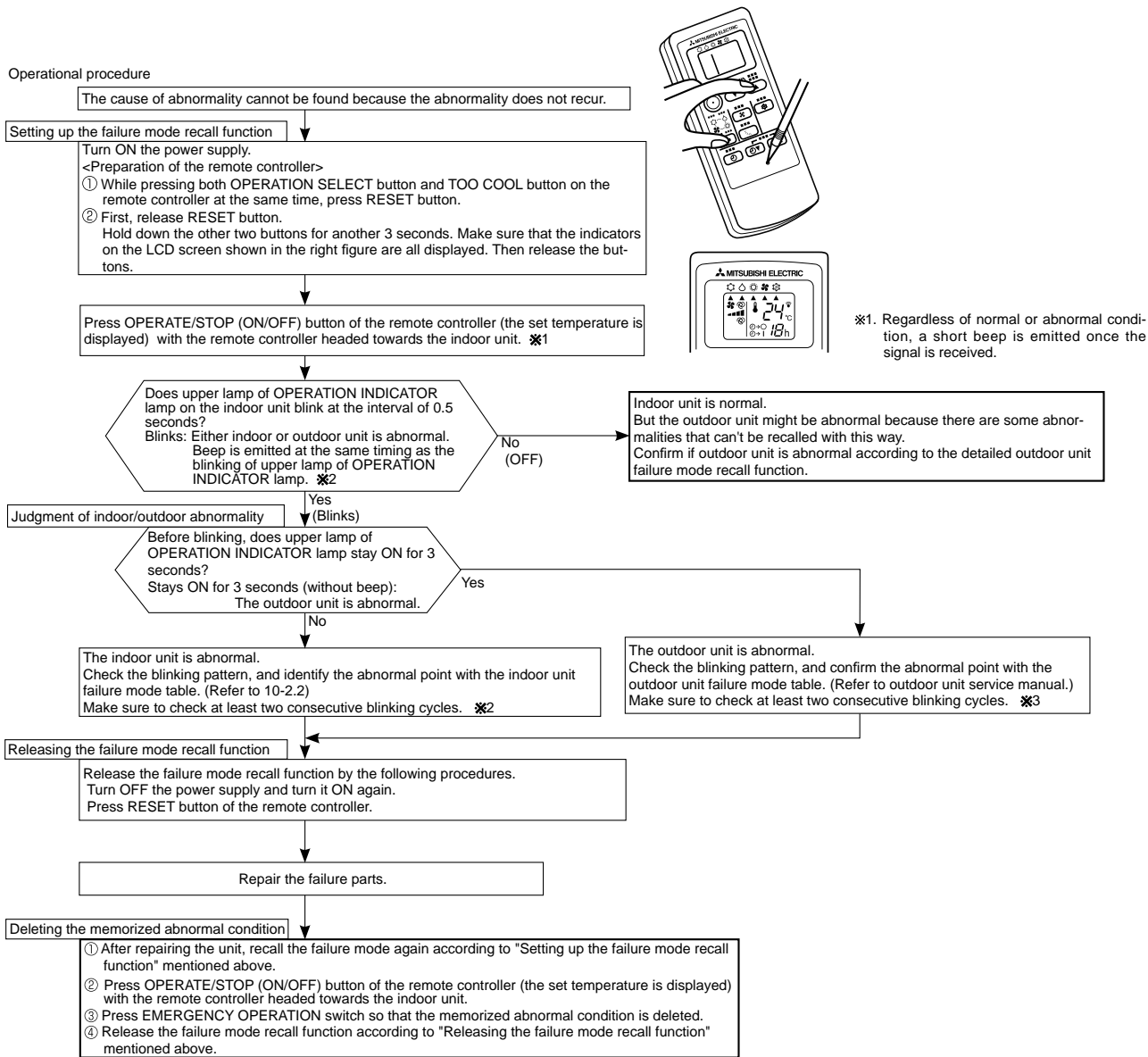
Outline of the function

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.

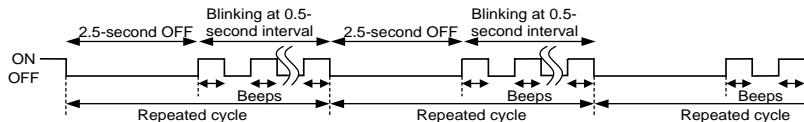
This mode is very useful when the unit needs to be repaired for the abnormality which does not recur.

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

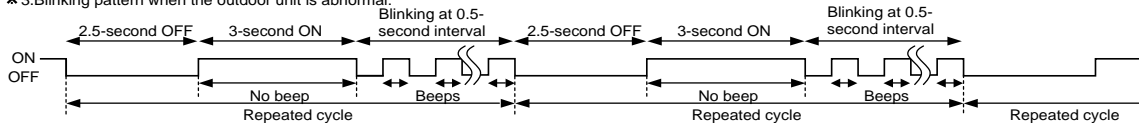


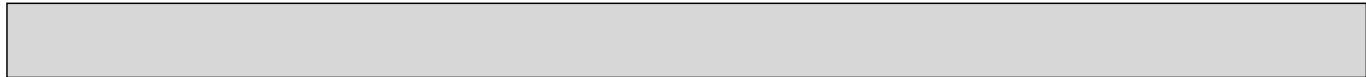
NOTE: 1. Make sure to release the failure mode recall function after it is set up, otherwise the unit cannot operate properly.
 2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

