INDOOR UNIT

SERVICE MANUAL

No. OBH488
REVISED EDITION-C

Models

MSZ-FD25VA - E1, E2
MSZ-FD25VAS - E1, E2
MSZ-FD35VA - E1, E2
MSZ-FD35VAS - E1, E2
MSZ-FD50VA - E1, E2
MSZ-FD50VAS - E1, E2

Outdoor unit service manual
MUZ-FD-VA(H) Series (OBH489)
MUZ-FD-VABH Series (OBH519)
MXZ-A-VA Series (OB377)
MXZ-8A140A (OC316)

Revision C:
• MSZ-FD•VA(S)- E has been added.
Please void OBH488 REVISED EDITION-B.

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

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PARTS CATALOG (OBB488)
<table>
<thead>
<tr>
<th>Revision A:</th>
</tr>
</thead>
</table>
| • 3. SPECIFICATION has been corrected.  
• 10-5. TROUBLE CRITERION OF MAIN PARTS has been corrected. |  
<p>| Revision B: |<br />
| • MSZ-FD50VA(S)-  |<br />
| Revision C: |<br />
| • MSZ-FD-VA(S)-  |</p>
<table>
<thead>
<tr>
<th>Model</th>
<th>Old</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSZ-FD25VA</td>
<td>E1</td>
<td>MSZ-FD25VAS</td>
</tr>
<tr>
<td>MSZ-FD35VA</td>
<td>E1</td>
<td>MSZ-FD35VAS</td>
</tr>
<tr>
<td>MSZ-FD50VA</td>
<td>E1</td>
<td>MSZ-FD50VAS</td>
</tr>
<tr>
<td>MSZ-FD25VA(S)</td>
<td>E1</td>
<td>MSZ-FD25VA(S)</td>
</tr>
<tr>
<td>MSZ-FD35VA(S)</td>
<td>E1</td>
<td>MSZ-FD35VA(S)</td>
</tr>
<tr>
<td>MSZ-FD50VA(S)</td>
<td>E1</td>
<td>MSZ-FD50VA(S)</td>
</tr>
</tbody>
</table>

1. New model

1. Remote controller has been changed. (KM08A → KM09D)
2 PART NAMES AND FUNCTIONS


AREA lamp
POWER lamp
CLEAN lamp
PLASMA lamp

Operation Indicator lamp
Remote control receiving section

Front panel
Air filter
Plasma deodorizing filter
Plasma electrode unit
Plasma anti-allergy enzyme filter
Air outlet
Fan guard
Fan
Horizontal vane
Vertical vane
Heat exchanger
Emergency operation switch
Remote controller

AREA lamp indicates AREA setting
In AREA setting, the horizontal air flow direction changes automatically according to the detection of i-see Sensor which detects the floor/wall temperature to air-condition the room evenly.

i-see control operation
i-see Sensor constantly measure floor/wall temperature to automatically adjust to the set temperature by estimating the temperature actually perceived by a person inside the room ("sensible temperature").

ACCESSORIES

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>① Installation plate</td>
<td>1</td>
</tr>
<tr>
<td>② Installation plate fixing screw 4 × 25 mm</td>
<td>5</td>
</tr>
<tr>
<td>③ Remote controller holder</td>
<td>1</td>
</tr>
<tr>
<td>④ Fixing screw for ② 3.5 × 1.6 mm (Black)</td>
<td>2</td>
</tr>
<tr>
<td>⑤ Battery (AAA) for remote controller</td>
<td>2</td>
</tr>
<tr>
<td>⑥ Wireless remote controller</td>
<td>1</td>
</tr>
<tr>
<td>⑦ Felt tape (Used for left or left-rear piping)</td>
<td>1</td>
</tr>
</tbody>
</table>
### 3 SPECIFICATION

#### Indoor model

<table>
<thead>
<tr>
<th>Power supply</th>
<th>MSZ-FD25VA</th>
<th>MSZ-FD35VA</th>
<th>MSZ-FD50VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single phase</td>
<td>230 V, 50 Hz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Electrical data

<table>
<thead>
<tr>
<th>Power input *1</th>
<th>Cooling W</th>
<th>Heating W</th>
<th>Cooling A</th>
<th>Heating A</th>
<th>Heating A *1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26</td>
<td>31</td>
<td>0.25</td>
<td>0.30</td>
<td>0.53</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>33</td>
<td>0.27</td>
<td>0.32</td>
<td></td>
</tr>
</tbody>
</table>

#### Running current *1

<table>
<thead>
<tr>
<th>Cooling A</th>
<th>Heating A</th>
<th>Heating A *1</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25</td>
<td>0.30</td>
<td>0.53</td>
</tr>
</tbody>
</table>

