Changes for the Better

MITSUBISHI ELECTRIC

SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

Revision C:
• 3.SPECIFICATION has been corrected.

Please void OB378 REVISED EDITION-B.

INDOOR UNIT

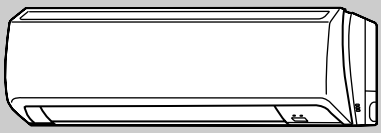
SERVICE MANUAL

No. OB378
REVISED EDITION-C

Wireless type
Models

MSZ-GA22VA - E1
MSZ-GA22VA - E2
MSZ-GA22VA - E3
MSZ-GA25VA - E1
MSZ-GA25VA - E2
MSZ-GA25VA - E3
MSZ-GA35VA - E1
MSZ-GA35VA - E2
MSZ-GA35VA - E3

Outdoor unit service manual
MUZ-GA·VA Series (OB379)
MXZ-A·VA Series (OB377)
MXZ-8A140VA$_1$ (OC316)



CONTENTS

NOTE:
RoHS compliant products have <G> mark on the spec name plate.
For servicing of RoHS compliant products, refer to the RoHS Parts List.

CE

Revision A:
• MSZ-GA·VA-E2 has been added.
Color of BOX and CORNER BOX has been changed to white.

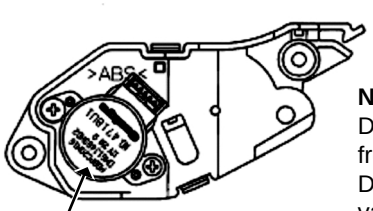
Revision B:
• E3 model has been added.
• Failure mode recall function(9-2.) has been changed.
• RoHS PARTS LIST has been added.

Revision C:
• 3.SPECIFICATION has been corrected.
Air flow of indoor units connecting to MXZ-8A140VA$_1$ has been corrected.

1 TECHNICAL CHANGES

MSZ-A09YV -E1 → MSZ-GA22VA -E1
MSZ-A09YV -E1 → MSZ-GA25VA -E1
MSZ-A12YV -E1 → MSZ-GA35VA -E1

1. Indication of capacity has been changed.(BTU base →kW base)
2. Control method between indoor and outdoor has been changed.
3. Power supply method has been changed (change to supply from outdoor unit).
4. Power supply cord has been removed.
5. Indoor electronic control P.C. board has been changed.
6. Position of terminal block has been changed.
7. Indoor fan motor has been changed. (AC → DC)
8. Indoor heat exchanger has been changed.
9. The horizontal vane motor unit has been changed.
   An external gear is added to the generalized stepping motor.
   The unit is structured so that the driving torque and stopping torque would increase.



Generalized stepping motor

NOTE:
Do not remove the vane motor from the motor unit.
Do not disassemble the horizontal vane motor unit.

10. Air cleaning filer has been removed (available as an optional part).
11. Signal of remote controller has been changed. (It is not available for the conventional models.)
12. Symbol on terminal block has been changed (to S1/S2/S3).

MSZ-GA22VA-E1 → MSZ-GA22VA-E2
MSZ-GA25VA-E1 → MSZ-GA25VA-E2
MSZ-GA35VA-E1 → MSZ-GA35VA-E2

1. Color of BOX and CORNER BOX has been changed to white.

MSZ-GA22VA-E2 → MSZ-GA22VA-E3
MSZ-GA25VA-E2 → MSZ-GA25VA-E3
MSZ-GA35VA-E2 → MSZ-GA35VA-E3

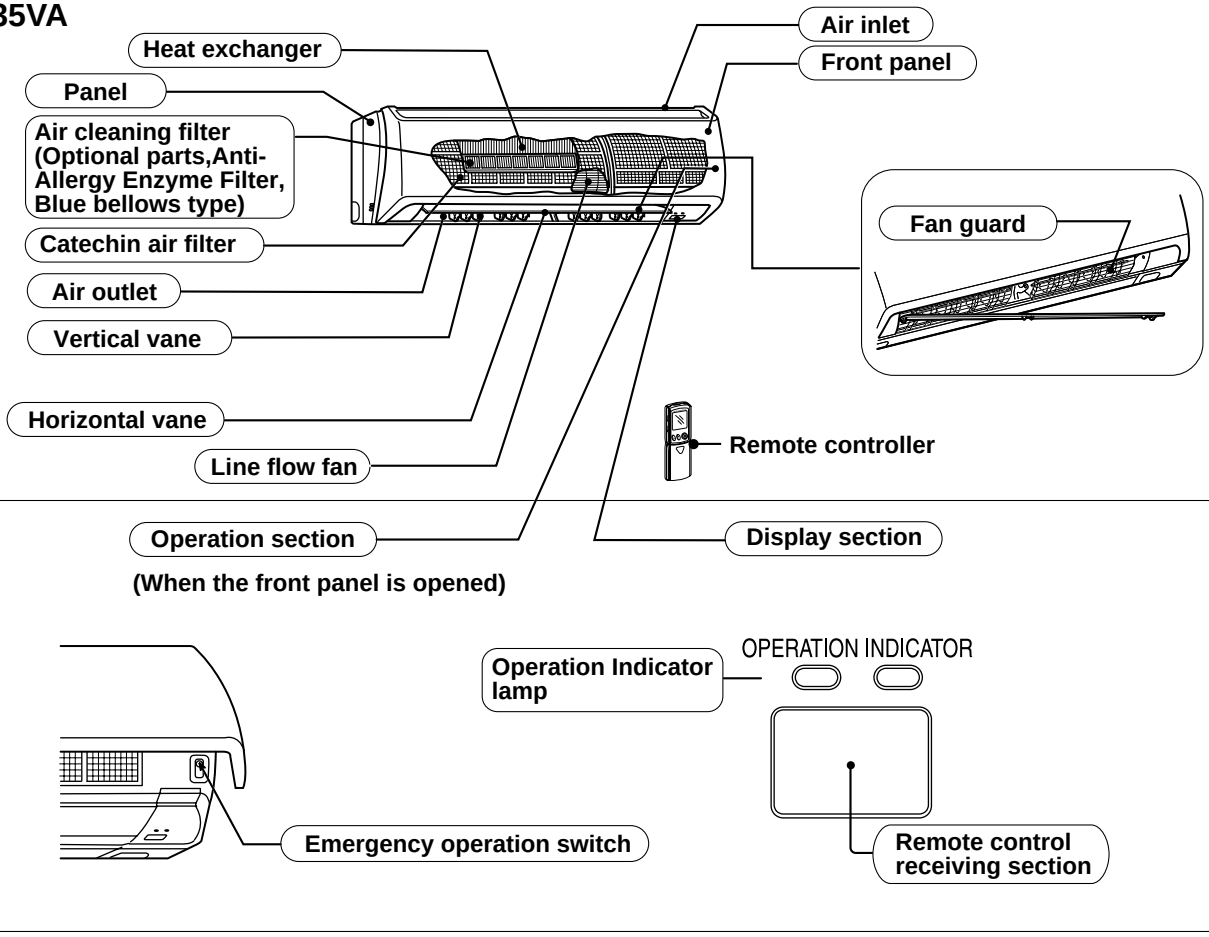
1. The operation of thermo-off-unit has been changed. (When 2 or more indoor units are connected with a multi type outdoor unit, and operated in heat mode.)
   <E1,E2> Indoor fan operates with very Low speed or stops.
   <E3> Indoor fan operates intermittently with very Low speed or stops.

MSZ-GA25VA-E2 → MSZ-GA25VA-E3

1. Indoor fan speed has been changed.

2 PART NAMES AND FUNCTIONS

MSZ-GA22VA
MSZ-GA25VA
MSZ-GA35VA

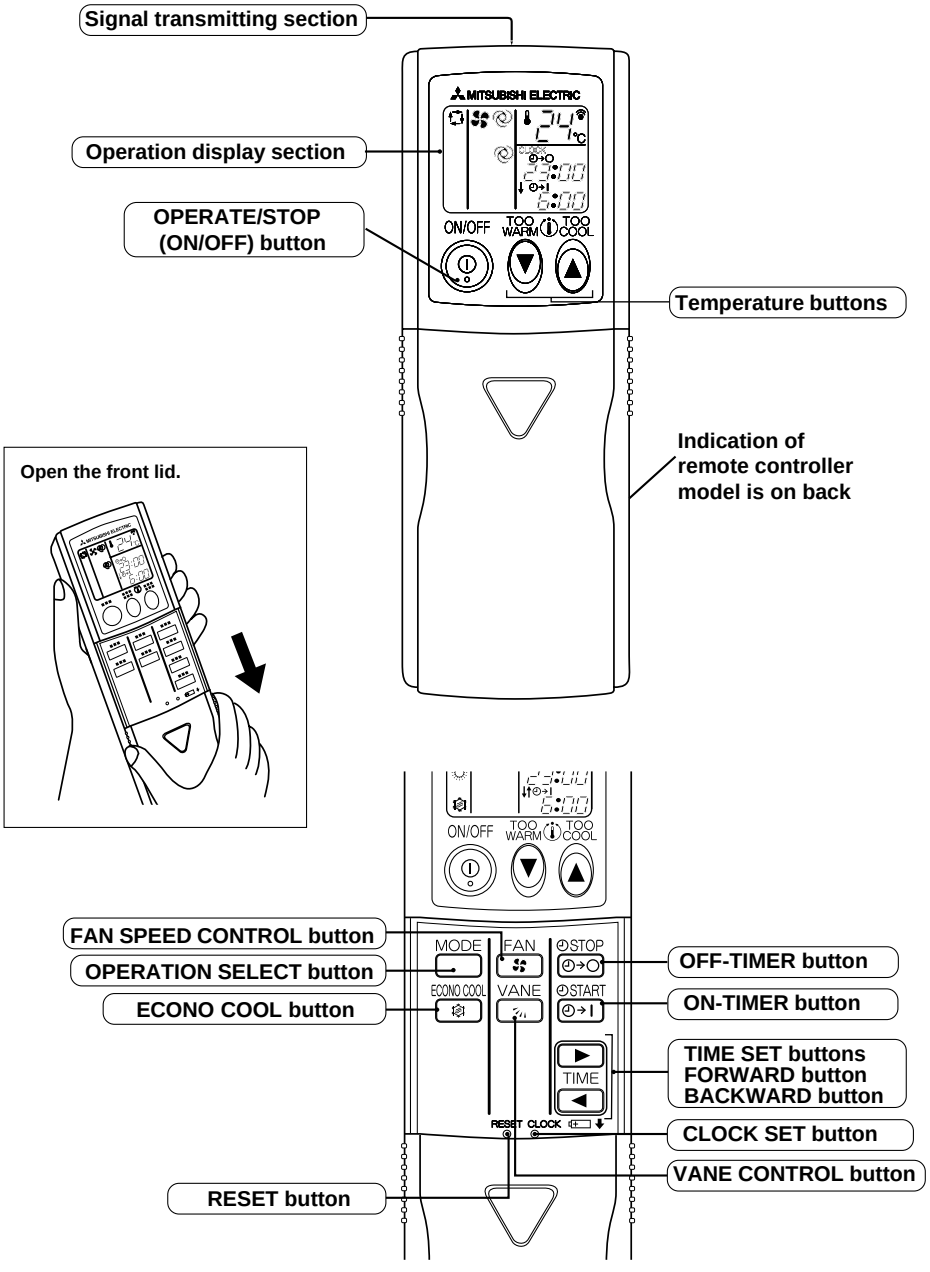


MSZ-GA22VA
MSZ-GA25VA
MSZ-GA35VA

ACCESSORIES

①	Installation plate	1
②	Installation plate fixing screw 4 × 25 mm	5
③	Remote controller holder	1
④	Fixing screw for ③ 3.5 × 1.6 mm (Black)	2
⑤	Battery (AAA) for remote controller	2
⑥	Wireless remote controller	1
⑦	Felt tape (Used for left or left-rear piping)	1

REMOTE CONTROLLER



3 SPECIFICATION

Indoor model			MSZ-GA22VA		MSZ-GA25VA			MSZ-GA35VA	
Function			Cooling	Heating	Cooling	Heating ①	Heating ②	Cooling	Heating
Power supply			Single phase 230V,50Hz		Single phase 230V,50Hz			Single phase 230V,50Hz	
Capacity	Air flow(Super High/High)	m³ /h	600/480	630/504	600/480	630/504	486/408	600/480	630/504
	Air flow(Med./Low)	m³ /h	366/234	384/258	366/234	384/258	336/258	366/246	384/270
Electrical data	Power outlet	A	10		10			10	
	Running current ✻1	A	0.25		0.25			0.25	
	Power input ✻1	W	33		33			33	
	Power factor ✻1	%	57		57			57	
	Fan motor current ✻1	A	0.25		0.25			0.25	
Fan motor	Model		RC0J30-CC		RC0J30-CC			RC0J30-CC	
	Dimensions W×H×D	mm	780×298×210		780×298×210			780×298×210	
	Weight	kg	9		9			9	
Special remarks	Air direction		4		4			4	
	Sound level(Super High)	dB(A)	43		43			43	
	Sound level(High/Med./Low)	dB(A)	36/29/21		36/29/21			36/29/22	
	Fan speed(Super High/High)	rpm	1,200/1,000	1,250/1,040	1,200/1,000	1,250/1,040	1,010/880	1,200/1,000	1,250/1,040
	Fan speed(Med./Low)	rpm	800/580	830/620	800/580	830/620	750/620	800/600	830/640
	Fan speed regulator		4		4			4	
	Remote controller model		KM05B		KM05B			KM05B	

① : E1 , E2 (serial number : ~ 6024700)
② : E2 (serial number : 6024701 ~) , E3

When outdoor unit is MXZ-8A140VA1.