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



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



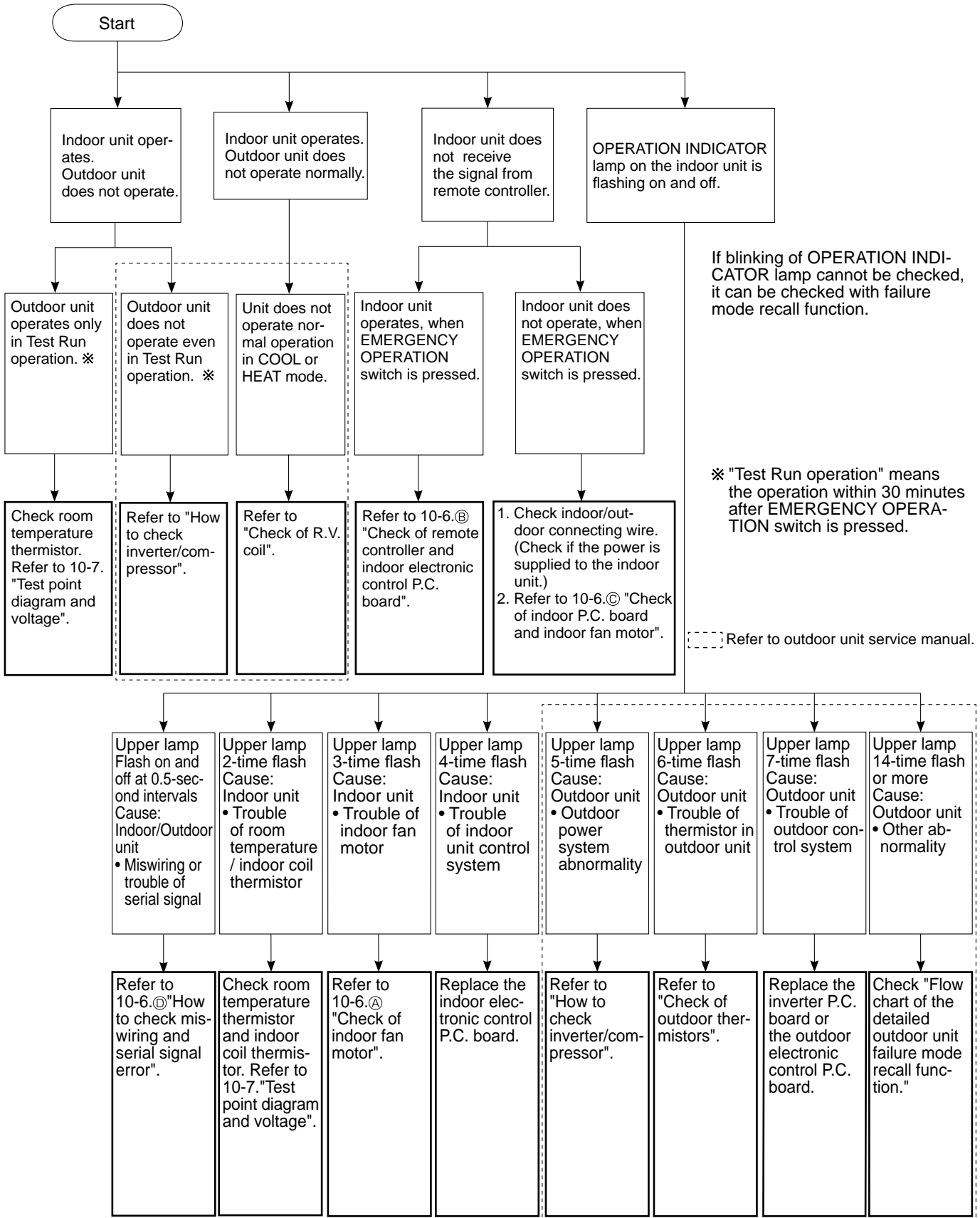


2. Indoor unit failure mode table

Upper lamp of OPERATION INDICATOR lamp	Abnormal point (Failure mode)	Condition	Remedy
Not lighted	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.Ⓒ "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.Ⓐ "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.

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

10-3. INSTRUCTION OF TROUBLESHOOTING



10-4. TROUBLESHOOTING CHECK TABLE

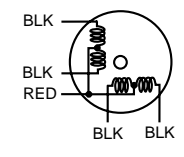
Before taking measures, make sure that the symptom reappears for accurate troubleshooting. When the indoor unit has started operation and detected an abnormality of the following condition (the first detection after the power ON), the indoor fan motor turns OFF and OPERATION INDICATOR lamp flashes.

OPERATION INDICATOR



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 Room temperature 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	Indoor fan motor	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 control system	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	Outdoor power 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 thermistors	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 control system	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	Other abnormality	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	Outdoor control system	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.

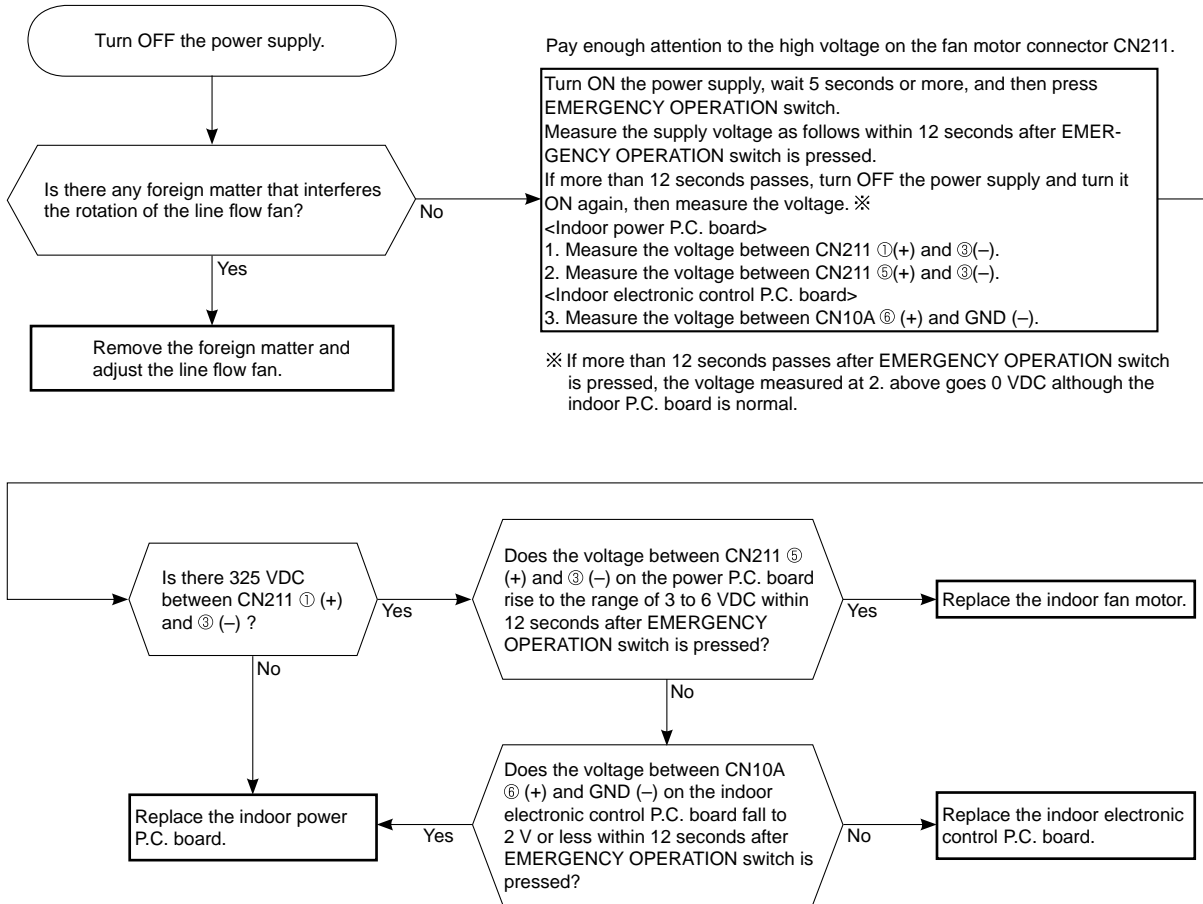
10-5. TROUBLE CRITERION OF MAIN PARTS
MSZ-HJ25VA MSZ-HJ35VA MSZ-HJ50VA

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)	Measure the resistance between the terminals with a tester. (Part temperature 10 ~ 30°C) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Color of the lead wire</th> <th>Normal</th> </tr> </thead> <tbody> <tr> <td>RED - BLK</td> <td>235 ~ 255 Ω</td> </tr> </tbody> </table>	Color of the lead wire	Normal	RED - BLK	235 ~ 255 Ω	
Color of the lead wire	Normal					
RED - BLK	235 ~ 255 Ω					