#### Fan motor

<table>
<thead>
<tr>
<th>Model</th>
<th>Cooling A</th>
<th>Heating A</th>
<th>Heating A *1</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC0J40-GF</td>
<td>0.25</td>
<td>0.30</td>
<td>0.53</td>
</tr>
</tbody>
</table>

#### Dimensions W×H×D

<table>
<thead>
<tr>
<th>FD25VA</th>
<th>FD35VA</th>
<th>FD50VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>798 × 295 × 257</td>
<td>798 × 295 × 257</td>
<td>798 × 295 × 257</td>
</tr>
</tbody>
</table>

#### Weight kg

<table>
<thead>
<tr>
<th>FD25VAS</th>
<th>FD35VAS</th>
<th>FD50VAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

#### Color

<table>
<thead>
<tr>
<th>FD25VA</th>
<th>FD35VA</th>
<th>FD50VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>PURE WHITE</td>
<td>PURE WHITE</td>
<td>PURE WHITE</td>
</tr>
</tbody>
</table>

#### Air direction

<table>
<thead>
<tr>
<th>Super High</th>
<th>High</th>
<th>Med</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>672</td>
<td>516</td>
<td>378</td>
<td>276</td>
</tr>
<tr>
<td>726</td>
<td>750</td>
<td>552</td>
<td>402</td>
</tr>
<tr>
<td>270</td>
<td>282</td>
<td>270</td>
<td>282</td>
</tr>
</tbody>
</table>

#### Airflow

<table>
<thead>
<tr>
<th>Super High</th>
<th>High</th>
<th>Med</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>36</td>
<td>29</td>
<td>20</td>
</tr>
<tr>
<td>43</td>
<td>44</td>
<td>36</td>
<td>29</td>
</tr>
<tr>
<td>20</td>
<td>21</td>
<td>20</td>
<td>21</td>
</tr>
</tbody>
</table>

#### Special remarks

<table>
<thead>
<tr>
<th>Super High</th>
<th>High</th>
<th>Med</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>610</td>
<td>550</td>
<td>400</td>
<td>270</td>
</tr>
<tr>
<td>1,270</td>
<td>1,300</td>
<td>740</td>
<td>580</td>
</tr>
<tr>
<td>570</td>
<td>590</td>
<td>780</td>
<td>680</td>
</tr>
</tbody>
</table>

#### Sound level dB(A)

<table>
<thead>
<tr>
<th>Super High</th>
<th>High</th>
<th>Med</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td>44</td>
<td>36</td>
<td>29</td>
</tr>
<tr>
<td>20</td>
<td>21</td>
<td>20</td>
<td>21</td>
</tr>
</tbody>
</table>

#### Fan speed rpm

<table>
<thead>
<tr>
<th>Super High</th>
<th>High</th>
<th>Med</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,190</td>
<td>950</td>
<td>740</td>
<td>580</td>
</tr>
<tr>
<td>1,270</td>
<td>1,300</td>
<td>780</td>
<td>680</td>
</tr>
<tr>
<td>570</td>
<td>590</td>
<td>780</td>
<td>680</td>
</tr>
</tbody>
</table>

#### Fan speed regulator

<table>
<thead>
<tr>
<th>FD25VAS</th>
<th>FD35VAS</th>
<th>FD50VAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Remote controller model

<table>
<thead>
<tr>
<th>E1</th>
<th>E2</th>
</tr>
</thead>
<tbody>
<tr>
<td>KM08A</td>
<td>KM09D</td>
</tr>
</tbody>
</table>

**NOTE:** Test conditions are based on ISO 5151.

- Cooling: Indoor Dry-bulb temperature 27°C Wet-bulb temperature 19°C
- Heating: Indoor Dry-bulb temperature 35°C Wet-bulb temperature 6°C
- *1 Measured under rated operating frequency.

### Specifications and rating conditions of main electric parts

<table>
<thead>
<tr>
<th>Fuse (F11)</th>
<th>250 V, 3.15 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>i-see Sensor motor (MT)</td>
<td>MP20Z 12 VDC 300 Ω (at 25°C)</td>
</tr>
<tr>
<td>Horizontal vane motor (MV1)</td>
<td>MSFBC20C29 12 VDC 350 Ω (at 25°C)</td>
</tr>
<tr>
<td>Vertical vane motor (MV2)</td>
<td>MSBPC20M11 12 VDC 300 Ω (at 25°C)</td>
</tr>
<tr>
<td>Varistor (NR11)</td>
<td>S10K320E3K1</td>
</tr>
<tr>
<td>i-see Sensor (RR)</td>
<td>A2TPMI 23A FOV50 OBA060 P8L1 J4S</td>
</tr>
<tr>
<td>Terminal block (TB)</td>
<td>3P</td>
</tr>
</tbody>
</table>
NOISE CRITERIA CURVES