Indoor model			MSZ-GA22VA		MSZ-GA25VA		MSZ-GA35VA	
Function			Cooling	Heating	Cooling	Heating	Cooling	Heating
Capacity	Air flow(Super High)	m³ /h	528	540	528	540	582	618
	Air flow(High/Med./Low)	m³ /h	432/336/234	420/366/258	432/336/234	420/366/258	468/354/246	504/390/270
Special remarks	Sound level(Super High)	dB(A)	43		43		43	
	Sound level(High/Med./Low)	dB(A)	36/29/21		36/29/21		36/29/22	
	Fan speed(Super High)	rpm	1,100		1,100		1,200	1,230
	Fan speed(High/Med./Low)	rpm	930/760/580	900/800/620	930/760/580	900/800/620	1,000/800/600	1,040/850/640

NOTE : Test conditions are based on ISO 5151
Cooling : Indoor Dry-bulb temperature 27℃ Wet-bulb temperature 19℃
Outdoor Dry-bulb temperature 35℃ Wet-bulb temperature 24℃
Heating : Indoor Dry-bulb temperature 20℃ Wet-bulb temperature 15℃
Outdoor Dry-bulb temperature 7℃ Wet-bulb temperature 6℃
Refrigerant piping length (one way): 5m
✻1 Measured under rated operating frequency.

Specifications and rating conditions of main electric parts

INDOOR UNIT

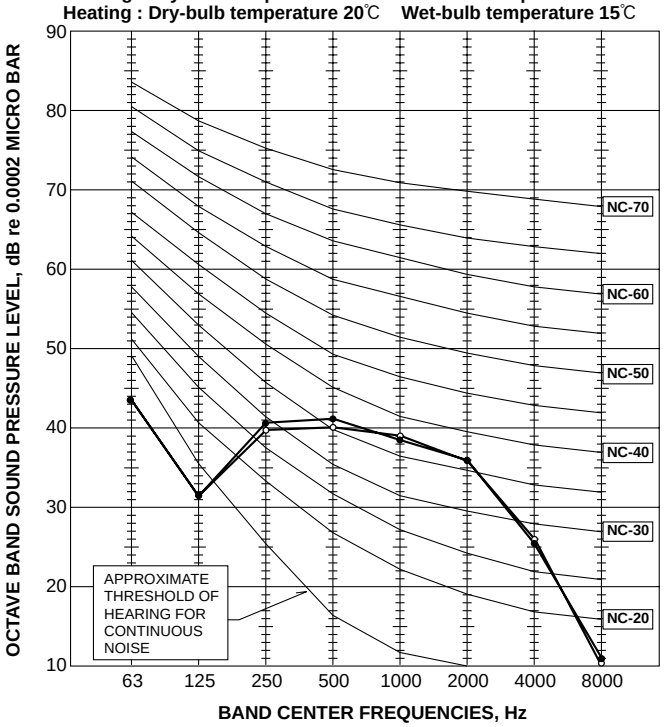
Item		
Fuse	(F11)	T3.15AL 250V
Horizontal vane motor	(MV)	MSBPC20M16 12V DC 250Ω (at 25˚C)
Varistor	(NR11)	ERZV14D471
Terminal block	(TB)	3P

4 NOISE CRITERIA CURVES

MSZ-GA22VA
MSZ-GA25VA

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

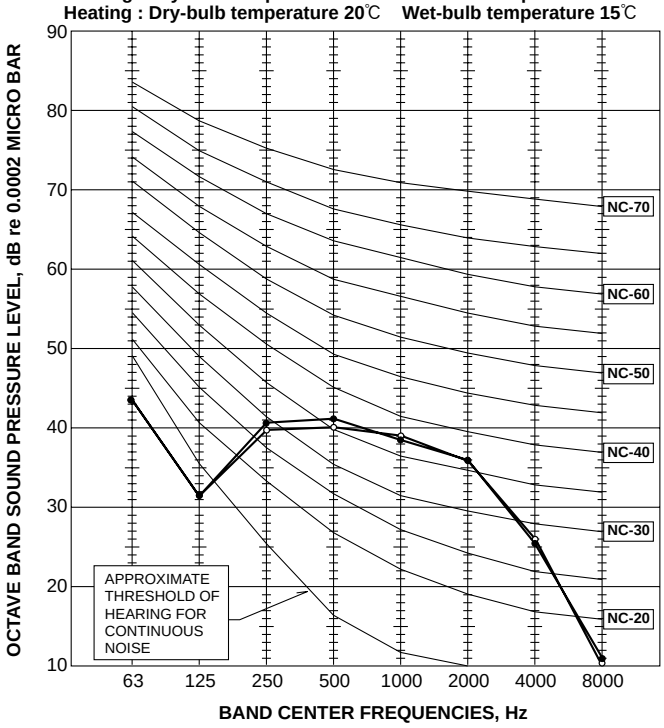
Test conditions
Cooling : Dry-bulb temperature 27℃ Wet-bulb temperature 19℃
Heating : Dry-bulb temperature 20℃ Wet-bulb temperature 15℃

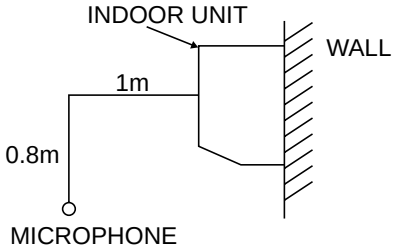


MSZ-GA35VA

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

Test conditions
Cooling : Dry-bulb temperature 27℃ Wet-bulb temperature 19℃
Heating : Dry-bulb temperature 20℃ Wet-bulb temperature 15℃

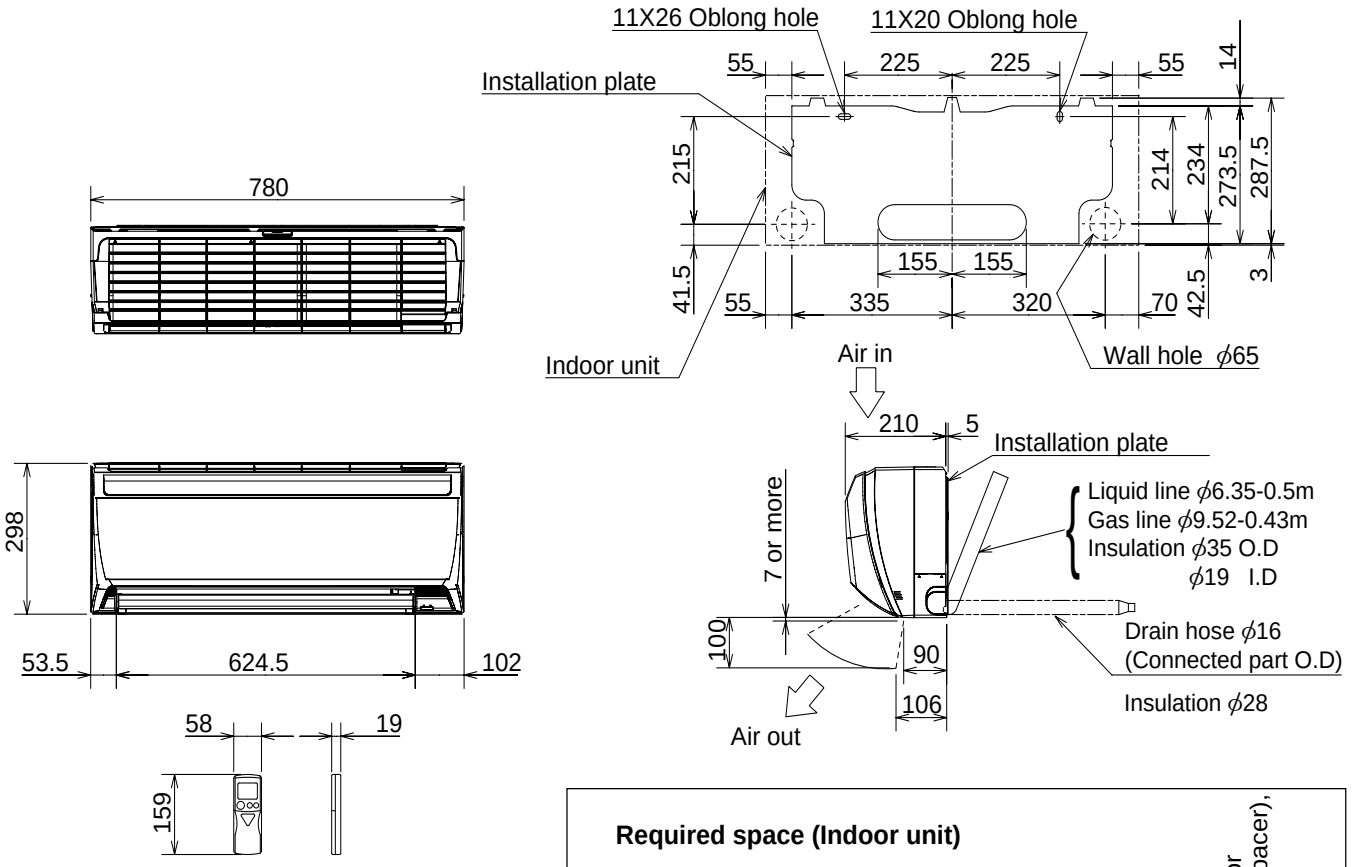




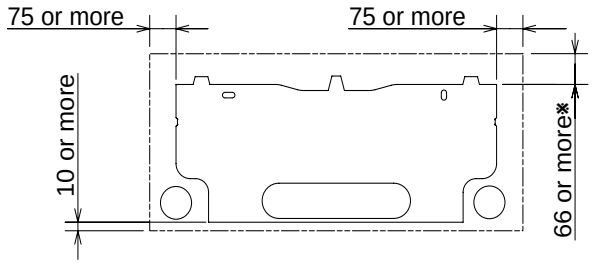
5 OUTLINES AND DIMENSIONS

MSZ-GA22VA
MSZ-GA25VA
MSZ-GA35VA

Unit : mm



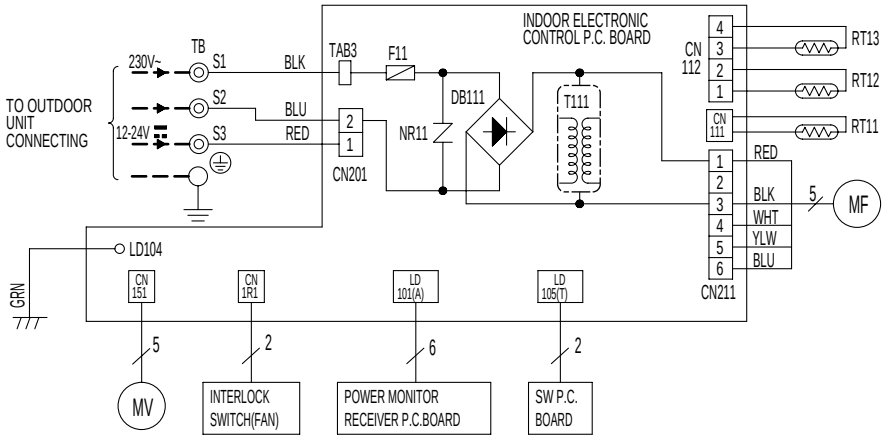
Required space (Indoor unit)



※In case of left, left back, or left under piping (using spacer), 115 or more

6 WIRING DIAGRAM

MSZ-GA22VA
MSZ-GA25VA
MSZ-GA35VA



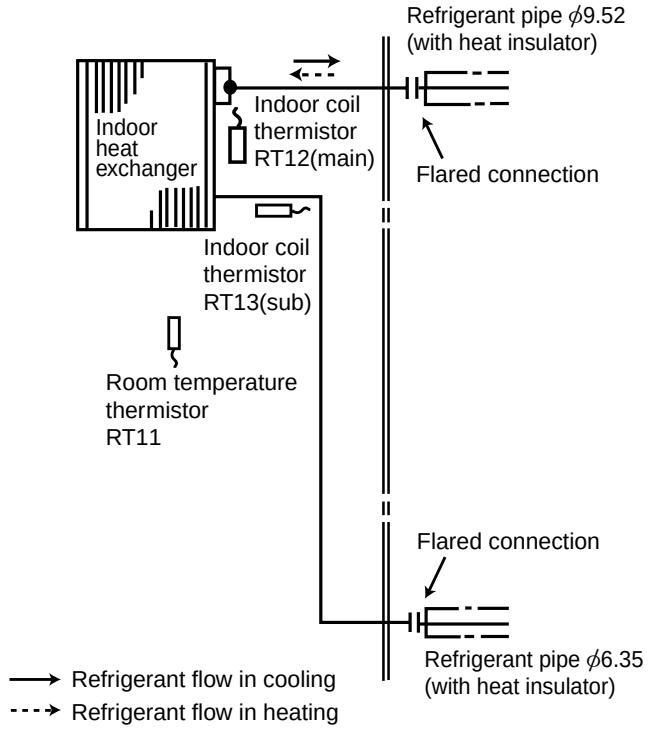
SYMBOL	NAME	SYMBOL	NAME
DB111	DIODE STACK	RT11	ROOM TEMPERATURE THERMISTOR
F11	FUSE (T3.15AL250V)	RT12	INDOOR COIL THERMISTOR (MAIN)
MF	INDOOR FAN MOTOR	RT13	INDOOR COIL THERMISTOR (SUB)
MV	VANE MOTOR (HORIZONTAL)	T111	TRANSFORMER
NR11	VARISTOR	TB	TERMINAL BLOCK