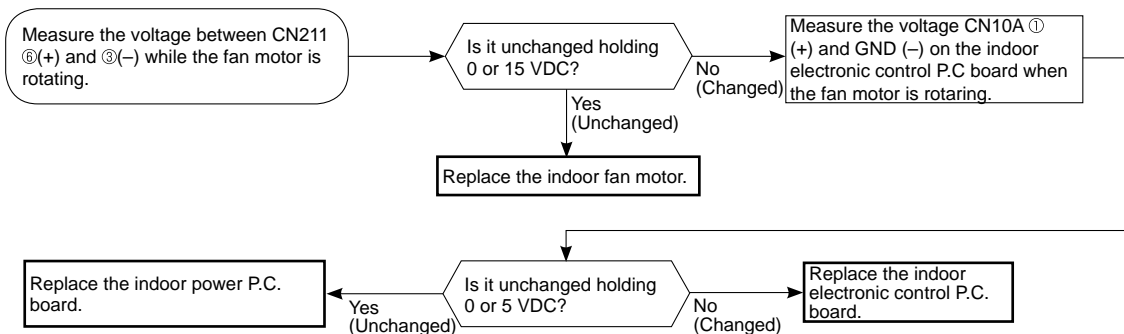
10-6. TROUBLESHOOTING FLOW

A Check of indoor fan motor

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

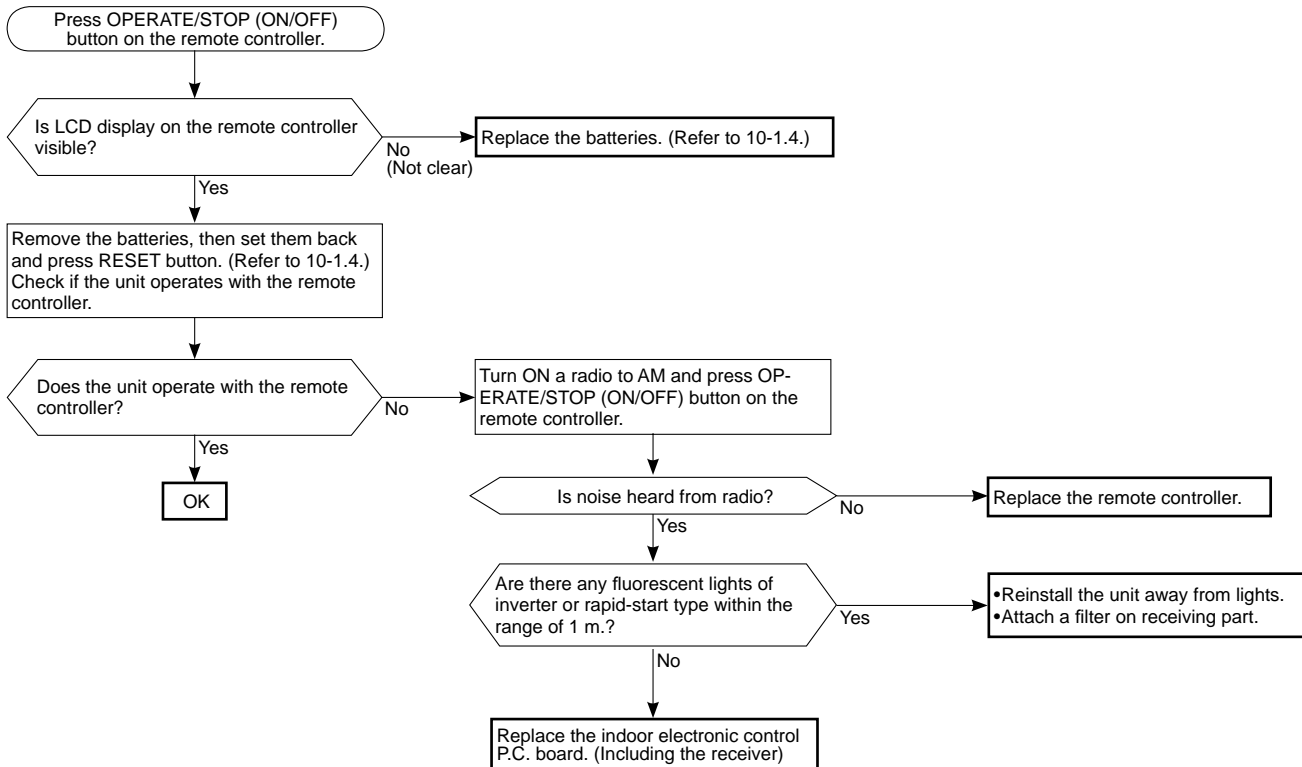


The indoor fan motor error has occurred, and the indoor fan repeats "12-second ON and 30-second OFF" 3 times, and then stops.