**MSZ-FD25VA MSZ-FD25VAS**

<table>
<thead>
<tr>
<th>FAN SPEED</th>
<th>FUNCTION</th>
<th>SPL(dB(A))</th>
<th>LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super High</td>
<td>COOLING</td>
<td>42</td>
<td>●●</td>
</tr>
<tr>
<td></td>
<td>HEATING</td>
<td>43</td>
<td>○○</td>
</tr>
</tbody>
</table>

**MSZ-FD35VA MSZ-FD35VAS**

<table>
<thead>
<tr>
<th>FAN SPEED</th>
<th>FUNCTION</th>
<th>SPL(dB(A))</th>
<th>LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super High</td>
<td>COOLING</td>
<td>43</td>
<td>●●</td>
</tr>
<tr>
<td></td>
<td>HEATING</td>
<td>44</td>
<td>○○</td>
</tr>
</tbody>
</table>

**MSZ-FD50VA MSZ-FD50VAS**

<table>
<thead>
<tr>
<th>FAN SPEED</th>
<th>FUNCTION</th>
<th>SPL(dB(A))</th>
<th>LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super High</td>
<td>COOLING</td>
<td>52</td>
<td>●●</td>
</tr>
<tr>
<td></td>
<td>HEATING</td>
<td>50</td>
<td>○○</td>
</tr>
</tbody>
</table>

Test conditions

Cooling: Dry-bulb temperature 27 °C, Wet-bulb temperature 19 °C
Heating: Dry-bulb temperature 20 °C, Wet-bulb temperature 15.5 °C

INDOOR UNIT

WALL

MICROPHONE

1 m

0.8 m

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5 OUTLINES AND DIMENSIONS

MSZ-FD25VA  MSZ-FD25VAS  MSZ-FD35VA  MSZ-FD35VAS
MSZ-FD50VA  MSZ-FD50VAS

Unit: mm

11 X 26 Oblong hole
Installation plate

11 X 20 Oblong hole
Wall hole ø65

Indoor unit

Piping

Insulation ø35 O.D
Liquid line ø7 - 0.5 m (Flared connection ø6.35)
Gas line 25/35: ø9.52 - 0.43 m (Flared connection ø9.52)
50: ø12.7 - 0.43 m (Flared connection ø12.7)
Drain hose Insulation ø28 O.D Connected part ø16 O.D

6 WIRING DIAGRAM


NOTES:
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 indicates:
   - : Terminal block
   - : Connector

WIRING DIAGRAM
MSZ-FD25VA MSZ-FD25VAS MSZ-FD35VA MSZ-FD35VAS

Refrigerant pipe ø9.52 (with heat insulator)
Refrigerant pipe ø6.35 (with heat insulator)

Refrigerant flow in cooling
Refrigerant flow in heating

MSZ-FD50VA MSZ-FD50VAS

Refrigerant pipe ø12.7 (with heat insulator)
Refrigerant pipe ø6.35 (with heat insulator)

Refrigerant flow in cooling
Refrigerant flow in heating
8-1. TIMER SHORT MODE
For service, set time can be shortened by short circuit of JPG and JPS on the electronic control P.C. board.
The time will be shortened as follows. (Refer to 10-7.)
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:

![P.C. board diagram]

NOTE: For modification, take out the batteries and press the OPERATE/STOP (ON/OFF) button twice or 3 times at first.
After modification, put back the batteries then press the RESET button.

Table 1

<table>
<thead>
<tr>
<th>No.</th>
<th>1 unit operation</th>
<th>2 units operation</th>
<th>3 units operation</th>
<th>4 units operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1</td>
<td>No modification</td>
<td>Same as at left</td>
<td>Same as at left</td>
<td>Same as at left</td>
</tr>
<tr>
<td>No. 2</td>
<td>—</td>
<td>Solder J1</td>
<td>Same as at left</td>
<td>Same as at left</td>
</tr>
<tr>
<td>No. 3</td>
<td>—</td>
<td>—</td>
<td>Solder J2</td>
<td>Same as at left</td>
</tr>
<tr>
<td>No. 4</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Solder both J1 and J2</td>
</tr>
</tbody>
</table>

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 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 is turned OFF, or the power supply is 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 release “AUTO RESTART FUNCTION”
1. Turn OFF the main power for the unit.
2. Solder the Jumper wire JR07 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.

8-4. REMOTE CONTROLLER
Be sure to set the slide switch inside the remote controller to an appropriate position in accordance with the installed position of the indoor unit. If the switch is not set correctly, the air conditioner may not function properly.

<table>
<thead>
<tr>
<th>Area</th>
<th>Left</th>
<th>Center</th>
<th>Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position of</td>
<td>L.C.R</td>
<td>L.C.R</td>
<td>L.C.R</td>
</tr>
<tr>
<td>the slide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>switch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the remote</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>controller</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Where is the indoor unit installed in your room?