NOTE:1. About the outdoor side electric wiring refer to the outdoor unit electric wiring diagram for servicing.
2. Use copper conductors only. (For field wiring)
3. Symbols below indicate.
◎: Terminal block, □□□□: Connector

7 REFRIGERANT SYSTEM DIAGRAM

MSZ-GA22VA
MSZ-GA25VA
MSZ-GA35VA

Unit : mm



8 SERVICE FUNCTIONS

MSZ-GA22VA
MSZ-GA25VA
MSZ-GA35VA

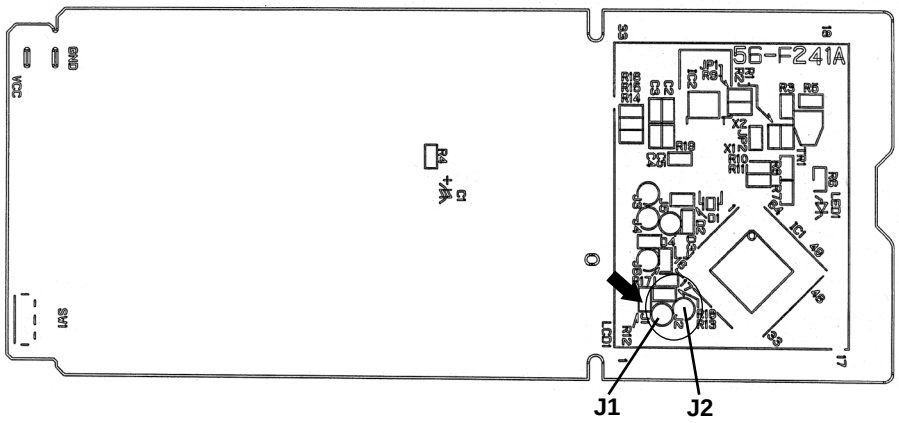
8-1. TIMER SHORT MODE

For service, set time can be shortened by short circuit of JPG and JPS the electronic control P.C. board.
The time will be shortened as follows. (Refer to 9-7.)
Set time : 1-minute ➔ 1-second
Set time : 3-minute ➔ 3-second (It takes 3 minutes for the compressor to start operation. However, the starting time is shortened by short circuit of JPG and JPS.)

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 twice 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. The “AUTO RESTART FUNCTION” sets to work the moment power has restored after power failure. Then, the unit will restart automatically.

Operation

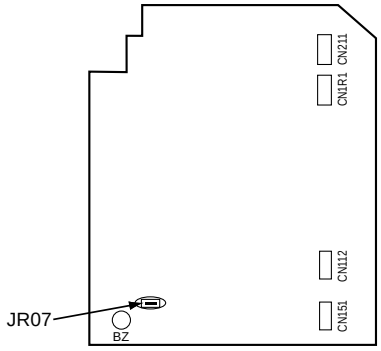
① If the main power has been cut, the operation settings remain.

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 release “AUTO RESTART FUNCTION”

①Turn OFF the main power for the unit.

②Solder the Jumper wire to JR07 on the indoor electronic control P.C. board. (Refer to 9-7.)



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.

9 TROUBLESHOOTING

MSZ-GA22VA MSZ-GA25VA MSZ-GA35VA

9-1. Cautions on troubleshooting

1. Before troubleshooting, check the following

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

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 electronic control P.C. board.
3) When removing the electronic control 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.

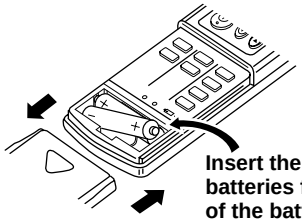
3. Troubleshooting procedure

1) First, 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 abnormality indication is flashing on and off before starting service work.
2) Before servicing, check that the connector and terminal are connected properly.
3) If the electronic control P.C. board is supposed to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
4) When troubleshooting, refer to 9-2., 9-3. and 9-4.

4. How to replace batteries

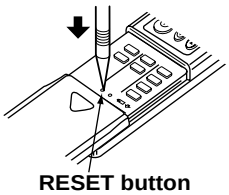
Weak batteries may cause the remote controller malfunction.
In this case, replace the batteries to operate the remote controller normally.

① Remove the front lid and insert batteries. Then reattach the front lid.



Insert the negative pole of the batteries first. Check if the polarity of the batteries is correct.

② Press RESET button with tip end of ball point pen or the like, and then use the remote controller.



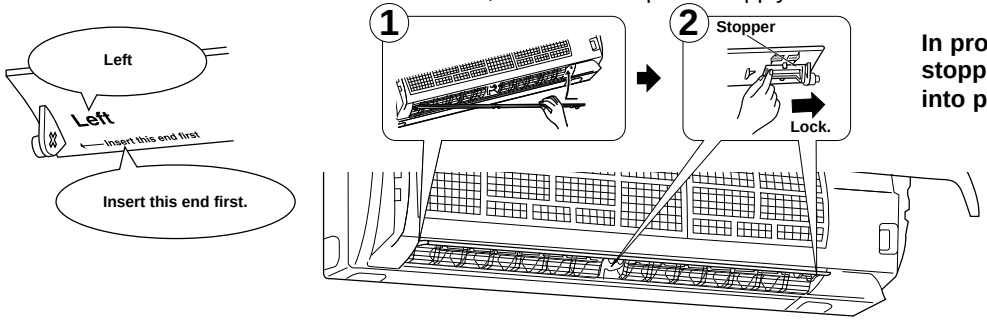
RESET button

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.

5. How to install the horizontal vane

If horizontal vane is not installed correctly, all of the operation indicator lamps will blink.
In this case, install the horizontal vane correctly by following the procedures ① to ②.

NOTE: Before installation of the horizontal vane, turn OFF the power supply.

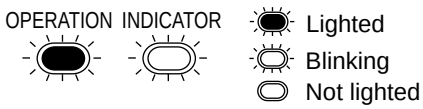


In procedure ② lock the stoppers until they click into place.

INFORMATION FOR MULTI SYSTEM AIR CONDITIONER
OUTDOOR UNIT : MXZ series

Multi system air conditioner can connect two or more indoor units with one outdoor unit.

- Unit won't operate in case the total capacity of indoor units exceeds the capacity of outdoor units. Do not connect indoor units beyond the outdoor unit capacity.
  Operation indicator lamp flashes as shown in the figure below.
- When you try to operate two or more indoor units with one outdoor unit simultaneously, one for the cooling and the other for heating, the operation mode of the indoor unit that operates earlier is selected. The other indoor units cannot operate, indicating as shown in the figure below. In this case, please set all the indoor units to the same operation mode.



- When indoor units starts the operation while the defrosting of outdoor unit is being done, it takes a few minutes (max. 10 minutes) to blow out the warm air.
- In the heating operation, though indoor unit that does not operate may get warm or the sound of refrigerant flowing may be heard, they are not malfunction. The reason is that the refrigerant continuously flows into it.

9-2. Failure mode recall function

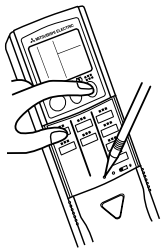
Outline of the function

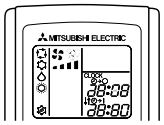
This air conditioner can memorize the abnormal condition which has occurred once.

Even though LED indication listed on the troubleshooting check table (9-4.) disappears, the memorized failure details can be recalled.

This mode is very useful when the unit needs to be repaired for the abnormality which doesn't recur.

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





※1. Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.

Operational procedure

The cause of abnormality cannot be found because the abnormality doesn't recur.

Setting up the failure mode recall function

Turn ON the power supply.
<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.
And release the other two buttons after all LCD except the set temperature in operation display section of the remote controller is displayed after 3 seconds.

Press OPERATE/STOP(ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit. ※1

Does the left lamp of OPERATION INDICATOR lamp on the indoor unit blink at the interval of 0.5 seconds?
Blinks: Either indoor or outdoor unit is abnormal.
Beep is emitted at the same timing as the blinking of the left lamp of OPERATION INDICATOR lamp. ※2

No (OFF)

Indoor unit is normal.
But the outdoor unit might be abnormal because there are some abnormalities that can't be recalled with this way.
Confirm if outdoor unit is abnormal according to the detailed outdoor unit failure mode recall function.

Yes (Blinks)

Judgment of indoor/outdoor abnormality

Before blinking, does the left lamp of OPERATION INDICATOR lamp stay ON for 3 seconds?
Stays ON for 3 seconds (without beep):
The outdoor unit is abnormal.

Yes

No

The indoor unit is abnormal.
Check the blinking pattern, and confirm the abnormal point with the indoor unit failure mode table(Refer to 9-2.2.).
Make sure to check at least two consecutive blinking cycles. ※2

The outdoor unit is abnormal.
Check the blinking pattern, and confirm the abnormal point with the outdoor unit failure mode table (Refer to outdoor unit service manual.)
Make sure to check at least two consecutive blinking cycles. ※3

Releasing the failure mode recall function

Release the failure mode recall function by the following procedures.
Turn OFF the power supply and turn it ON again.
Press RESET button of the remote controller.

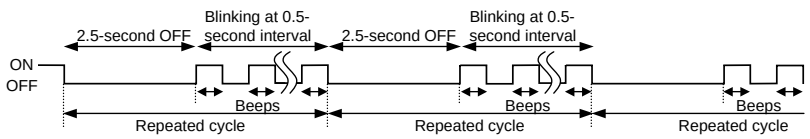
Repair the defective parts.

Deleting the memorized abnormal condition

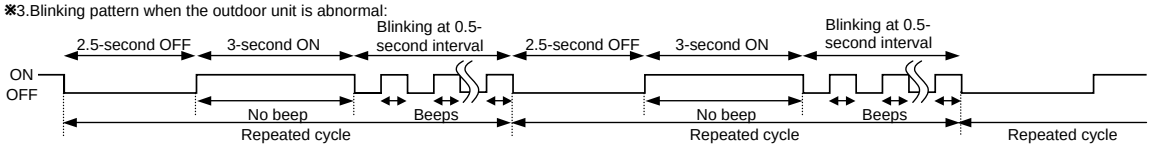
①After repairing the unit, recall the failure mode again according to "Setting up the failure mode recall function" mentioned above.
②Press OPERATE/STOP(ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.
③Press EMERGENCY OPERATION switch so that the memorized abnormal condition is deleted.
④Release the failure mode recall function according to "Releasing the failure mode recall function" mentioned above.

Note1.Make sure to release the failure mode recall function once it's 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:

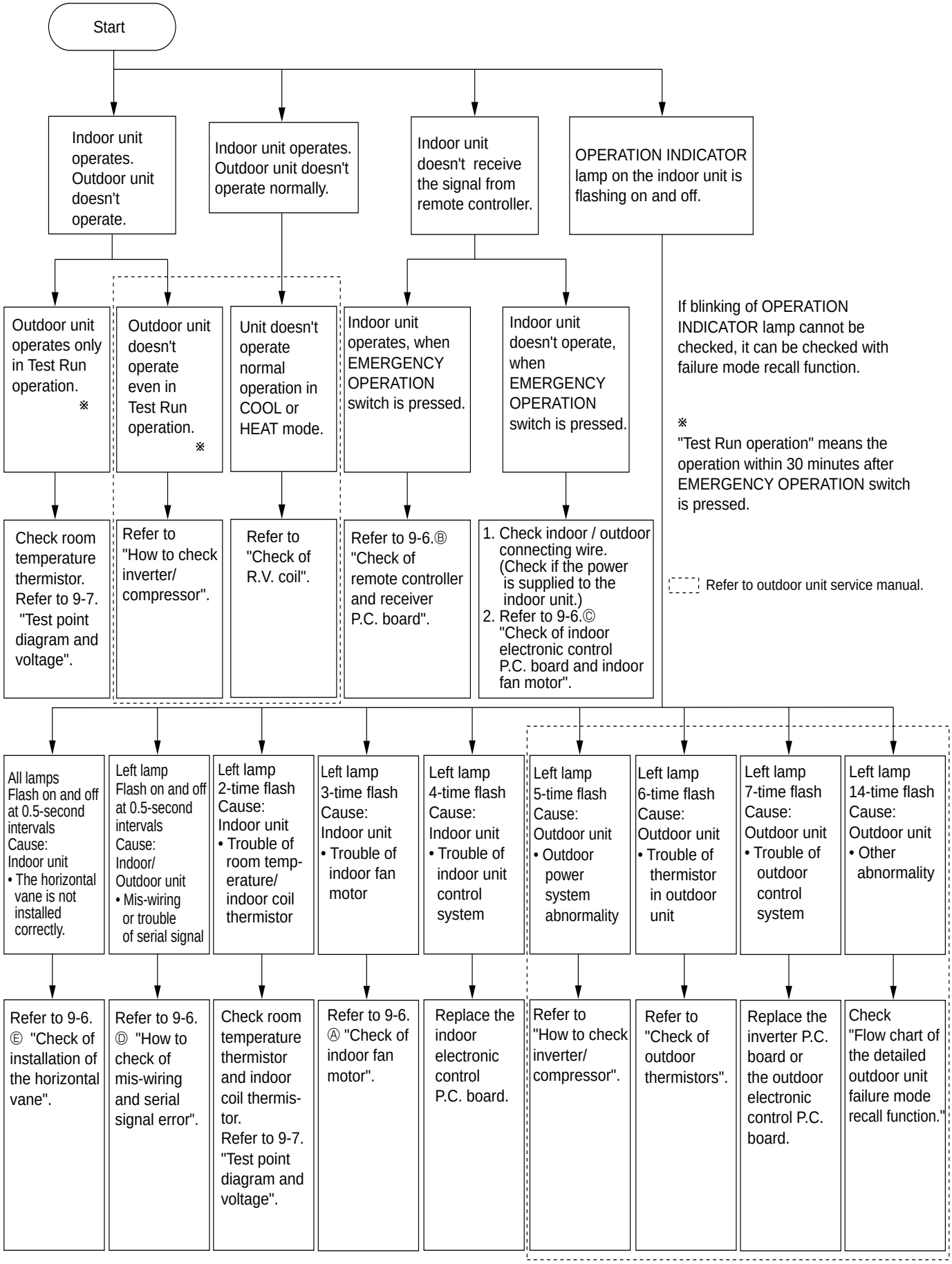


2. Indoor unit failure mode table

Left lamp of OPERATION INDICATOR lamp	Abnormal point (Failure mode)	Condition	Correspondence
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 (Refer to 9-7.).
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 (Refer to 9-7.).
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 9-6.Ⓓ "How to check mis-wiring and serial signal error".
11-time flash 2.5-second OFF	Indoor fan motor	The rotational frequency feedback signal is not emit during the 12-second the indoor fan operation.	Refer to 9-6.Ⓐ "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.

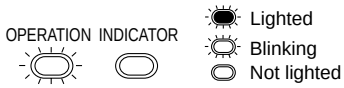
NOTE : Blinking patterns of this mode differ from the ones of Troubleshooting check table(9-4.).

9-3. Instruction of troubleshooting



9-4. Troubleshooting check table

Before taking measures, make sure that the symptom reappears for accurate troubleshooting.
When the indoor unit has started operation and the following detection method has detected an abnormality (the first detection after the power ON), the indoor electronic control P.C. board turns OFF the indoor fan motor with OPERATION INDICATOR lamp flashing.



· Flashing of OPERATION INDICATOR lamp (left-hand side lamp) indicates abnormalities.

No.	Abnormal point	Operation indicator lamp	Symptom	Condition	Correspondence
1	Mis-Wiring or serial signal	Left 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 a maximum of 6 minutes.	• Refer to 9-6.Ⓓ "How to check mis-wiring and serial signal error".
2	Outdoor control system	Left 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.
3	Indoor coil thermistor Room tempera-ture thermistor	Left lamp flashes. 2-time flash 2.5-second OFF	Indoor unit and outdoor unit do not operate.	The indoor coil or the room temperature thermistor is short or open circuit.	• Refer to 9-7.the characteristics of indoor coil thermistor, and the room temperature thermistor.
4	Indoor fan motor	Left lamp flashes. 3-time flash 2.5-second OFF	Indoor unit and outdoor unit do not operate.	The rotational frequency feedback signal is not emitted during the indoor fan operation.	• Refer to 9-6.Ⓐ "Check of indoor fan motor".
5	Indoor control system	Left lamp flashes. 4-time flash 2.5-second OFF	Indoor unit and outdoor unit do not operate.	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.
6	Outdoor power system	Left lamp flashes. 5-time flash 2.5-second OFF	Indoor unit and outdoor unit do not operate.	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.
7	Outdoor thermistors	Left lamp flashes. 6-time flash 2.5-second OFF	Indoor unit and outdoor unit do not operate.	The outdoor thermistors short or open circuit during the compressor operation.	• Refer to "Check of outdoor thermistor". Refer to outdoor unit service manual.
8	Outdoor control system	Left lamp flashes. 7-time flash 2.5-second OFF	Indoor unit and outdoor unit do 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.	• Replace the inverter P.C. board or the outdoor electronic control P.C. board. Refer to outdoor unit service manual.
9	Other abnormality	Left lamp flashes. 14-time flash 2.5-second OFF	Indoor unit and outdoor unit do not operate.	An abnormality other than above mentioned is detected.	• Confirm the abnormality in detail using the failure mode recall function for outdoor unit.

OPERATION INDICATOR

Lighted
Blinking
Not lighted

· Flashing of OPERATION INDICATOR lamp (all lamps) indicates abnormality.

No.	Abnormal point	Operation indicator lamp	Symptom	Condition	Correspondence
1	Attachment of the horizontal vane	All lamps flash at the same time. 0.5-second ON 0.5-second OFF	Indoor unit and outdoor unit do not operate.	The electricity is not conducted to the interlock switch (Fan) of the horizontal vane.	• Refer to 9-6.Ⓔ "Check of installation of the horizontal vane".

OPERATION INDICATOR

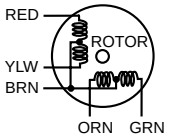
Lighted
Blinking
Not lighted

· Flashing of OPERATION INDICATOR lamp (right-hand side lamp) indicates abnormality.
· OPERATION INDICATOR lamp (left-hand side lamp) is lighted.

No.	Abnormal point	Operation indicator lamp	Symptom	Condition	Correspondence
1	**MXZ type** Operation mode setting	Right lamp flash 2.5-second OFF	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.	• Unify the operation mode. Refer to outdoor unit service manual.

9-5. Trouble criterion of main parts

MSZ-GA22VA MSZ-GA25VA MSZ-GA35VA

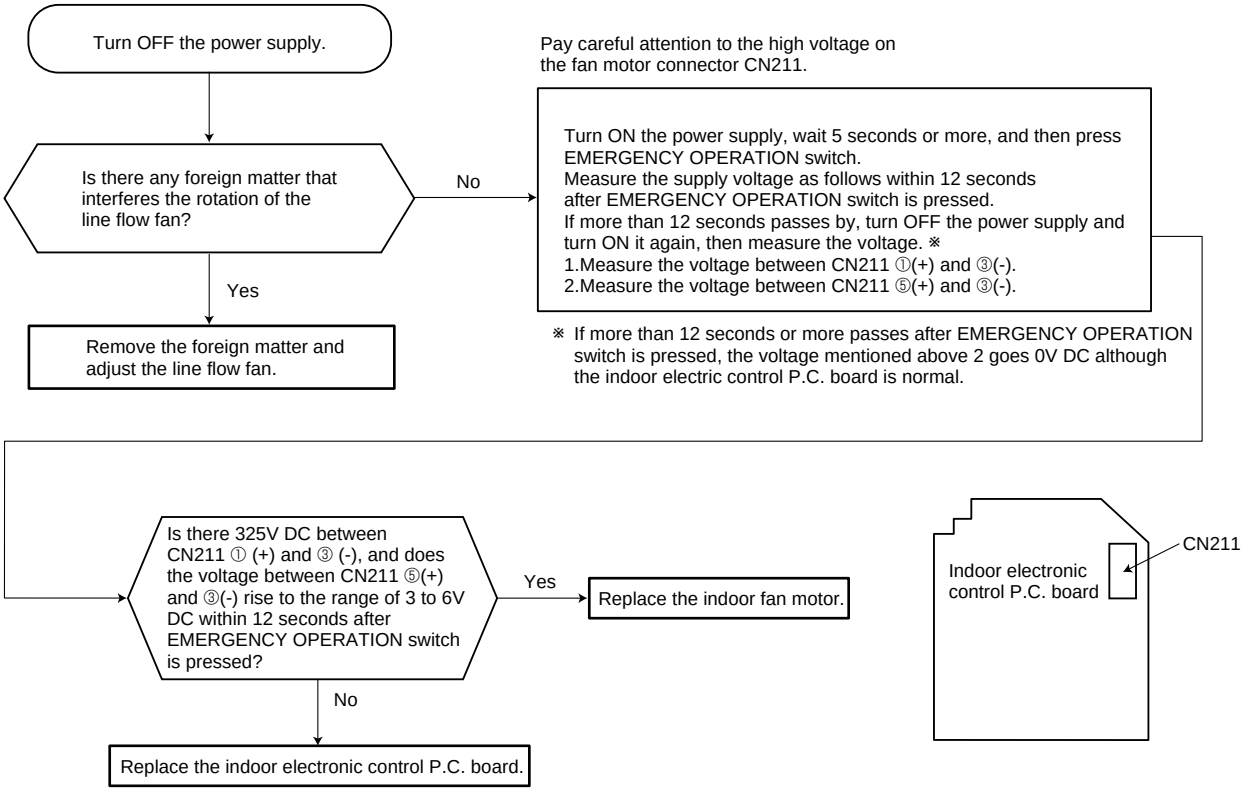
Part name	Check method and criterion	Figure
Room temperature thermistor(RT11) Indoor coil thermistor (RT12(MAIN), RT13(SUB))	Measure the resistance with a tester. Refer to 9-7."Test point diagram and voltage", "Indoor electronic control P.C. board", the chart of thermistor.	
Indoor fan motor(MF)	Check 9-6. Ⓐ.	
Horizontal vane motor(MV)	Measure the resistance between the terminals with a tester. (Part temperature 10°C ~ 30°C) Color of the lead wire: Normal BRN-other one: 235 Ω ~ 255 Ω	

9-6. Troubleshooting flow

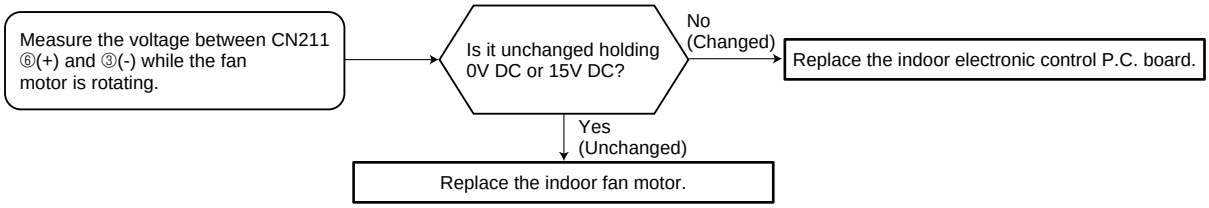
When OPERATION INDICATOR lamp flashes 3-time.
Indoor fan does not operate.

Ⓐ Check of indoor fan motor

The indoor fan motor error has occurred, and the indoor fan doesn't operate.



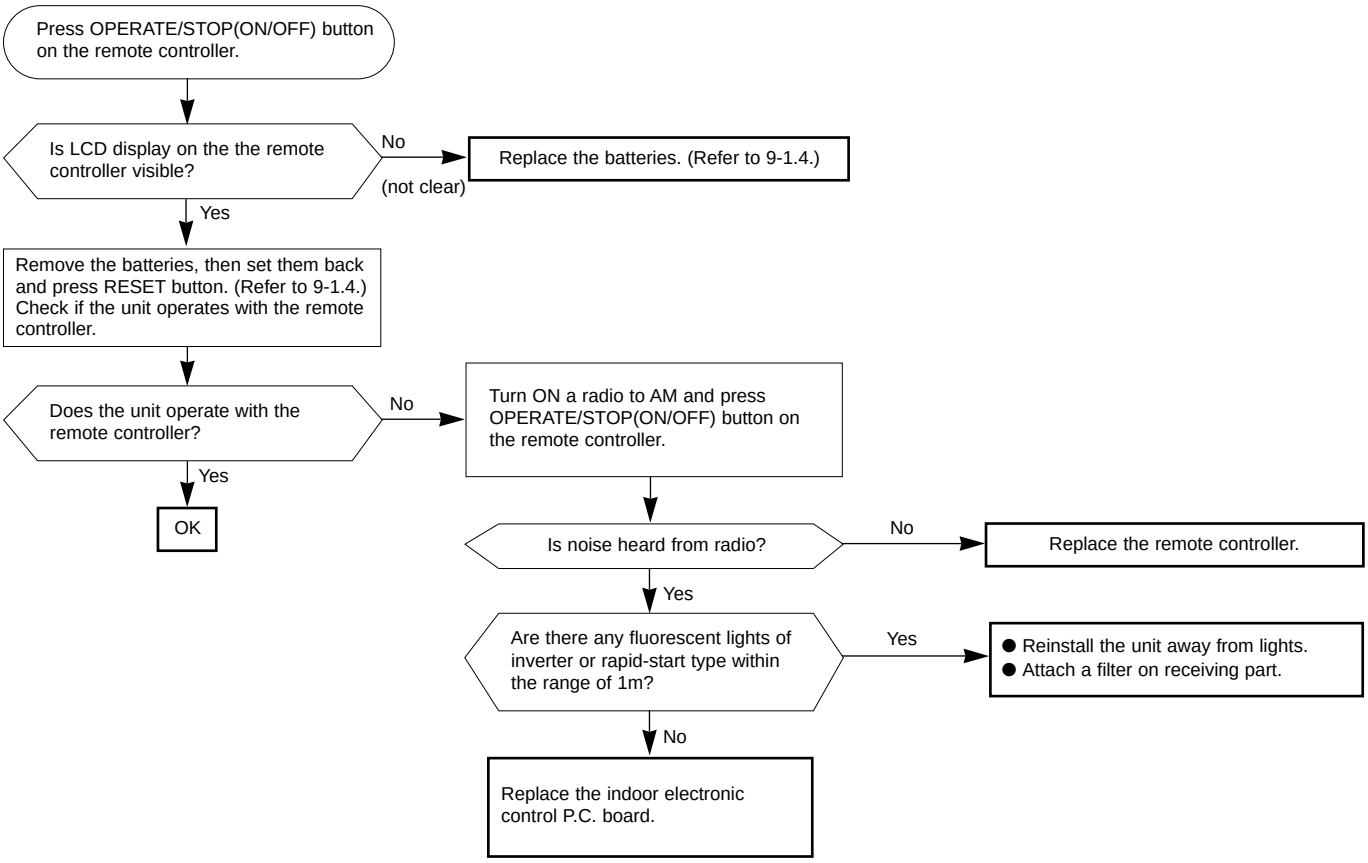
The indoor fan motor error has occurred, and the indoor fan repeats "12-second ON and 30-second OFF" 3 times, and then stops.