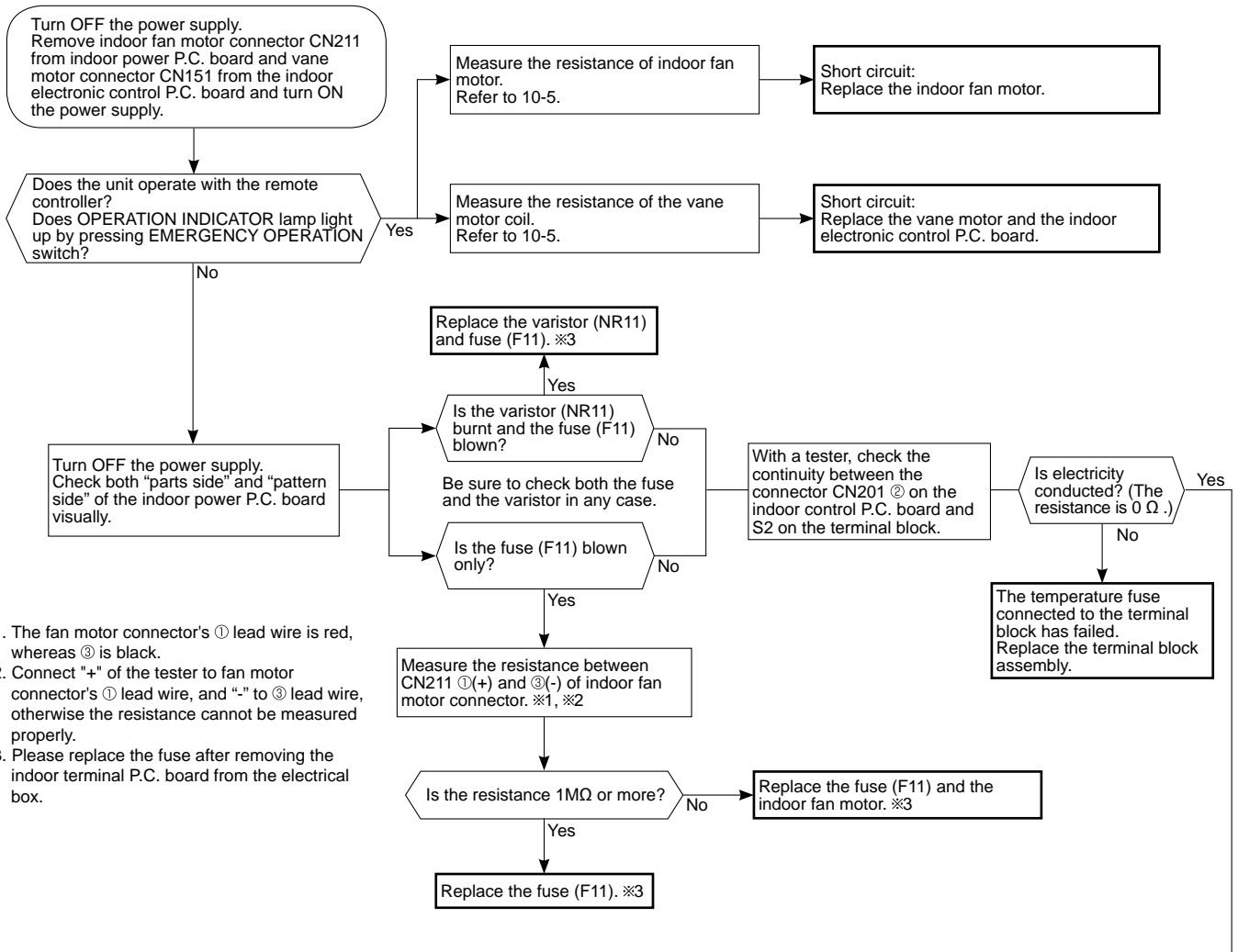


B Check of remote controller and indoor electronic control P.C. board

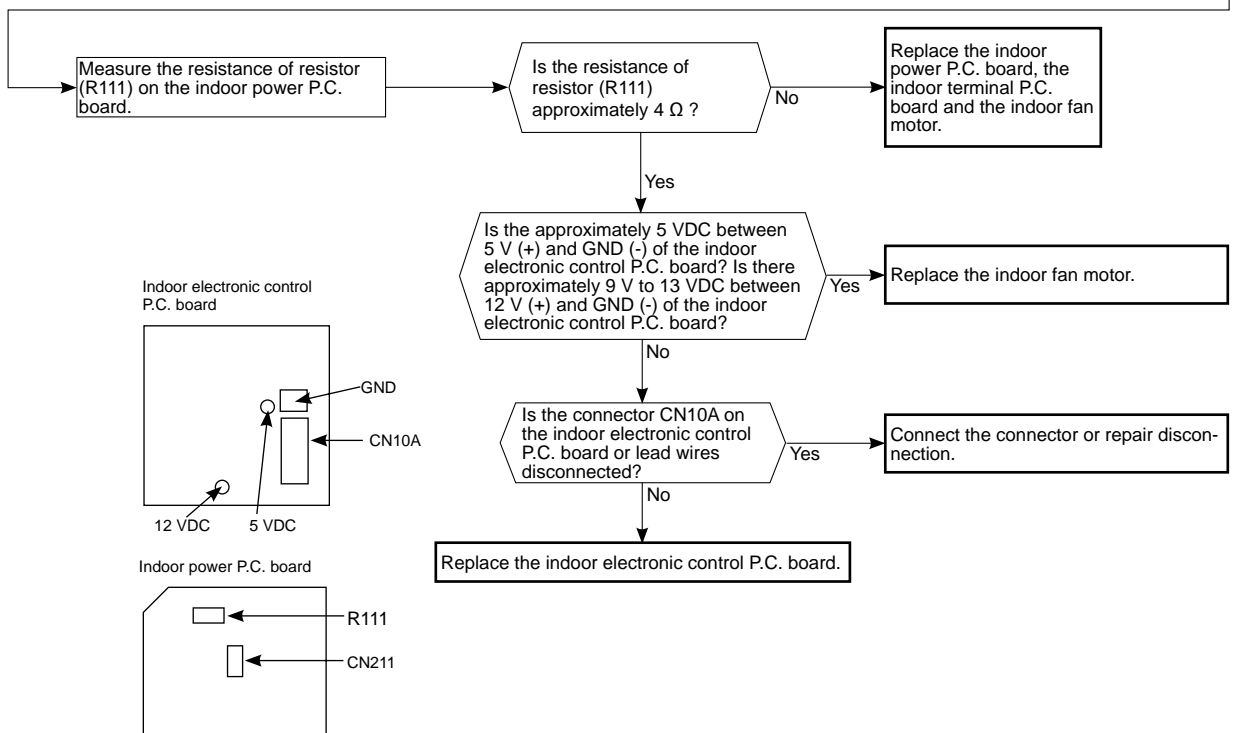
※Check if the remote controller is exclusive for this air conditioner.



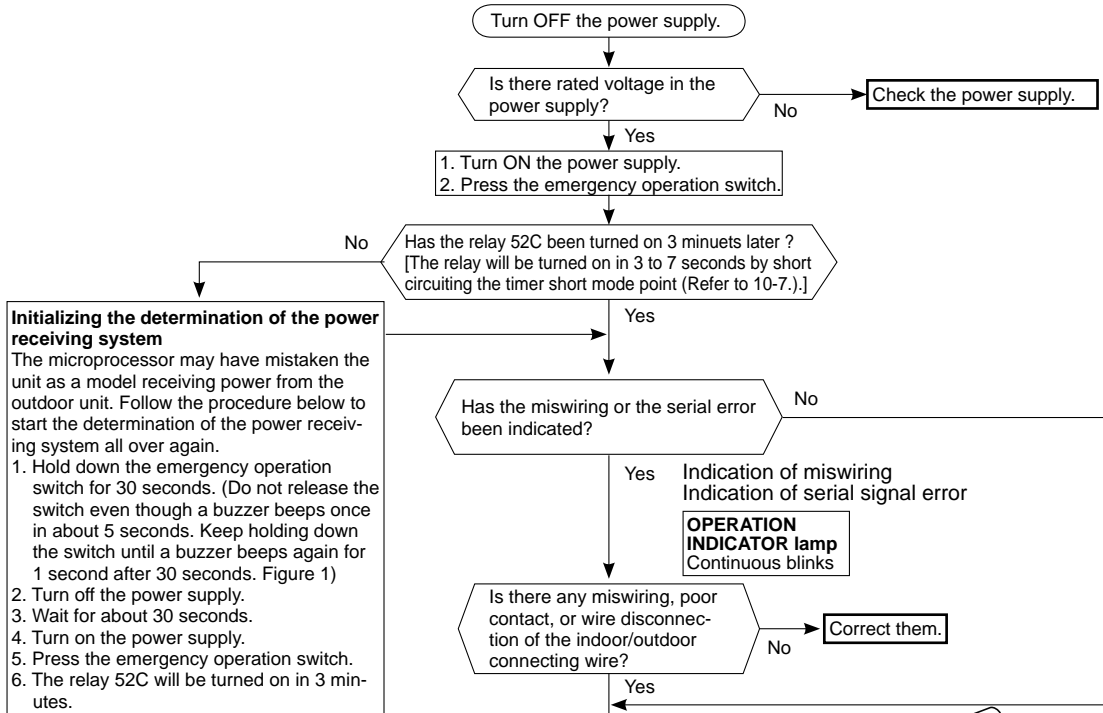
C Check of indoor P.C. board and indoor fan motor