Installed at left, if the distance is not more than 50 cm.
Installed at right, if the distance is not more than 50 cm.

Is the indoor unit installed at right, left or center?

NOTE: If the indoor unit is installed more than 50 cm away from the side walls, cabinets or other nearby objects, set the slide switch to the “center” position.
9 MICROPROCESSOR CONTROL


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 LAMP

The lamps at the center of the indoor unit indicates the operation state.

<table>
<thead>
<tr>
<th>Lamp</th>
<th>Operation state</th>
</tr>
</thead>
<tbody>
<tr>
<td>AREA</td>
<td>Refer to 9-7.</td>
</tr>
<tr>
<td>POWER</td>
<td>Lamp lights during operation. Lamp blinks in abnormal condition.</td>
</tr>
<tr>
<td>CLEAN</td>
<td>Lamp lights during clean operation. Refer to 9-9.</td>
</tr>
<tr>
<td>PLASMA</td>
<td>Lamp lights during PLASMA operation. Refer to 9-8.</td>
</tr>
</tbody>
</table>
9-1. COOL (○) OPERATION
(1) Press OPERATE/STOP (ON/OFF) button.
   POWER lamp of the indoor unit turns on with a beep tone.
(2) Select COOL 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. 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.

2. Low outside temperature operation
   When the outside temperature is lower, low outside temperature operation starts, and the outdoor fan slows or stops.

9-2. DRY (△) OPERATION
(1) Press OPERATE/STOP (ON/OFF) button.
   POWER 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.)

2. Low outside temperature operation
   Low outside temperature operation is as same as COOL mode. (9-1.2.)

9-3. HEAT (◇) OPERATION
(1) Press OPERATE/STOP (ON/OFF) button.
   POWER 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 CHANGE OVER ⋯ AUTO MODE OPERATION
Once desired temperature is set, unit operation is switched automatically between COOL and HEAT operation.

Mode selection
(1) Initial mode
   When unit starts the operation with AUTO operation from OFF:
   • If the room temperature is higher than the set temperature, operation starts in COOL mode.
   • If the room temperature is equal to or lower than the set temperature, operation starts in HEAT mode.

(2) Mode change
   COOL mode changes to HEAT mode when about 15 minutes have passed with the room temperature 1°C below the set temperature.
   HEAT mode changes to COOL mode when about 15 minutes have passed with the room temperature 1°C above the set temperature.

NOTE 1
If two or more indoor units are operating in multi system, there might be a case that the indoor unit, which is operating in △ (AUTO), cannot change over to the other operating mode (COOL → HEAT) and becomes a state of standby.
Refer to NOTE 2 “FOR MULTI SYSTEM AIR CONDITIONER”.

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9-5. 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 (approx. 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) The operation starts or finishes (including timer operation).
       (b) The test run operation starts.
       (c) Standby mode (only during multi system operation) starts or finishes.

   (4) VANE AUTO (@) mode
       The microprocessor automatically determines the vane angle to make the optimum room temperature distribution.

       COOL and DRY operation
       Vane angle is fixed to Angle 1.

       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 or 30 minutes, the vane angle automatically changes to Angle 2 for dew prevention.

NOTE 2

FOR MULTI SYSTEM AIR CONDITIONER
OUTDOOR UNIT: MXZ series

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

When you try to operate two or more indoor units with one outdoor unit simultaneously, one for the cooling and the others for heating, the operation mode of the indoor unit that operates first is selected. Other indoor units cannot operate, and operation indicator lamp flashes as shown in the figure below. In this case, please set all the indoor units to the same operation mode.

- When indoor unit 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.

COOL and DRY operation
Vane angle is fixed to Angle 1.

HEAT operation
Vane angle is fixed to Angle 4.

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(7) SWING (😐) mode
By selecting SWING mode with VANE CONTROL button, the horizontal vane swings vertically.

(8) Cold air prevention in HEAT operation
The horizontal vane position is set to Upward.
**NOTE:** When 2 or more indoor units are operated with multi outdoor unit, even if any indoor unit turns thermostat off, this control does not work in the indoor unit.

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

<table>
<thead>
<tr>
<th>To change the airflow direction</th>
<th>When to use this function?</th>
<th>COOL/DRY</th>
<th>HEAT</th>
</tr>
</thead>
</table>
| Pressing and holding VANE CONTROL button for 2 seconds or more, the horizontal vane reverses and moves horizontal position. | Use this function if you do not want the air from the indoor unit to blow directly onto your body.  
- 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 approx. 3 minutes after the vane has moved to the horizontal position.  
- 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 approx. 3 minutes. | The air conditioner starts heating operation approx. 3 minutes after the vane has moved to the horizontal position.  
- Sometimes the area around your feet may not get 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 approx. 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 ((UINT) operation (ECONOmic 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 changed to other operation mode.