Indoor unit operates by pressing EMERGENCY OPERATION switch, but does not operate with the remote controller.

Ⓑ Check of remote controller and receiver P.C. board

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



The unit does not operate with the remote controller.
Also, OPERATION INDICATOR lamp does not light up by pressing EMERGENCY OPERATION switch.

ⓒCheck of indoor electronic control P.C. board and indoor fan motor

Turn OFF the power supply.
Remove indoor fan motor connector CN211 and vane motor connector CN151 from the indoor electronic control P.C. board and turn ON the power supply.

Does the unit operate with the remote controller? Does OPERATION INDICATOR lamp light up by pressing EMERGENCY OPERATION switch?

Yes

Measure the resistance between CN211 ③ and ④ of the indoor fan motor connector.

Short/open circuit:
Replace the indoor fan motor.

Measure the resistance of the horizontal vane motor coil.
Refer to 9-5.

Short/open circuit:
Replace the horizontal vane motor and the indoor electronic control P.C. board.

No

Turn OFF the power supply.
Check both “parts side” and “pattern side” of the indoor electronic control P.C. board visually.

Be sure to check both the fuse and the varistor in any case.

Are the varistor(NR11) burnt and the fuse(F11) blown?

No

Yes

Replace the varistor(NR11) and fuse(F11).

Is the fuse(F11) blown only?

No

Yes

Measure the resistance between ①(+) and ③(-) of the indoor fan motor connector.
※1,※2

※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.

Is the resistance 1MΩ or more?

No

Replace the fuse (F11) and the indoor fan motor.

Yes

Replace the fuse (F11).

Measure the resistance of cement resistor R111 on the indoor electronic control P.C. board.

Is the resistance approx. 4Ω?

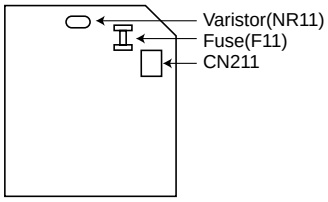
No

Replace the indoor electronic control P.C. board and the indoor fan motor.

Yes

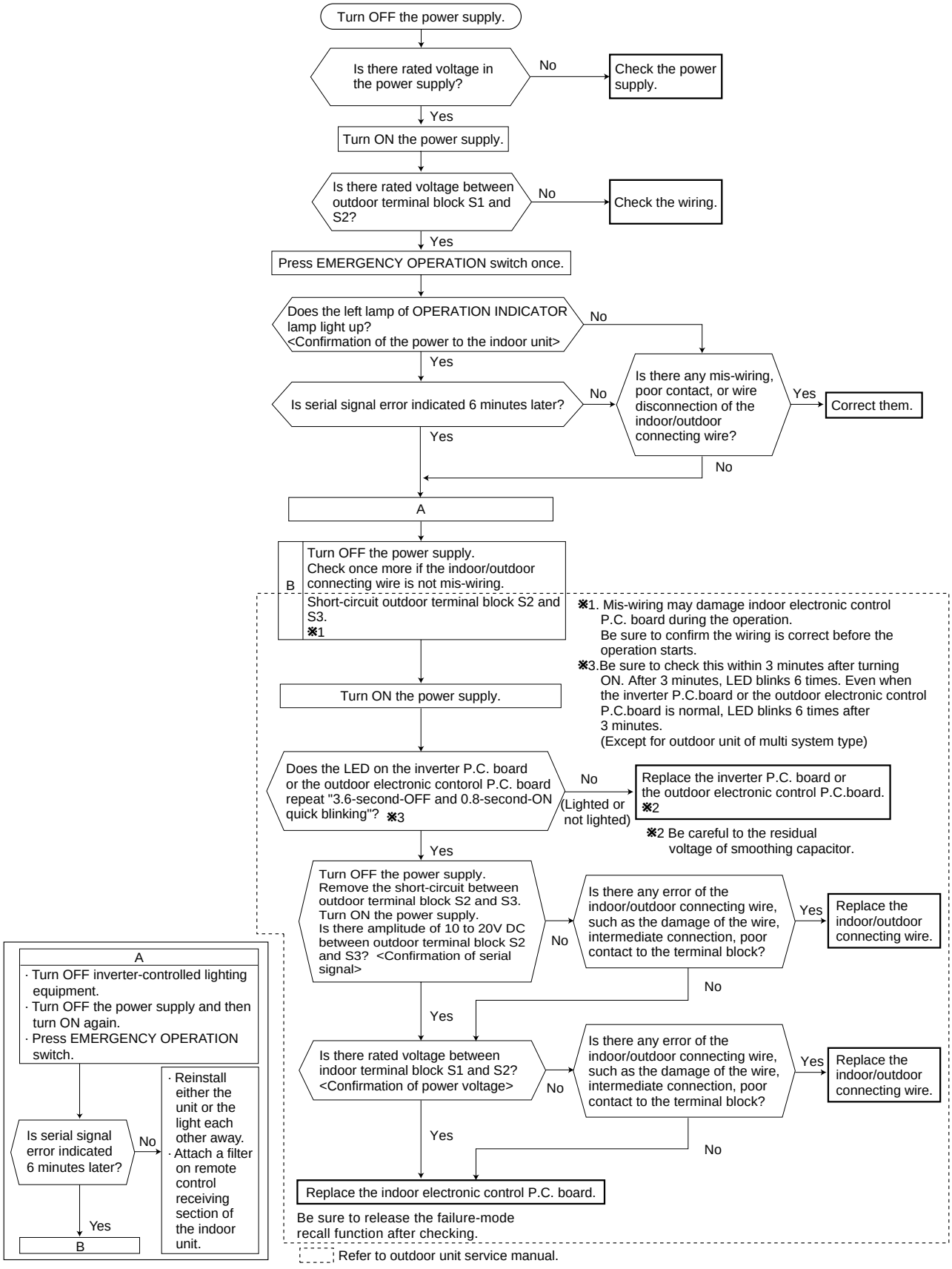
Replace the indoor electronic control P.C. board.

Indoor electronic control P.C.Board



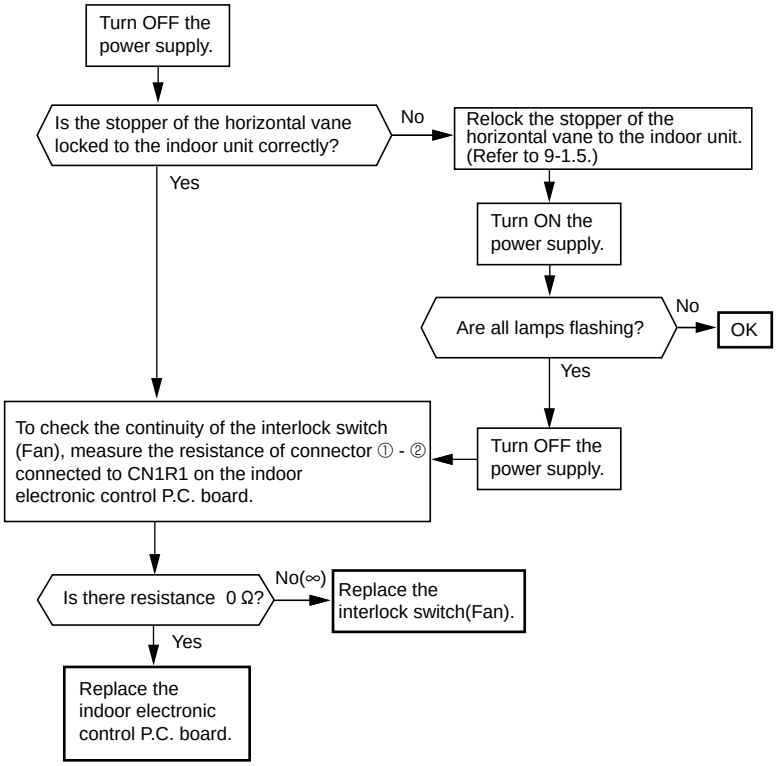
- **When unit cannot operate neither by the remote controller nor by EMERGENCY OPERATION switch. Indoor unit does not operate.**
- **When OPERATION INDICATOR lamp flashes ON and OFF every 0.5-second. Outdoor unit does not operate.**

Ⓓ How to check mis-wiring and serial signal error

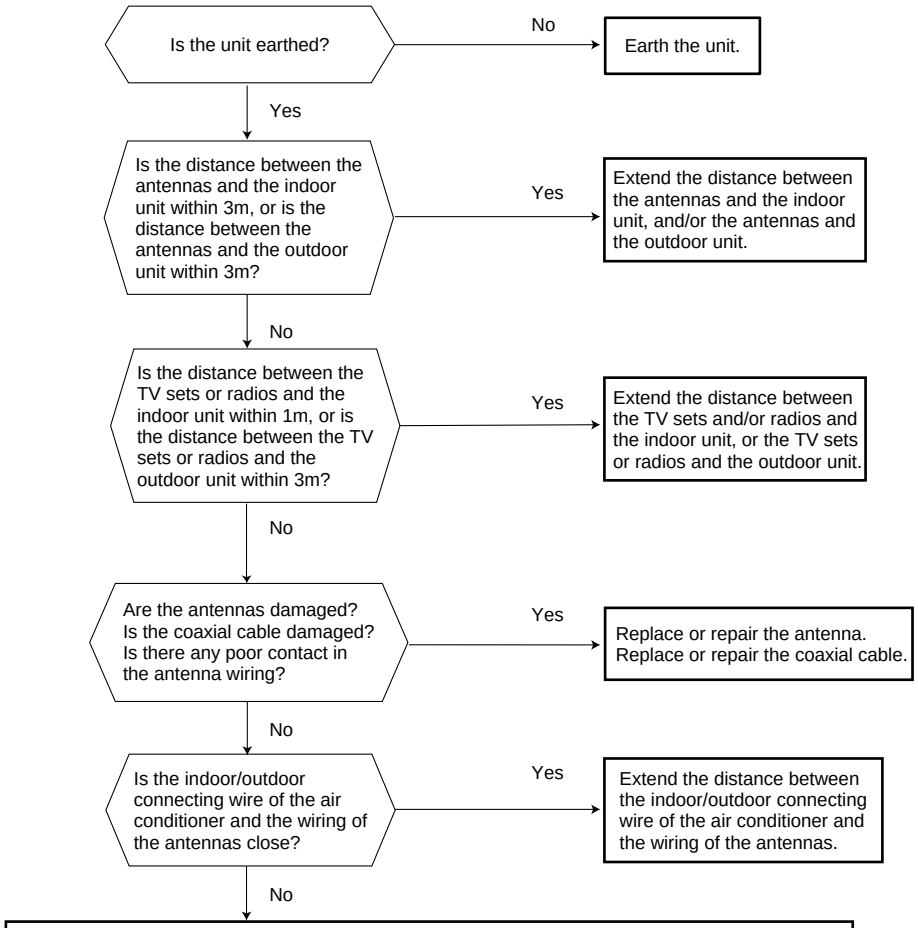


When all lamps flash ON and OFF every 0.5-second.
Indoor unit and outdoor unit do not operate.

Ⓔ Check of installation of the horizontal vane



Ⓕ 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 followings before asking for service.