- ※1. The fan motor connector's ① lead wire is red, whereas ③ is black.
- ※2. Connect "+" of the tester to fan motor connector's ① lead wire, and "-" to ③ lead wire, otherwise the resistance cannot be measured properly.
- ※3. Please replace the fuse after removing the indoor terminal P.C. board from the electrical box.



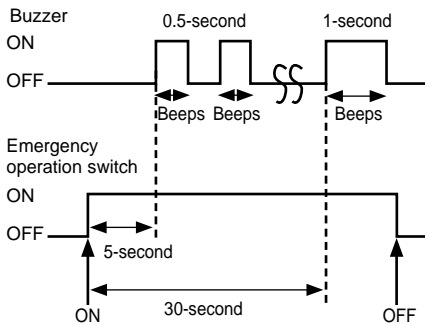
D How to check miswiring and serial signal error



Initializing the determination of the power receiving system
The microprocessor may have mistaken the unit as a model receiving power from the outdoor unit. Follow the procedure below to start the determination of the power receiving system all over again.

1. Hold down the emergency operation switch for 30 seconds. (Do not release the switch even though a buzzer beeps once in about 5 seconds. Keep holding down the switch until a buzzer beeps again for 1 second after 30 seconds. Figure 1)
2. Turn off the power supply.
3. Wait for about 30 seconds.
4. Turn on the power supply.
5. Press the emergency operation switch.
6. The relay 52C will be turned on in 3 minutes.

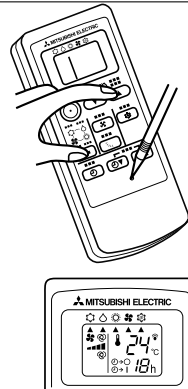
Figure 1



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

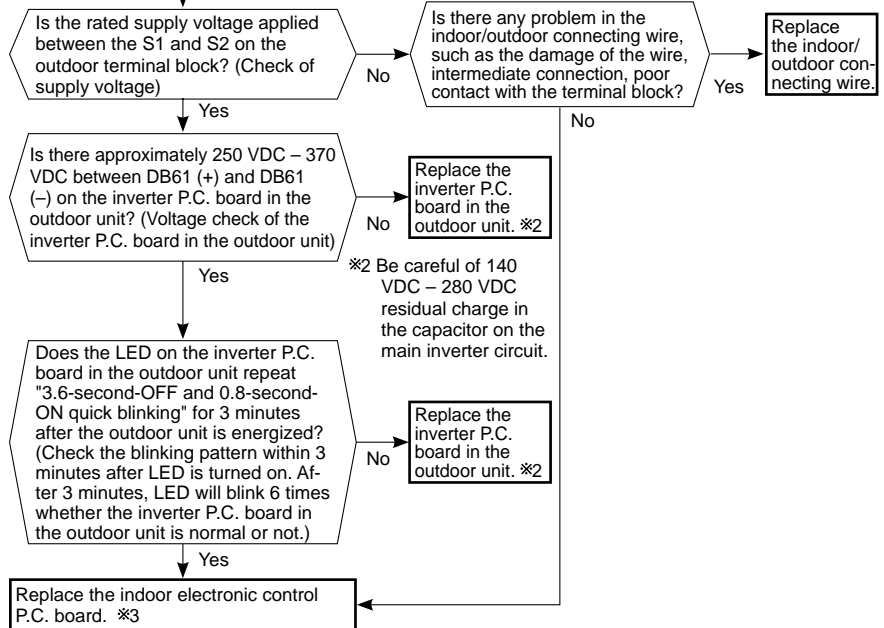
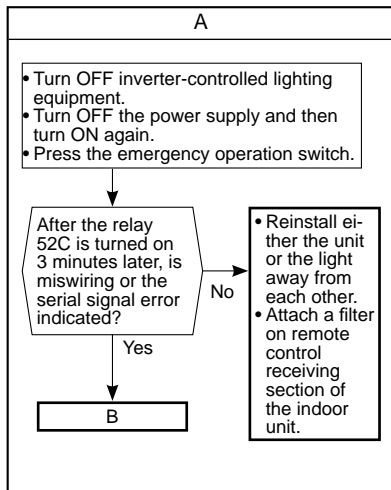
<Preparation of the remote controller>

- 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 two 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 OPERATE/STOP (ON/OFF) button. The relay 52C will be turned on, and the outdoor unit will be energized.

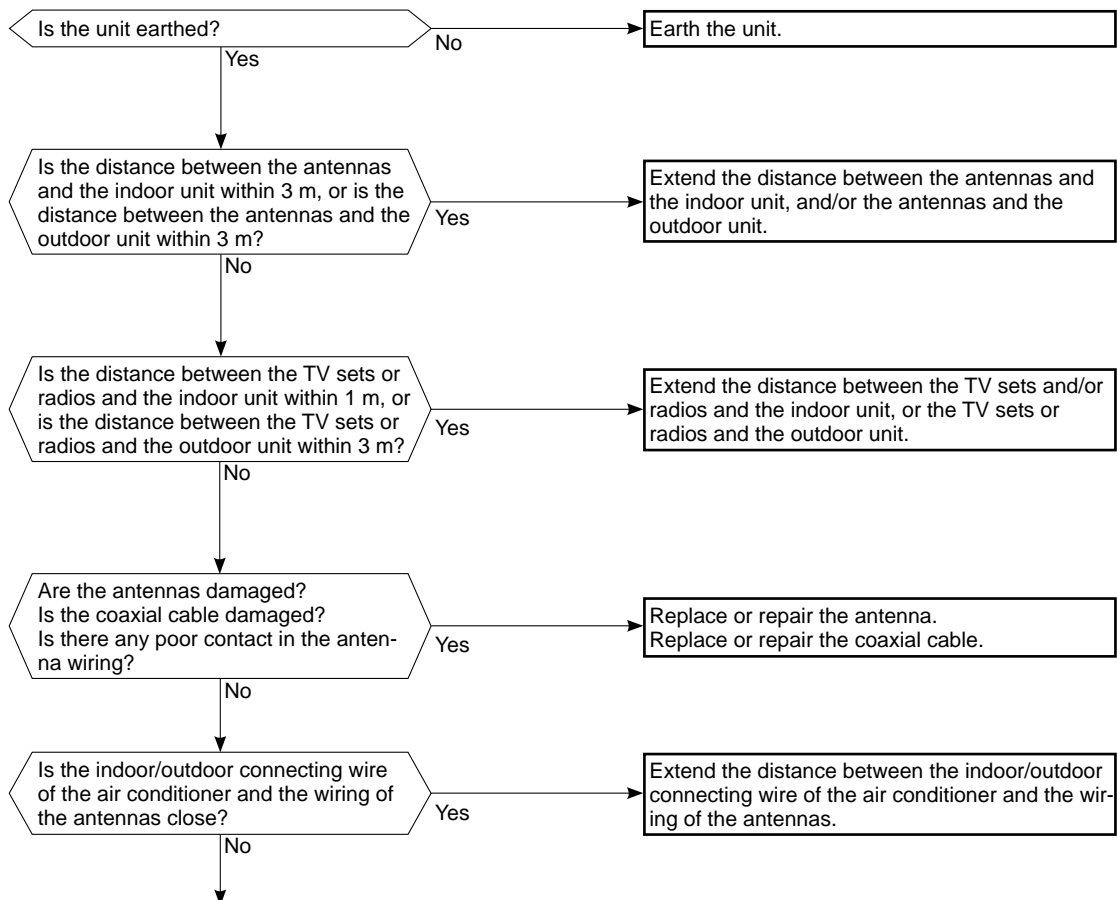
*1 Make sure that the wiring is correct. If the procedure is performed without correcting miswiring, it may lead to damage to the P.C. board.