2. Vertical vane
(1) Vane motor drive
These models are equipped with a stepping motor for the vertical vane. The rotating direction, speed, and angle of the motor are controlled by pulse signals (approx. 12 V) transmitted from microprocessor.

(2) The vertical vane angle and mode change as follows by pressing WIDE VANE 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) OPERATE/STOP (ON/OFF) button is pressed (POWER ON).
(b) SWING is started.

(4) SWING (→) MODE
By selecting SWING mode with WIDE VANE button, the vertical vane swings horizontally. The remote controller displays “→”. Swing mode is cancelled when WIDE MODE button is pressed once again.
9-6. i-see CONTROL OPERATION
The sensors constantly measure the room and floor/wall temperatures to automatically adjust to the set temperature by estimating the temperature actually perceived by a person inside the room ("sensible temperature").

Advantages
- The air inside the room is conditioned quickly to a comfortable condition.
- The room will not become too cold or hot even when the air conditioner is kept on for a long period.
- The air conditioner will not overcool or overheat, which means you can save on electricity.

i-see control operation is activated when i-see button is pressed with a thin stick in manual COOL or manual HEAT mode.

NOTE: i-see control operation is activated when the remote controller is first used following replacement of the batteries or resetting of the remote controller.

i-see control operation is cancelled when i-see button is pressed with a thin stick once again.

NOTE: If the conditioner is turned OFF without cancelling i-see control operation, i-see control operation is activated the next time the air conditioner is turned ON.

i-see Sensor
i-see Sensor, which is installed on the upper of the air outlet of the indoor unit, is moved with the stepping motor and it detects the floor/wall temperature.

![i-see Sensor is installed here.](image)

![Enlarged view of i-see Sensor](image)

### i-see Sensor

- When AREA setting is not activated, the sensing range of i-see Sensor differs depending on the installation location of the air conditioner.

<table>
<thead>
<tr>
<th>Installation position</th>
<th>Image of sensing range</th>
<th>Direction of sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed at left</td>
<td><img src="image" alt="Image" /></td>
<td>Right</td>
</tr>
<tr>
<td>Installed at center</td>
<td><img src="image" alt="Image" /></td>
<td>Center</td>
</tr>
<tr>
<td>Installed at right</td>
<td><img src="image" alt="Image" /></td>
<td>Left</td>
</tr>
</tbody>
</table>

Refer to "Remote controller in SERVICE FUNCTIONS".

- Install the front panel correctly after being removed for maintenance or service so that the floor/wall temperatures can be measured correctly.

9-7. AREA ( ) SETTING
(1) Press OPERATE/STOP (ON/OFF) button to start the air conditioner.
(2) Press i-see button. (NOTE 1)
(3) Press AREA button.
   Each time the button is pressed, the area is changed in sequence:
   ![Image](image) (AUTO) → ![Image](image) (LEFT) → ![Image](image) (RIGHT) → Cancel
   i-see Sensor moves intermittently, measuring the floor and wall temperature.
(4) AREA setting is cancelled when the "cancel" is selected by pressing AREA button, or when WIDE VANE button is pressed.

NOTE 1: AREA setting is only available during i-see control operation.
NOTE 2: If AREA setting is cancelled, the vertical vane returns to the previously set position before AREA setting.
NOTE 3: The horizontal air flow direction (WIDE VANE button), including horizontal SWING, cannot be set during AREA setting.

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Indoor unit installation location and air-conditioning area

- Be sure to set the slide switch inside the remote controller to an appropriate position in accordance with the installed position of the indoor unit. If the switch is not set correctly, the air conditioner may not function properly.

<table>
<thead>
<tr>
<th>Installed at left</th>
<th>Installed at center</th>
<th>Installed at right</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEFT</td>
<td>RIGHT</td>
<td>LEFT</td>
</tr>
</tbody>
</table>

- To air-condition mainly the left area of the room
- To air-condition the entire room
- To air-condition mainly the right area of the room

<table>
<thead>
<tr>
<th>Remote controller button</th>
<th>Press AREA button to select LEFT.</th>
<th>Press AREA button to select AUTO.</th>
<th>Press AREA button to select RIGHT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote controller display</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i-see Sensor operation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control range of horizontal air flow direction. The vertical air flow direction conforms to the setting on the remote controller. (The horizontal air flow direction is controlled in this range.)</td>
<td>Installed at center</td>
<td>Installed at left</td>
<td>Installed at right</td>
</tr>
<tr>
<td>Indoor unit display</td>
<td>AREA L R or L R or L R</td>
<td>L R or L R or L R</td>
<td>L R or L R or L R</td>
</tr>
</tbody>
</table>

- When AREA is set to AUTO
  - The vertical vane is controlled to maintain uniform temperature in the whole room.
  - The i-see Sensor moves in a range of 150 degrees detecting floor/wall temperature of 3 areas (left, right, center). Therefore, the detected temperatures may be different from the temperatures measured on commercial thermometers depending on the condition or temperature distribution on the floor and/or wall.