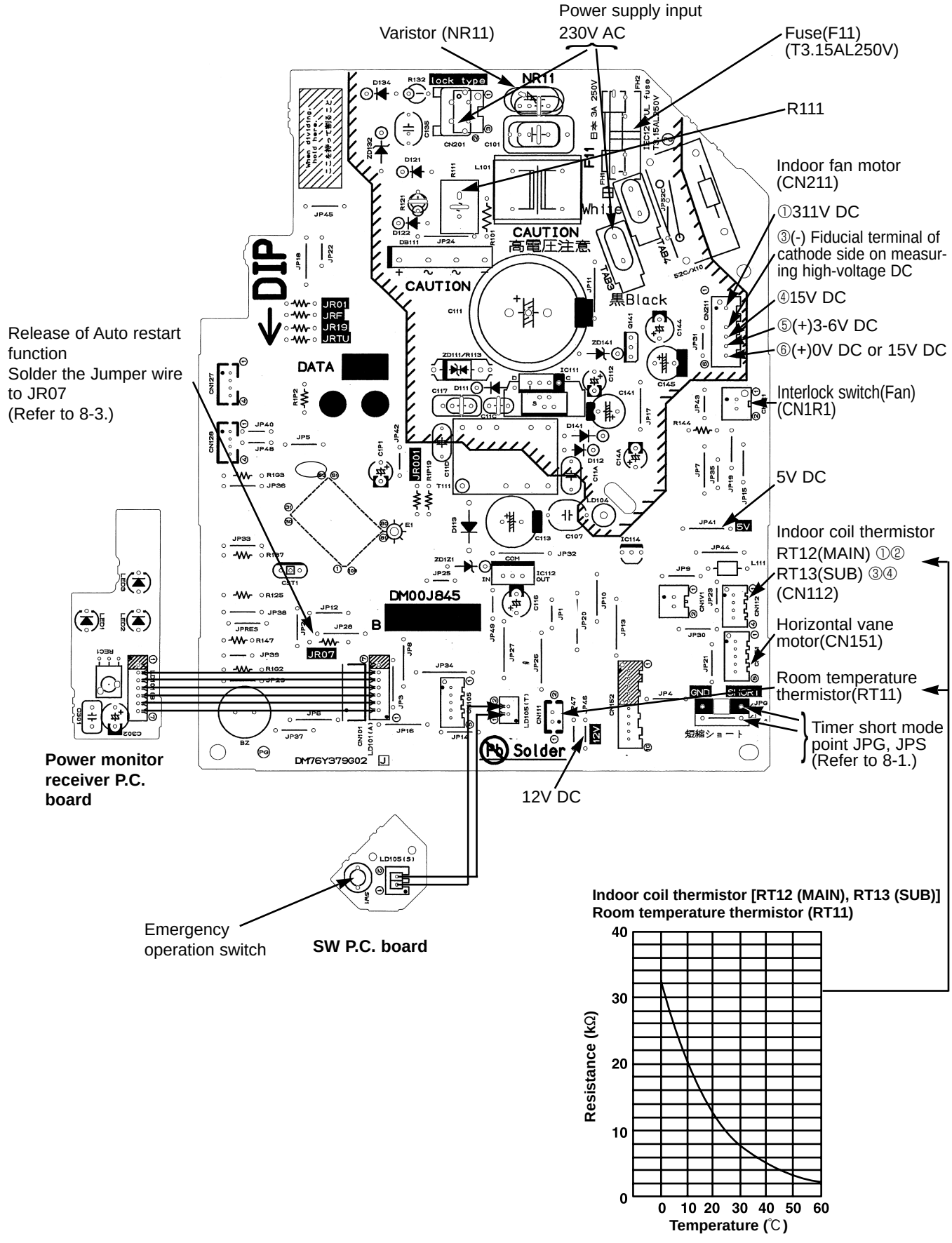
1. Devices affected by the electromagnetic noise
   TV sets, radios (FM/AM broadcast, shortwave)
2. Channel, frequency, broadcast station affected by the electromagnetic noise
3. Channel, frequency, broadcast station unaffected by the electromagnetic noise
4. Layout of ;
   indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, grounding 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.

After checking the above, consult the service representative.

9-7. Test point diagram and voltage

MSZ-GA22VA MSZ-GA25VA MSZ-GA35VA

Indoor electronic control P.C. board



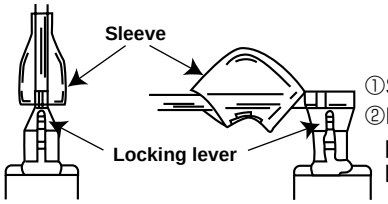
Indoor coil thermistor [RT12 (MAIN), RT13 (SUB)]
Room temperature thermistor (RT11)

10 DISASSEMBLY INSTRUCTIONS

<"Terminal with locking mechanism" Detaching points>

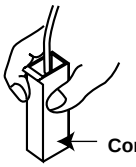
The terminal which has the locking mechanism can be detached as shown below.
There are two types (Refer to (1) and (2)) of the terminal with locking mechanism.
The terminal without locking mechanism can be detached by pulling it out.
Check the shape of the terminal before detaching.

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



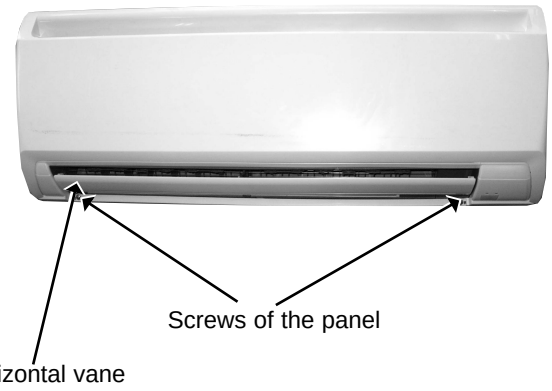
①Slide the sleeve.
②Pull the terminal while pushing the locking lever.

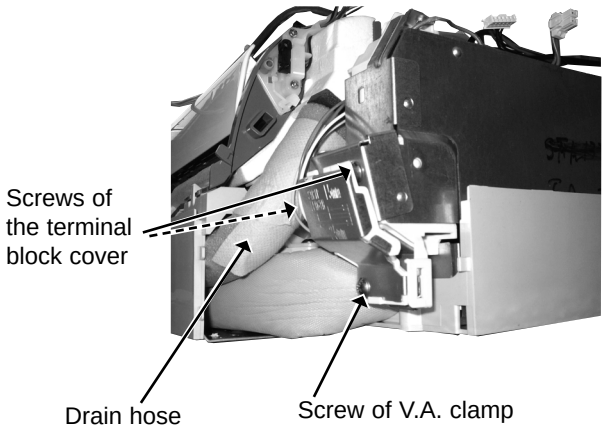
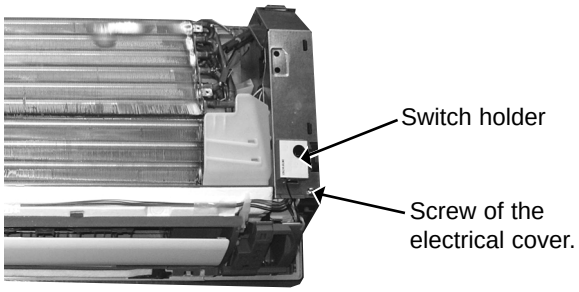
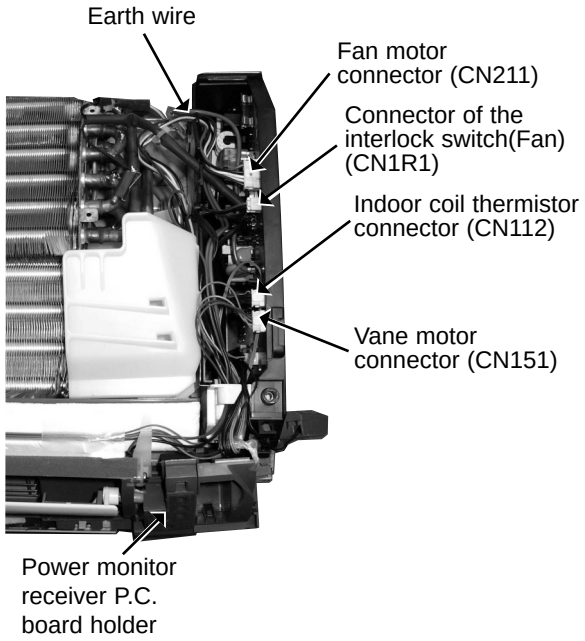
(2) The terminal with this connector has the locking mechanism.

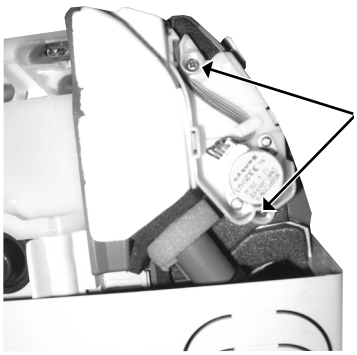
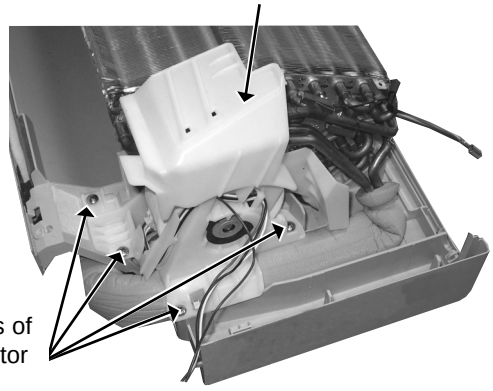
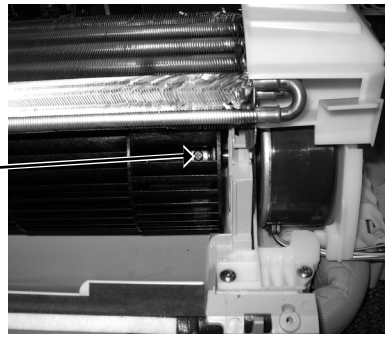
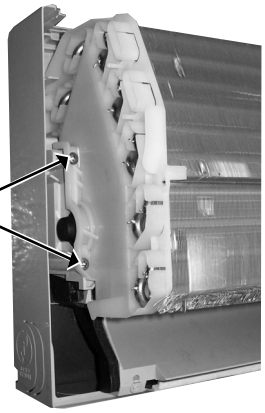


①Hold the sleeve, and pull out the terminal slowly.

MSZ-GA22VA MSZ-GA25VA MSZ-GA35VA
INDOOR UNIT

OPERATING PROCEDURE	PHOTOS
1. Removing the panel (1) Remove the horizontal vane. (2) Remove the screw caps of the panel. Remove the screws. (See Photo 1.) (3) Hold the lower part of both ends on the panel and pull it slightly toward you, and then remove the panel by pushing it upward.	**Photo 1** 

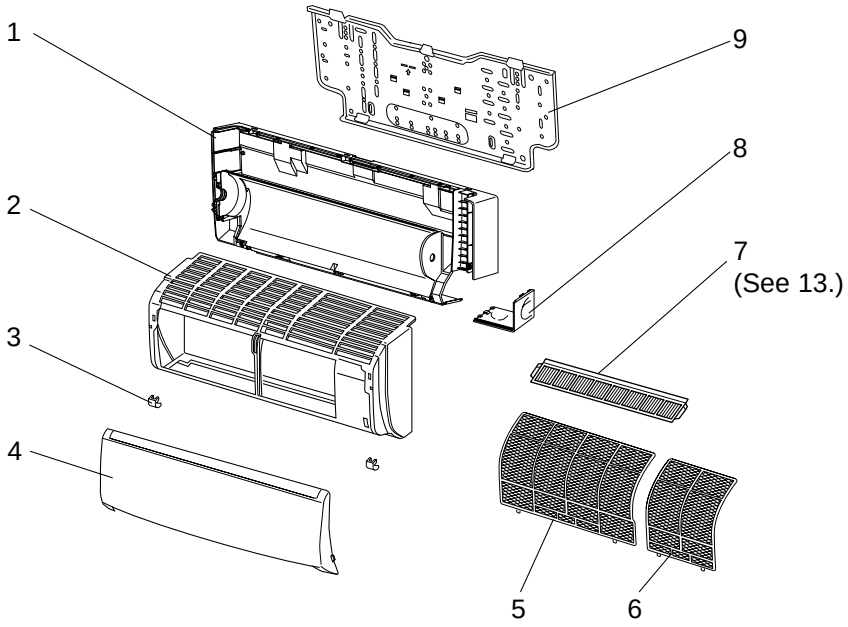
OPERATING PROCEDURE	PHOTOS
2. Removing the electronic control P.C. board, the power monitor receiver P.C. board, SW P.C. board and the terminal block (1) Remove the horizontal vane, the panel (Refer to 1.) and the corner box. (2) Remove the screw of V.A. clamp, and then the indoor/outdoor connecting wire. (See Photo 2.) (3) Remove the switch holder from the electrical cover. (See Photo 3.) (4) Remove the screw of the electrical cover, and then the electrical cover. (See Photo 3.) (5) Remove the earth wire connected to the indoor electronic control P.C. board from the electrical box. (See Photo 4.) (6) Unhook the power monitor receiver P.C. board holder from the catch. (See Photo 4.) (7) Open the rear cover of the power monitor receiver P.C. board holder and pull out the power monitor receiver P.C. board. (8) Open the switch holder and pull out SW P.C. board. (9) Pull the electronic control P.C. board slightly toward you from the electrical box, and disconnect TAB3 and all the connectors on the electronic control P.C. board. (LD101 and LD105 are direct-mounted to the electronic control P.C. board.) (10) Pull out the electronic control P.C. board from the electrical box. (11) Remove the earth wire connected to the heat exchanger from the electrical box. (See Photo 4.) (12) Unhook the catches of the electrical box, and pull out the electrical box. (13) Remove the screws of the terminal block cover, and then the terminal block cover and the terminal block holder. (See Photo 2.) (14) Remove the terminal block by sliding it.	**Photo 2** 
3. Removing the electrical box (1) Remove the horizontal vane, the panel (Refer to 1.) and the corner box. (2) Remove the screw of V.A. clamp, and then the indoor/outdoor connecting wire. (See Photo 2.) (3) Remove the switch holder and the electrical cover. (See Photo 3.) (4) Remove the earth wire connected to the heat exchanger from the electrical box. (See Photo 4.) (5) Disconnect the following connectors on the electronic control P.C. board; the fan motor connector <CN211>, the indoor coil thermistor connector <CN112>, the vane motor connector <CN151>, the connector of the interlock switch (Fan) of the horizontal vane <CN1R1>. (6) Unhook the catches of the electrical box, and pull out the electrical box.	**Photo 3**  **Photo 4** 