*2 Be careful of 140 VDC – 280 VDC residual charge in the capacitor on the main inverter circuit.

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

E Electromagnetic noise enters into TV sets or radios



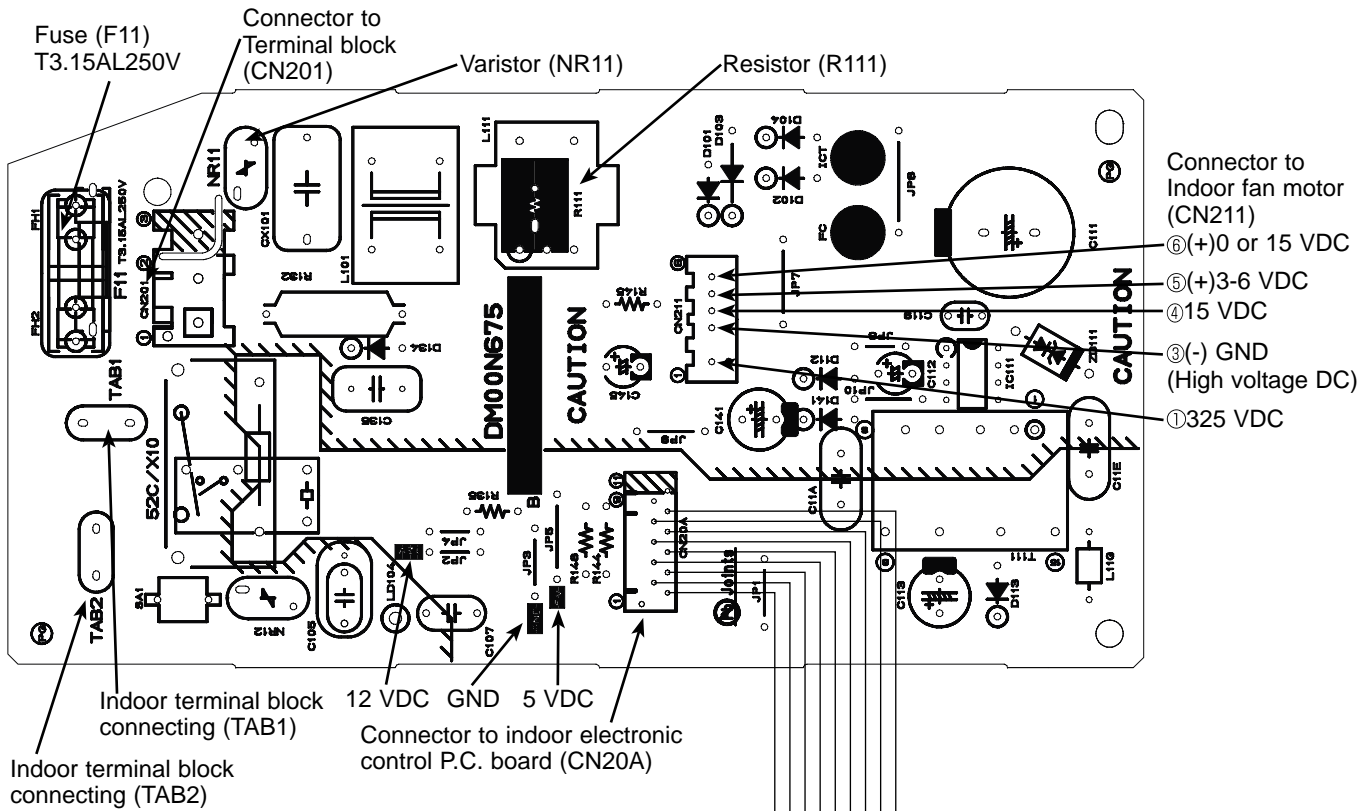
Even if all of the above conditions are fulfilled, the electromagnetic noise may enter, depending on the electric field strength or the installation condition (combination of specific conditions such as antennas or wiring).
Check the following before asking for service.

1. Devices affected by the electromagnetic noise
TV sets, radios (FM/AM broadcast, shortwave)
2. Channel, frequency, broadcast station affected by the electromagnetic noise
3. Channel, frequency, broadcast station unaffected by the electromagnetic noise
4. Layout of ;
indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, earth wire, antennas, wiring from antennas, receiver
5. Electric field intensity of the broadcast station affected by the electromagnetic noise
6. Presence or absence of amplifier such as booster
7. Operation condition of air conditioner when the electromagnetic noise enters in
 - 1) Turn OFF the power supply once, and then turn ON the power supply. In this situation, check for the electromagnetic noise.
 - 2) Within 3 minutes after turning ON the power supply, press OPERATE/STOP (ON/OFF) button on the remote controller for power ON, and check for the electromagnetic noise.
 - 3) After a short time (3 minutes later after turning ON), the outdoor unit starts running. During operation, check for the electromagnetic noise.
 - 4) Press OPERATE/STOP (ON/OFF) button on the remote controller for power OFF, when the outdoor unit stops but the indoor/outdoor communication still runs on. In this situation, check for the electromagnetic noise.