Ex.) In COOL mode

- The indoor unit delivers cold air detecting the warm area in the room.

<table>
<thead>
<tr>
<th>Indoor unit display</th>
<th>Indication of AREA setting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L AREA R</td>
</tr>
</tbody>
</table>

- The horizontal air flow direction changes if i-see Sensor detects approx. 3 °C temperature difference.
- In AUTO of AREA setting, both right and left lamps are lighted when the room is evenly air-conditioned.

Ex.) Daytime: Warm area, Nighttime: Cold area

Approx. 150 degrees
Operation and operating range

i-see sensor moves 30 degrees from the center in both right and left side.

i-see Sensor turning to the left

i-see Sensor turning to the center

i-see Sensor turning to the right

i-see Sensor operates as follows in accordance with AREA setting made with the remote controller.

"AUTO" in AREA setting: first turning to the LEFT for adjusting the position then.....

CENTER → RIGHT → CENTER → LEFT → CENTER......

(The sensor turns to the right, left and center.)

"RIGHT" in AREA setting: first turning to the LEFT for adjusting the position then.....

CENTER → RIGHT → CENTER → RIGHT → CENTER......

(The sensor turns to the right and center.)

"LEFT" in AREA setting: first turning to the LEFT for adjusting the position then.....

CENTER → LEFT → CENTER → LEFT → CENTER......

(The sensor turns to the left and center.)

The sensor finishes turning to one area to another for 3 seconds and it operates one area for 5 seconds.

9-8. PLASMA (Φ) OPERATION

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

(2) Press PLASMA button to set PLASMA operation.

PLASMA lamp turns ON and plasma electrode unit is energized.

(3) Press PLASMA button again to cancel PLASMA operation.

Description of PLASMA operation:

Plasma operation consists of deodorizing and air purifying features.

Particles of odor-releasing substances are absorbed and decomposed by the plasma deodorizing filter.

Particles of allergens such as pollen and house dust are collected by the plasma anti-allergy filter.

These filters work with negative ions generated by the plasma electrode unit.
9-9. CLEAN (CLEAN) OPERATION
• When CLEAN operation is set, it performs for 40 minutes when unit is stopped after COOL/DRY operation. CLEAN operation performs when: COOL is operated more than 3 minutes / DRY is operated more than 6 minutes.
• The horizontal vane is slightly opened and the fan is stopped for the first 15 minutes. Then, the horizontal vane is set to higher than angle 1 and the fan is operated for 25 minutes.

9-10. TIMER OPERATION
1. How to set the time
   (1) Check that the current time is set correctly.
      NOTE: Timer operation will not work without setting the current time. Initially "0:00" blinks at the current time display of TIME MONITOR, so set the current time correctly with CLOCK SET button.
      How to set the current time
      (a) Press the CLOCK set button.
      (b) Press the TIME SET buttons ( ) and ( ) to set the current time.
         • Each time FORWARD button ( ) is pressed, the set time increases by 1 minute, and each time BACKWARD button ( ) is pressed, the set time decreases by 1 minute.
         • Pressing those buttons longer, the set time increases/decreases by 10 minutes.
      (c) Press the CLOCK set button.
   (2) Press OPERATE/STOP (ON/OFF) button to start the air conditioner.
   (3) Set the time of timer.
      ON timer setting
      (a) Press ON TIMER button ( ) during operation.
      (b) Set the time of the timer using TIME SET buttons ( ) and ( ).
      OFF timer setting
      (a) Press OFF TIMER button ( ) during operation.
      (b) Set the time of the timer using TIME SET buttons ( ) and ( ).
      ※ Each time FORWARD button ( ) is pressed, the set time increases by 10 minutes; each time BACKWARD button ( ) is pressed, the set time decreases by 10 minutes.

2. To release the timer
   To release ON timer, press ON TIMER button ( ).
   To release OFF timer, press OFF TIMER button ( ).
   TIMER is cancelled and the display of set time disappears.

PROGRAM TIMER
• OFF timer and ON timer can be used in combination. The timer of the set time that is reached first will operate first.
• “ ” and “ ” display shows the order of OFF timer and ON timer operation.
(Example 1) The current time is 8:00 PM.
   The unit turns off at 11:00 PM, and on at 6:00 AM.
(Example 2) The current time is 11:00 AM.
   The unit turns on at 5:00 PM, and off at 9:00 PM.

NOTE: If the main power is turned OFF or a power failure occurs while ON/OFF timer is active, the timer setting is cancelled. As these models are equipped with an auto restart function, the air conditioner starts operating with timer cancelled when power is restored.
9-11. 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 AREA 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 thermostat is ON, but 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.