OPERATING PROCEDURE	PHOTOS
4. Removing the horizontal vane motor unit (1) Remove the horizontal vane and the panel. (Refer to 1.) (2) Remove the screws of the horizontal vane motor unit, and pull out the horizontal vane motor unit. (See Photo 5.) (3) Disconnect the connector from the horizontal vane motor unit.	**Photo 5** 
5. Removing the indoor fan motor and the line flow fan (1) Remove the horizontal vane, the panel (Refer to 1.) and the corner box. (2) Remove the switch holder and the electrical box. (Refer to 3.) (3) Pull out the drain hose from the nozzle assembly, and remove the nozzle assembly. (4) Remove the screws fixing the motor bed. (See Photo 6.) (5) Loosen the screw fixing the line flow fan. (See Photo 7.) (6) Remove the motor bed together with fan motor and motor band. (7) Release the hooks of the motor band, and remove the motor band then pull out the indoor fan motor. (8) Remove the screws fixing the left side of the heat exchanger. (See Photo 8.) (9) Lift the heat exchanger, and pull out the line flow fan to the lower-left.	**Photo 6**  **Photo 7**  **Photo 8** 

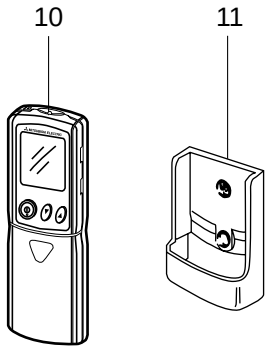
11 PARTS LIST (non-RoHS compliant)

MSZ-GA22VA
MSZ-GA25VA
MSZ-GA35VA

11-1. INDOOR UNIT STRUCTURAL PARTS



11-2. ACCESSORY AND REMOTE CONTROLLER



11-1. INDOOR UNIT STRUCTURAL PARTS

No.	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit						Remarks
				MSZ-GA22VA-		MSZ-GA25VA-		MSZ-GA35VA-		
				E1	E2	E1	E2	E1	E2	
1	E02 897 234	BOX		1		1		1		
	E02 A32 234	BOX			1		1		1	
2	E02 915 000	PANEL ASSEMBLY		1	1	1	1	1	1	Including No.3,4
3	E02 913 067	SCREW CAP		2	2	2	2	2	2	2PCS/SET
4	E02 915 010	FRONT PANEL		1	1	1	1	1	1	
5	E02 915 100	CATECHIN AIR FILTER (LEFT)		1	1	1	1	1	1	
6	E02 916 100	CATECHIN AIR FILTER (RIGHT)		1	1	1	1	1	1	
7	————	AIR CLEANING FILTER		1	1	1	1	1	1	MAC-415FT-E
8	E02 913 975	CORNER BOX (RIGHT)		1		1		1		
	E02 A32 975	CORNER BOX (RIGHT)			1		1		1	
9	E02 913 970	INSTALLATION PLATE		1	1	1	1	1	1	

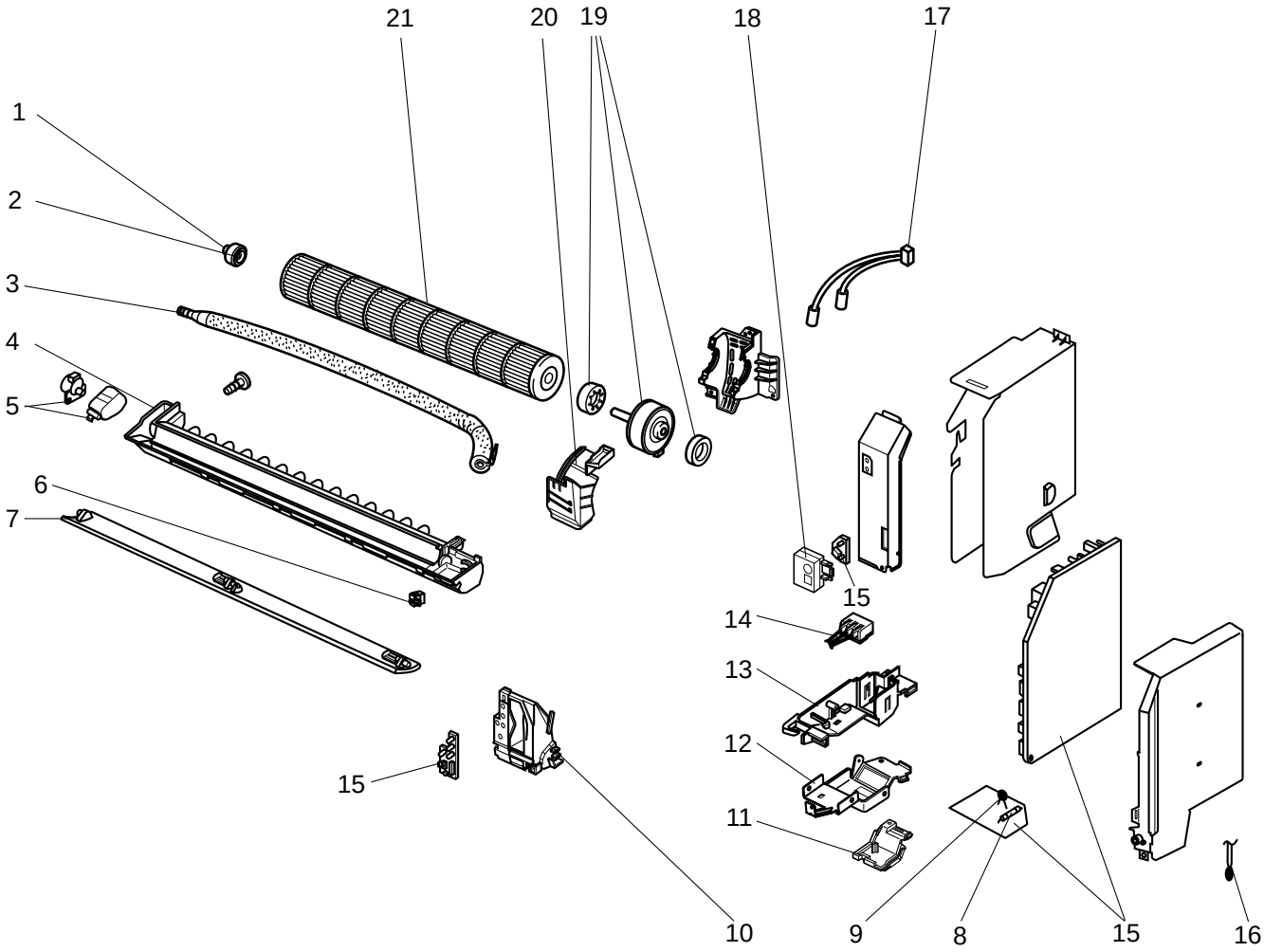
11-2. ACCESSORY AND REMOTE CONTROLLER

10	E02 915 426	REMOTE CONTROLLER		1	1	1	1	1	1	KM05B
11	E02 527 083	REMOTE CONTROLLER HOLDER		1	1	1	1	1	1	

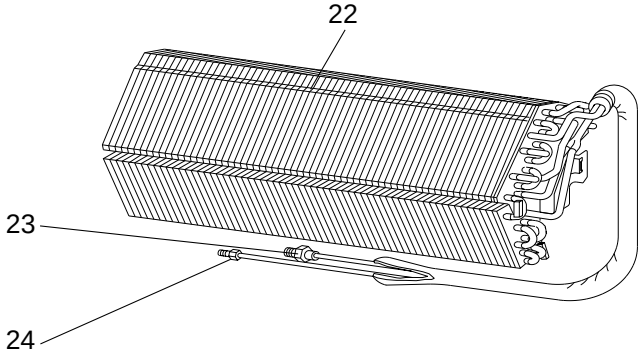
PARTS LIST (non-RoHS compliant)

MSZ-GA22VA
MSZ-GA25VA
MSZ-GA35VA

11-3. INDOOR UNIT ELECTRICAL PARTS AND FUNCTIONAL PARTS



11-4. INDOOR UNIT HEAT EXCHANGER



PARTS LIST (non-RoHS compliant)

11-3. INDOOR UNIT ELECTRICAL PARTS AND FUNCTIONAL PARTS

No.	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit						Remarks
				MSZ-GA22VA-		MSZ-GA25VA-		MSZ-GA35VA-		
				E1	E2	E1	E2	E1	E2	
1	E02 751 509	BEARING MOUNT		1	1	1	1	1	1	
2	E02 001 504	SLEEVE BEARING		1	1	1	1	1	1	
3	E02 897 702	DRAIN HOSE		1	1	1	1	1	1	
4	E02 915 235	NOZZLE ASSEMBLY		1	1	1	1	1	1	
5	E02 897 303	VANE MOTOR UNIT (HORIZONTAL)	MV	1	1	1	1	1	1	UP & DOWN
6	E02 897 316	INTERLOCK SWITCH(FAN)		1	1	1	1	1	1	
7	E02 913 040	HORIZONTAL VANE		1	1	1	1	1	1	
8	E02 127 382	FUSE	F11	1		1		1		T3.15AL250V
	E02 A49 382	FUSE	F11		1		1		1	T3.15AL250V
9	E02 661 385	VARISTOR	NR11	1	1	1	1	1	1	
10	E02 915 095	POWER MONITOR RECEIVER P.C. BOARD HOLDER		1	1	1	1	1	1	
11	E02 897 784	V.A. CLAMP		1	1	1	1	1	1	
12	E02 897 780	TERMINAL BLOCK COVER		1	1	1	1	1	1	
13	E02 897 779	TERMINAL BLOCK HOLDER		1	1	1	1	1	1	
14	E02 913 375	TERMINAL BLOCK	TB	1	1	1	1	1	1	
15	E02 915 452	ELECTRONIC CONTROL P.C. BOARD ※1		1	1					AUTO RESTART
	E02 916 452	ELECTRONIC CONTROL P.C. BOARD ※1				1	1			AUTO RESTART
	E02 917 452	ELECTRONIC CONTROL P.C. BOARD ※1						1	1	AUTO RESTART
16	E02 897 308	ROOM TEMPERATURE THERMISTOR	RT11	1	1	1	1	1	1	
17	E02 913 307	INDOOR COIL THERMISTOR	RT12, RT13	1	1	1	1	1	1	
18	E02 915 782	SWITCH HOLDER		1	1	1	1	1	1	
19	E02 915 300	INDOOR FAN MOTOR ※2	MF	1	1	1	1	1	1	RC0J30- □□
20	E02 897 333	MOTOR BAND		1	1	1	1	1	1	
21	E02 897 302	LINE FLOW FAN		1	1	1	1	1	1	

※1 Including SW P.C. BOARD and POWER MONITOR RECEIVER P.C. BOARD
※2 Including FAN MOTOR RUBBER MOUNT (2 PCS/SET)

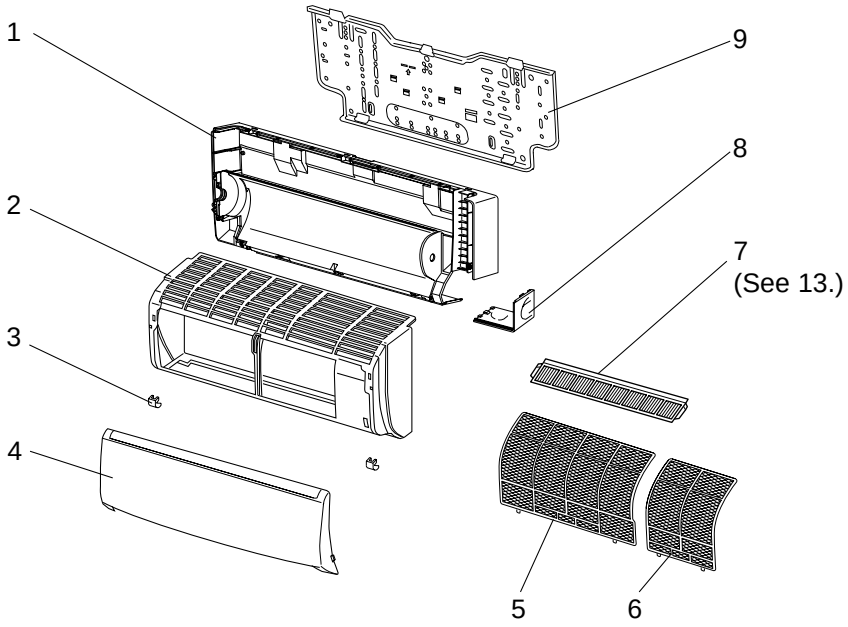
11-4. INDOOR UNIT HEAT EXCHANGER

22	E02 913 620	INDOOR HEAT EXCHANGER		1	1	1	1	1	1	
23	E02 815 666	UNION (GAS)		1	1	1	1	1	1	ϕ9.52
24	E02 151 667	UNION (LIQUID)		1	1	1	1	1	1	ϕ6.35