10-7. TEST POINT DIAGRAM AND VOLTAGE

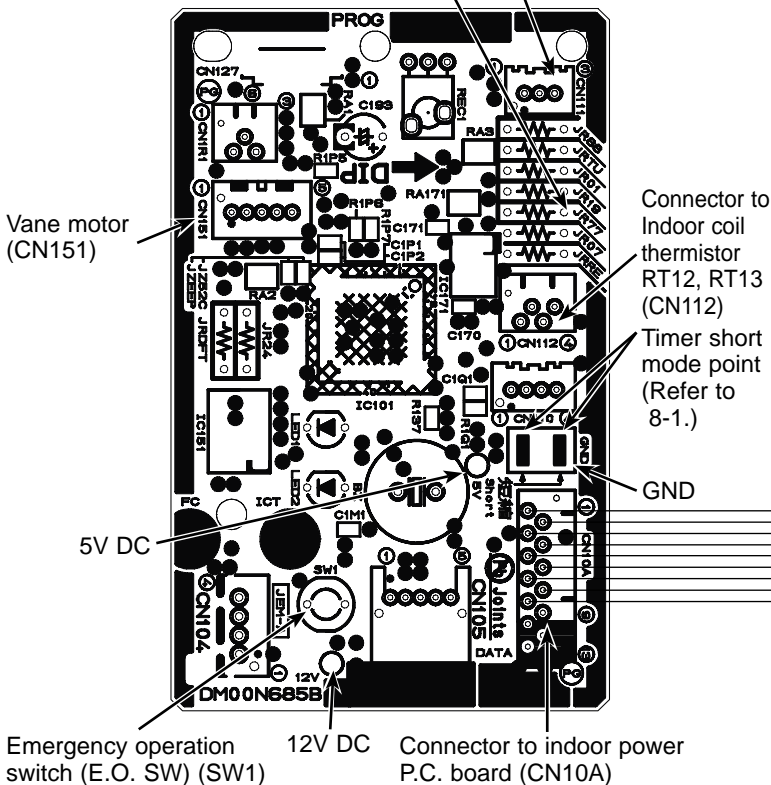
1. Indoor power P.C. board

MSZ-HJ25VA MSZ-HJ35VA MSZ-HJ50VA

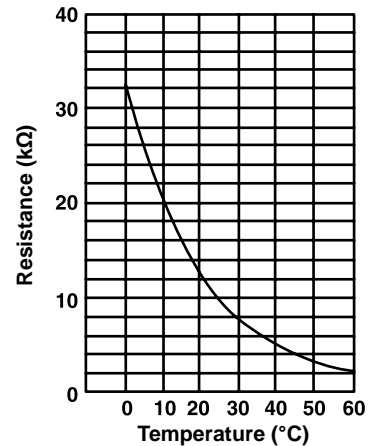


2. Indoor electronic control P.C. board

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)



<"Terminal with locking mechanism" Detaching points>

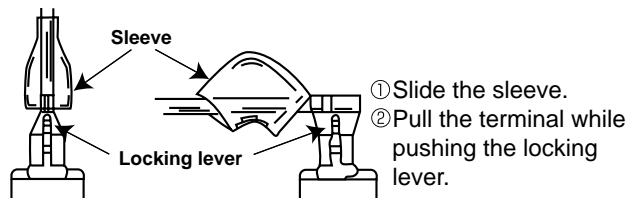
The terminal which has the locking mechanism can be detached as shown below.

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

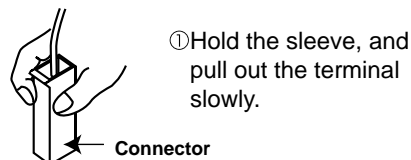
The terminal without locking mechanism can be detached by pulling it out.

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.



MSZ-HJ25VA MSZ-HJ35VA MSZ-HJ50VA

NOTE: Turn OFF power supply before disassembly.

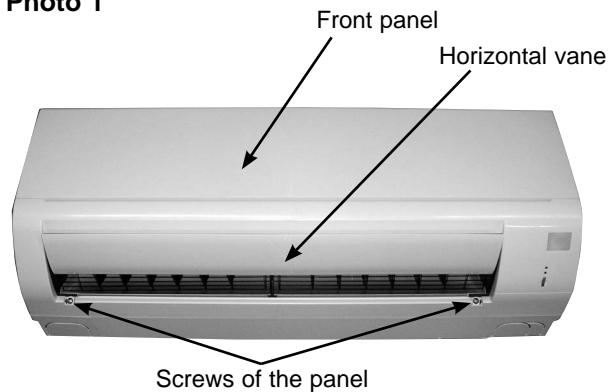
OPERATING PROCEDURE

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 (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 A. Pass the lead wires of the fan motor through B as shown in the Photo 3.

PHOTOS

Photo 2

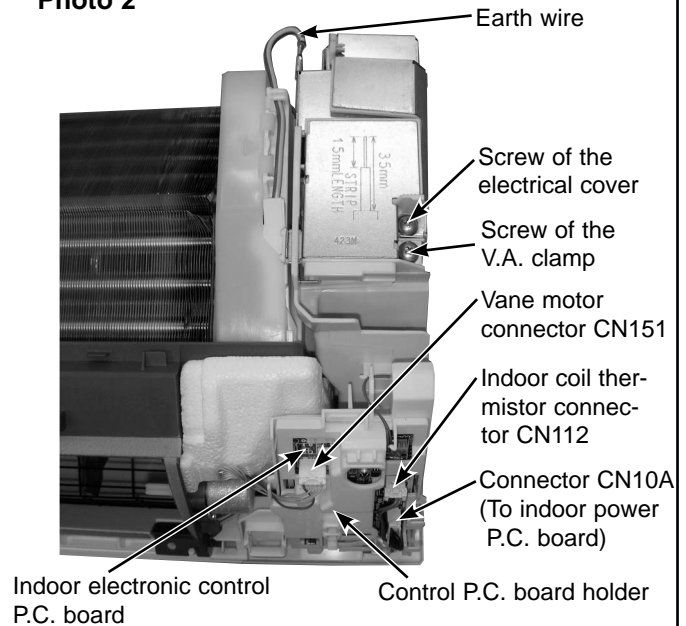
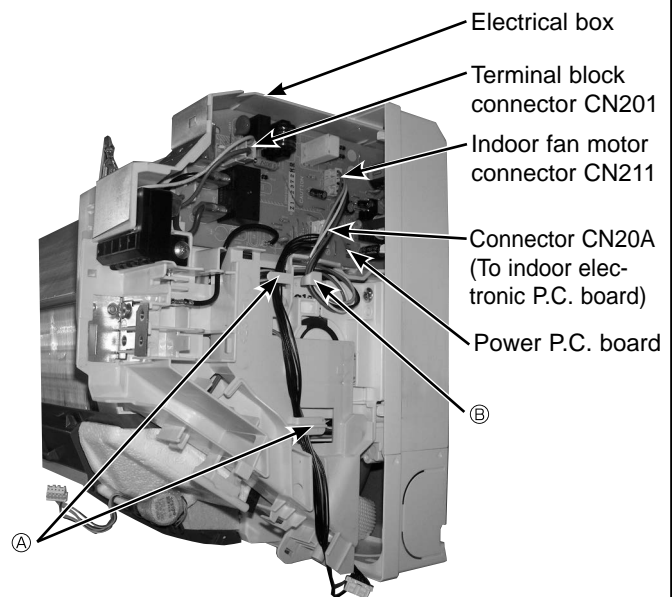


Photo 3



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.