All protective operations such as the coil frost prevention works even in emergency operation.

In the test run or emergency operation, the horizontal vane operates in VANE AUTO (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 (E.O.SW)**

<table>
<thead>
<tr>
<th>Operation mode</th>
<th>COOL</th>
<th>HEAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set temperature</td>
<td>24°C</td>
<td>24°C</td>
</tr>
<tr>
<td>Horizontal vane</td>
<td>Auto</td>
<td>Auto</td>
</tr>
<tr>
<td>Vertical vane</td>
<td>Straight</td>
<td>Straight</td>
</tr>
</tbody>
</table>

The operation mode is indicated by the AREA lamp as following:

- **Lighted**
- **Not lighted**

**NOTE:**
This is the indication of EMERGENCY OPERATION mode.
AREA setting is not available during EMERGENCY OPERATION.

9-12. 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.
10 TROUBLESHOOTING


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.

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) When the P.C. board seems to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.

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.

   ➀ Remove the front lid and insert batteries. Then reattach the front lid.
   ➋ Press RESET button with a thin instrument, and then use the remote controller.

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

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 ➀ to ➋.

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

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

**Operational procedure**

**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 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. [x1]

**Judgment of indoor/outdoor abnormality**

- **Before blinking, does POWER lamp stay ON for 3 seconds?**
  - Stays ON for 3 seconds (without beep): The outdoor unit is abnormal.
  - The indoor unit is abnormal.
  - Check the blinking pattern, and confirm the abnormal point with the indoor unit failure mode table. (Refer to 10-2.4) Make sure to check at least two consecutive blinking cycles. [x2]

- **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. [x3]

**Repairing the defective parts.**

**Deleting the memorized abnormal condition**

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

**NOTE:**
1. Make sure to release the failure mode recall function once 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.

- **Blinking pattern when the indoor unit is abnormal:**
  - Blinking at 0.5-second interval
  - 2.5-second OFF
  - 2.5-second OFF
  - Blinking at 0.5-second interval

- **Blinking pattern when the outdoor unit is abnormal:**
  - Blinking at 0.5-second interval
  - 3-second ON
  - 2.5-second OFF
  - 3-second ON
  - 3-second ON

- **Blinking pattern when the indoor unit is abnormal:**
  - Blinking at 0.5-second interval
  - 2.5-second OFF
  - 2.5-second OFF
  - Blinking at 0.5-second interval

- **Blinking pattern when the outdoor unit is abnormal:**
  - Blinking at 0.5-second interval
  - 3-second ON
  - 2.5-second OFF
  - 3-second ON
  - 3-second ON
2. Flow chart of PLASMA operation failure mode recall function

Operational procedure

1. Confirm that the remote controller is in the failure mode recall function.

2. With the remote controller headed towards the indoor unit, press TOO COOL or TOO WARM button to adjust the set temperature to 23°C. ※1

3. Does POWER lamp on the indoor unit blink at the interval of 0.5 seconds?
   - Yes (Blinks): The plasma electrode unit is abnormal. Beep is emitted at the same timing as the blinking of POWER lamp. ※2
   - No (OFF): The plasma electrode unit is normal.

4. Check the blinking pattern, and refer to confirm the abnormal point with the PLASMA operation failure mode table. (10-2.5.)

5. Make sure to check at least two consecutive blinking cycles. ※2

6. Repair the defective parts.

7. Releaseing 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.

8. Deleting the memorized abnormal condition
   - After repairing the unit, recall the failure mode again according to "Setting up the failure mode recall function". (10-2.1.)
   - Press OPERATE/STOP (ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.
   - Press EMERGENCY OPERATION switch so that the memorized abnormal condition is deleted.
   - Release the failure mode recall function according to "Releasing the failure mode recall function" mentioned above.

NOTE: 1. Make sure to release the failure mode recall function once 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 plasma unit is abnormal:

<table>
<thead>
<tr>
<th>ON</th>
<th>OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blinking at 0.5-second interval</td>
<td>Blinking at 0.5-second interval</td>
</tr>
<tr>
<td>Repeated cycle</td>
<td>Repeated cycle</td>
</tr>
<tr>
<td>Beeps</td>
<td>Beeps</td>
</tr>
<tr>
<td>Repeated cycle</td>
<td>Repeated cycle</td>
</tr>
<tr>
<td>※1. Regardless of normal or abnormal condition, 2 short beeps are emitted as the signal is received.</td>
<td></td>
</tr>
</tbody>
</table>

3. PLASMA operation check

PLASMA operation goes ON when PLASMA button on the remote controller is pressed with any set temperature displayed during failure mode recall function.