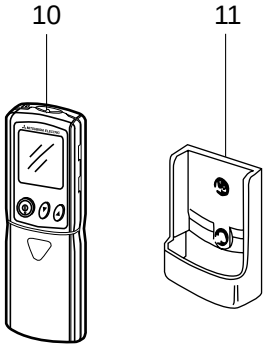
12 RoHS PARTS LIST (RoHS compliant)

MSZ-GA22VA
MSZ-GA25VA
MSZ-GA35VA

12-1. INDOOR UNIT STRUCTURAL PARTS



12-2. ACCESSORY AND REMOTE CONTROLLER



12-1. INDOOR UNIT STRUCTURAL PARTS

No.	RoHS	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit						Remarks
					MSZ-GA22VA-		MSZ-GA25VA-		MSZ-GA35VA-		
					E2	E3	E2	E3	E2	E3	
1	G	E12 A32 234	BOX		1	1	1	1	1	1	
2	G	E12 915 000	PANEL ASSEMBLY		1	1	1	1	1	1	Including No.3,4
3	G	E12 913 067	SCREW CAP		2	2	2	2	2	2	2PCS/SET
4	G	E12 915 010	FRONT PANEL		1	1	1	1	1	1	
5	G	E12 915 100	CATECHIN AIR FILTER (LEFT)		1	1	1	1	1	1	
6	G	E12 916 100	CATECHIN AIR FILTER (RIGHT)		1	1	1	1	1	1	
7	G	————	AIR CLEANING FILTER		1	1	1	1	1	1	MAC-415FT-E
8	G	E12 A32 975	CORNER BOX (RIGHT)		1	1	1	1	1	1	
9	G	E12 913 970	INSTALLATION PLATE		1	1	1	1	1	1	

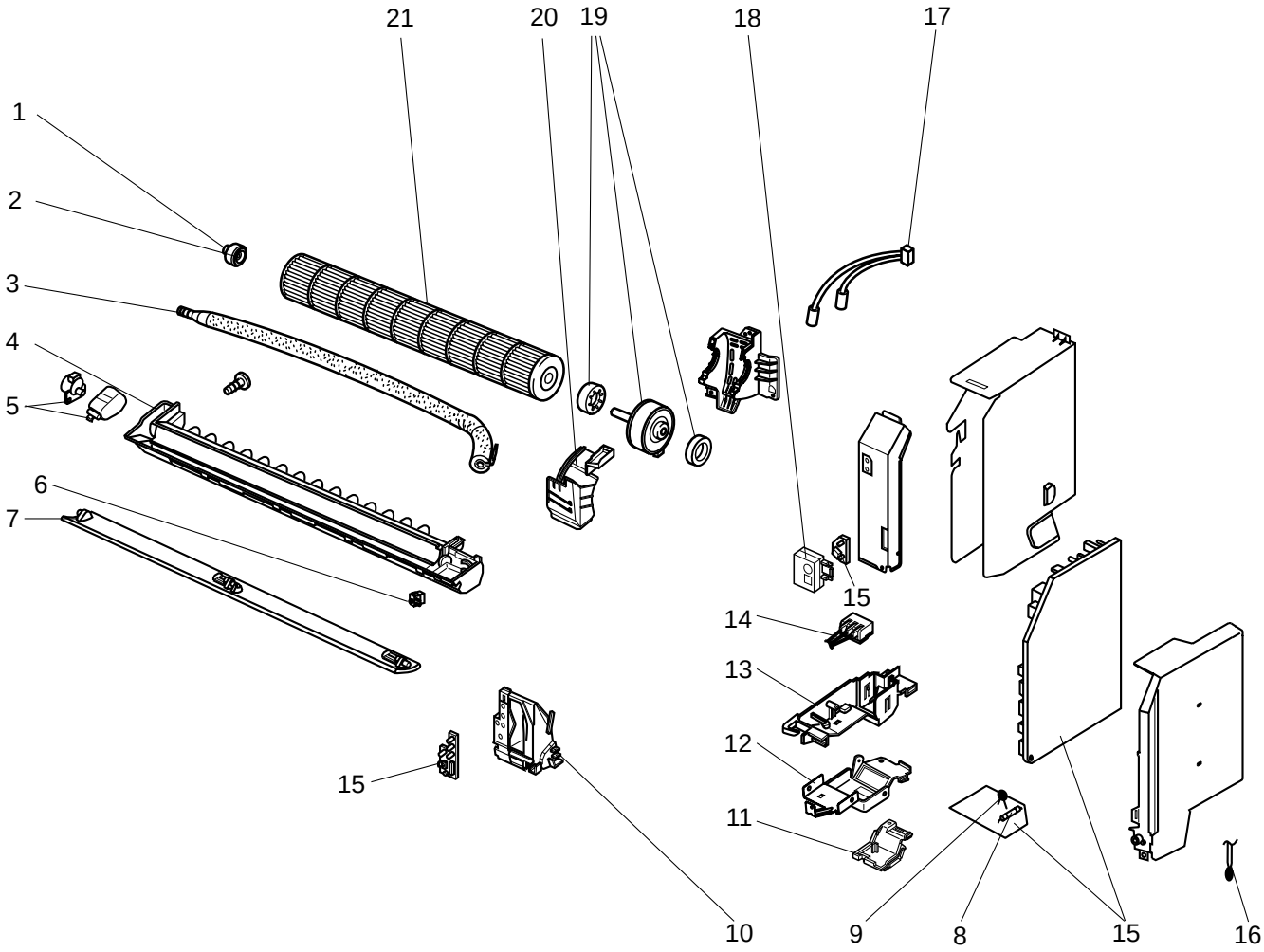
12-2. ACCESSORY AND REMOTE CONTROLLER

10	G	E12 915 426	REMOTE CONTROLLER		1	1	1	1	1	1	KM05B
11	G	E12 527 083	REMOTE CONTROLLER HOLDER		1	1	1	1	1	1	

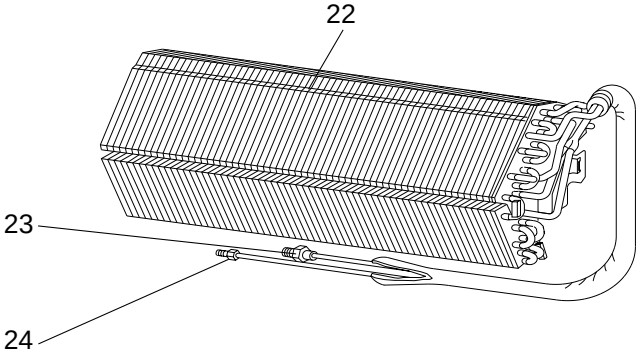
RoHS PARTS LIST (RoHS compliant)

MSZ-GA22VA
MSZ-GA25VA
MSZ-GA35VA

12-3. INDOOR UNIT ELECTRICAL PARTS AND FUNCTIONAL PARTS



12-4. INDOOR UNIT HEAT EXCHANGER



RoHS PARTS LIST (RoHS compliant)

12-3. INDOOR UNIT ELECTRICAL PARTS AND FUNCTIONAL PARTS

No.	RoHS	Part No.	Part name	Symbol in Wiring Diagram	Q'ty/unit						Remarks
					MSZ-GA22VA-		MSZ-GA25VA-		MSZ-GA35VA-		
					E2	E3	E2	E3	E2	E3	
1	G	E12 751 509	BEARING MOUNT		1	1	1	1	1	1	
2	G	E12 001 504	SLEEVE BEARING		1	1	1	1	1	1	
3	G	E12 897 702	DRAIN HOSE		1	1	1	1	1	1	
4	G	E12 915 235	NOZZLE ASSEMBLY		1	1	1	1	1	1	
5	G	E12 897 303	VANE MOTOR UNIT (HORIZONTAL)	MV	1	1	1	1	1	1	UP & DOWN
6	G	E12 897 316	INTERLOCK SWITCH(FAN)		1	1	1	1	1	1	
7	G	E12 913 040	HORIZONTAL VANE		1	1	1	1	1	1	
8	G	E12 A49 382	FUSE	F11	1	1	1	1	1	1	T3.15AL250V
9	G	E12 661 385	VARISTOR	NR11	1	1	1	1	1	1	
10	G	E12 915 095	POWER MONITOR RECEIVER P.C. BOARD HOLDER		1	1	1	1	1	1	
11	G	E12 897 784	V.A. CLAMP		1	1	1	1	1	1	
12	G	E12 897 780	TERMINAL BLOCK COVER		1	1	1	1	1	1	
13	G	E12 897 779	TERMINAL BLOCK HOLDER		1	1	1	1	1	1	
14	G	E12 913 375	TERMINAL BLOCK	TB	1	1	1	1	1	1	
15	G	E12 916 452	ELECTRONIC CONTROL P.C. BOARD ※1				1 ※3				AUTO RESTART
	G	E12 B39 452	ELECTRONIC CONTROL P.C. BOARD ※1		1	1					AUTO RESTART
	G	E12 B40 452	ELECTRONIC CONTROL P.C. BOARD ※1				1 ※4	1			AUTO RESTART
	G	E12 B41 452	ELECTRONIC CONTROL P.C. BOARD ※1						1	1	AUTO RESTART
16	G	E12 897 308	ROOM TEMPERATURE THERMISTOR	RT11	1	1	1	1	1	1	
17	G	E12 913 307	INDOOR COIL THERMISTOR	RT12, RT13	1	1	1	1	1	1	
18	G	E12 915 782	SWITCH HOLDER		1	1	1	1	1	1	
19	G	E12 915 300	INDOOR FAN MOTOR ※2	MF	1	1	1	1	1	1	RC0J30- □□
20	G	E12 897 333	MOTOR BAND		1	1	1	1	1	1	
21	G	E12 897 302	LINE FLOW FAN		1	1	1	1	1	1	

※1 Including SW P.C. BOARD and POWER MONITOR RECEIVER P.C. BOARD
※2 Including FAN MOTOR RUBBER MOUNT (2 PCS/SET)
※3 Serial number : ~6024700
※4 Serial number : 6024701~
Refer to 3.SPECIFICATION as for difference between ※3 and ※4.

12-4. INDOOR UNIT HEAT EXCHANGER

22	G	E12 913 620	INDOOR HEAT EXCHANGER		1	1	1	1	1	1	
23	G	E12 815 666	UNION (GAS)		1	1	1	1	1	1	ϕ9.52
24	G	E12 151 667	UNION (LIQUID)		1	1	1	1	1	1	ϕ6.35

13 OPTIONAL PARTS

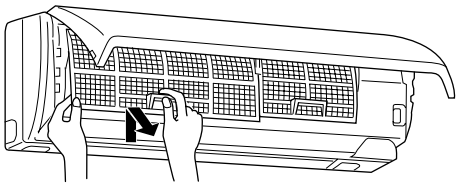
13-1. AIR CLEANING FILTER (ANTI-ALLERGY ENZYME FILTER)

- AIR CLEANING FILTER removes fine dust of 0.01 micron from air by means of static electricity.
- Normal life of AIR CLEANING FILTER is 1 year.
  If AIR CLEANING FILTER is to be washed, soak AIR CLEANING FILTER in water (when showing dirt, in lukewarm water) and rinse it delicately, without removing the filter from the frame about once every 3 months.
- Clogged AIR CLEANING FILTER may reduce the air conditioner capacity or cause frost on the air outlet.
- Do not remove or attach AIR CLEANING FILTER during unit operation.

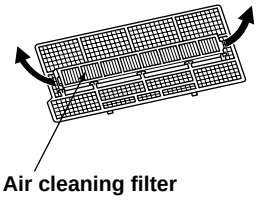
Model	Part No.
MSZ-GA22VA **MSZ-GA25VA** **MSZ-GA35VA**	MAC-415FT-E

Replacement of the air cleaning filter

(1) Remove the catechin air filter(left one)
The air cleaning filter is not attached to the right side catechin air filter



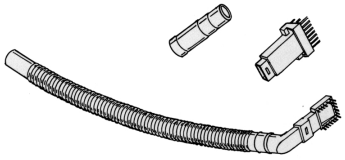
(2) Remove the air cleaning filter(Blue bellows type) from the catechin air filter.

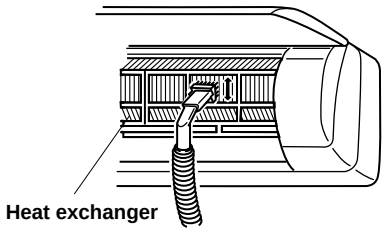


Air cleaning filter (Blue bellows type)

13-2. QUICK CLEAN KIT

- You can sweep the surface of heat exchanger if you install the special-made brush to your vacuum cleaner.

Model	Part No.	
MSZ-GA22VA **MSZ-GA25VA** **MSZ-GA35VA**	MAC-093SS-E	



Heat exchanger

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN

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Distributed in Jan. 2007. No. OB378 REVISED EDITION-B 6
Distributed in Jan. 2006. No. OB378 REVISED EDITION-A 6
Distributed in Jan. 2005. No. OB378 6
Made in Japan

New publication, effective Apr. 2007
Specifications subject to change without notice.