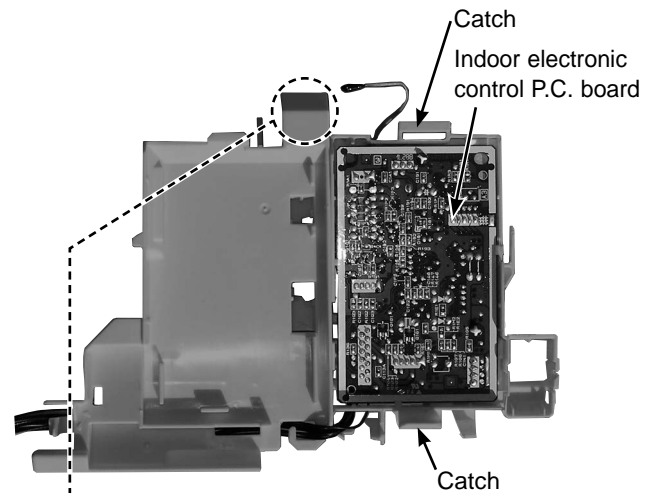
4. Removing the vane motor

- (1) Remove the panel. (Refer to 1.) Remove the right 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)

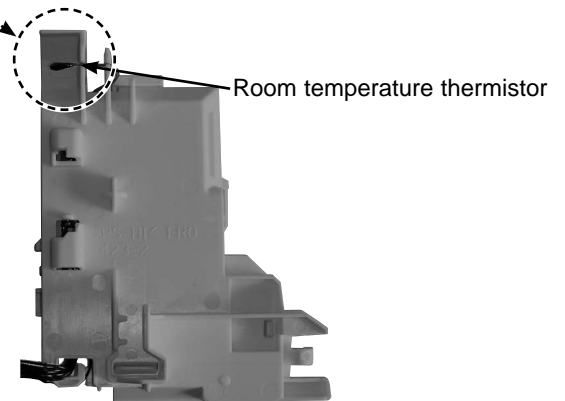
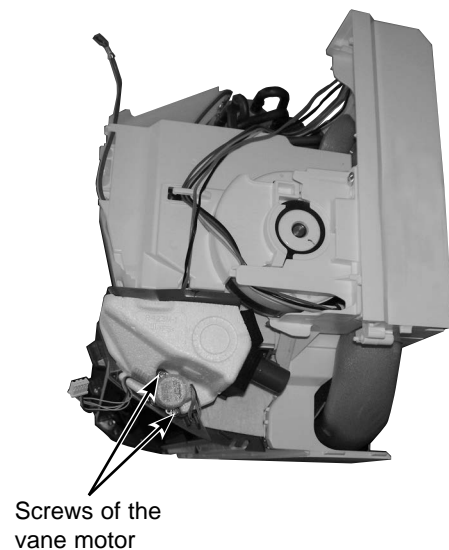


Photo 5

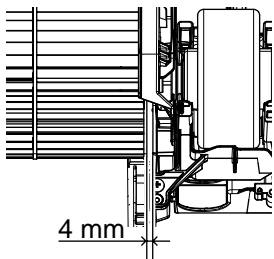


OPERATING PROCEDURE

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

- (1) Remove the panel. (Refer to 1.) Remove the right 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

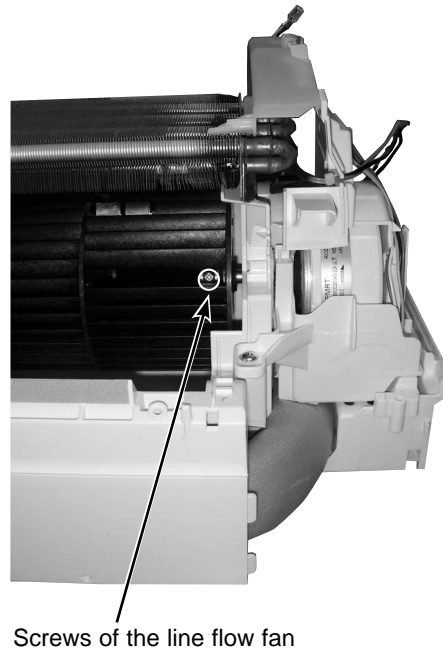


Photo 7

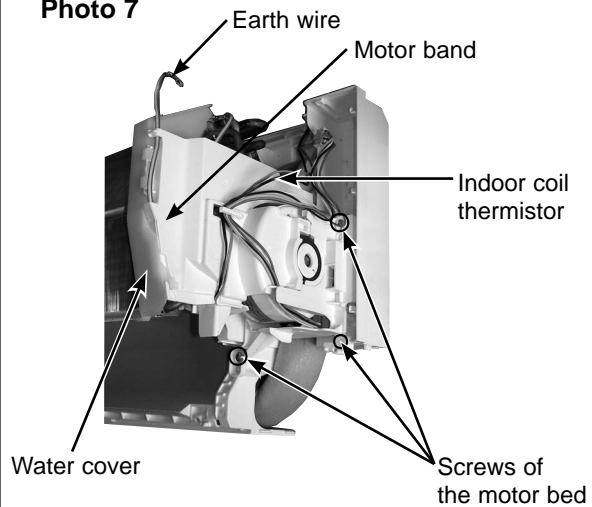
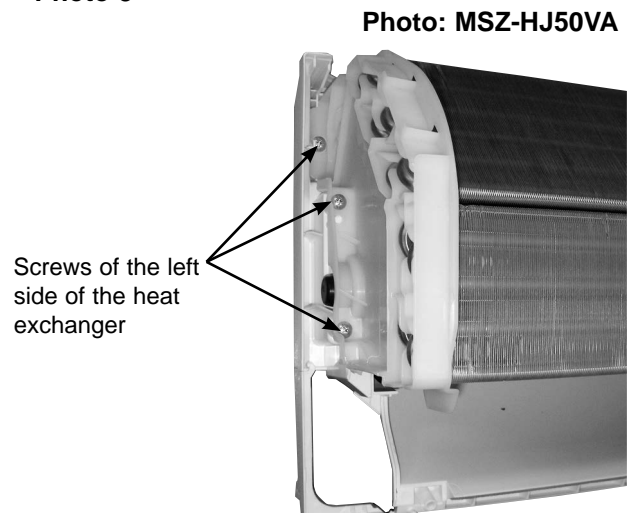


Photo 8



Fixing the indoor coil thermistor

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

Clip shape

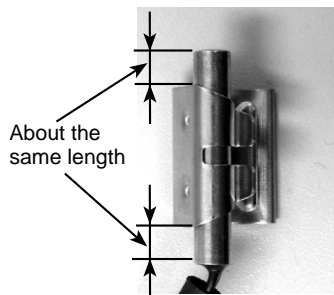


Holder shape



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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