<table>
<thead>
<tr>
<th>PLASMA lamp</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuously blinking</td>
<td>Follow &quot;Check of PLASMA operation&quot; to identify the error. (Refer to 10-6.⑥)</td>
</tr>
<tr>
<td>2-time flash</td>
<td>There is failure in PLASMA operation control circuit on the indoor electronic control P.C. board. (Refer to 10-6.⑥)</td>
</tr>
<tr>
<td>Not lighted</td>
<td>Normal</td>
</tr>
</tbody>
</table>

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### 4. Indoor unit failure mode table

<table>
<thead>
<tr>
<th>POWER lamp</th>
<th>Abnormal point (Failure mode)</th>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not lighted</td>
<td>Normal</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1-time flash every 0.5-second</td>
<td>Room temperature thermistor</td>
<td>The room temperature thermistor short or open circuit is detected every 8 seconds during operation.</td>
<td>Refer to the characteristics of the room temperature thermistor (10-7.).</td>
</tr>
<tr>
<td>2-time flash 2.5-second OFF</td>
<td>Indoor coil thermistor</td>
<td>The indoor coil thermistor short or open circuit is detected every 8 seconds during operation.</td>
<td>Refer to the characteristics of the main indoor coil thermistor (10-7.).</td>
</tr>
<tr>
<td>3-time flash 2.5-second OFF</td>
<td>Serial signal</td>
<td>The serial signal from outdoor unit is not received for a maximum of 6 minutes.</td>
<td>Refer to 10-6. &quot;How to check miswiring and serial signal error&quot;.</td>
</tr>
<tr>
<td>11-time flash 2.5-second OFF</td>
<td>Indoor fan motor</td>
<td>The rotational frequency feedback signal is not emitted during the 12 seconds the indoor fan operation.</td>
<td>Refer to 10-6. &quot;Check of indoor fan motor&quot;.</td>
</tr>
<tr>
<td>12-time flash 2.5-second OFF</td>
<td>Indoor control system</td>
<td>It cannot properly read data in the nonvolatile memory of the indoor electronic control P.C. board.</td>
<td>Replace the indoor electronic control P.C. board.</td>
</tr>
</tbody>
</table>

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

### 5. PLASMA operation failure mode table

<table>
<thead>
<tr>
<th>POWER lamp</th>
<th>Abnormal point (Failure mode)</th>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-time flash</td>
<td>PLASMA power supply control</td>
<td>PLASMA power supply cannot be turned OFF even if the PLASMA operation is turned OFF with the remote controller.</td>
<td>Replace the indoor electronic control P.C. board.</td>
</tr>
<tr>
<td>2-time flash</td>
<td>Spark discharge</td>
<td>The voltage between CN1 (+) and (GND) on the PLASMA POWER P.C. board falls below 1.6 V (spark discharge judgment voltage).</td>
<td>Refer to 10-6. &quot;Check of PLASMA operation&quot;.</td>
</tr>
<tr>
<td>3-time flash</td>
<td>Abnormal electric discharge error 1</td>
<td>The voltage between CN1 (+) and (GND) on the PLASMA POWER P.C. board falls by 0.9 V below the normal voltage value (3 V).</td>
<td>Refer to 10-6. &quot;Check of PLASMA operation&quot;.</td>
</tr>
<tr>
<td>4-time flash</td>
<td>Abnormal electric discharge error 2</td>
<td>The voltage between CN1 (+) and (GND) on the PLASMA POWER P.C. board falls significantly. (0.4 V / 0.5 ms)</td>
<td></td>
</tr>
<tr>
<td>5-time flash</td>
<td>PLASMA DEODORIZING</td>
<td>The voltage between CN1 (+) and (GND) on the PLASMA POWER P.C. board rises above the normal voltage value (3 V).</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE 1:** Blinks patterns of this mode differ from the ones of TROUBLESHOOTING CHECK TABLE (10-4.).

**NOTE 2:** As soon as an abnormality is detected, PLASMA operation goes OFF, therefore measuring instrument which records the voltage wave is required in order to perform the above mentioned voltage measurement.

**NOTE 3:** When POWER lamp flashes 1-time or 2-time, please perform PLASMA operation check (Refer to 10-2.3.).
10-3. INSTRUCTION OF TROUBLESHOOTING

Start

Indoor unit operates. Outdoor unit does not operate.

Indoor unit operates. Outdoor unit does not operate normally.

Indoor unit does not receive the signal from remote controller.

OPERATION INDICATOR lamp on the indoor unit is flashing on and off.

Outdoor unit operates only in Test Run operation. ¥

Outdoor unit does not operate even in Test Run operation. ¥

Unit does not operate normal operation in COOL or HEAT mode.

Indoor unit operates, when EMERGENCY OPERATION switch is pressed.

Indoor unit does not operate, when EMERGENCY OPERATION switch is pressed.

PLASMA lamp 2-time flash
Cause:
• Trouble of PLASMA operation

1. Check indoor/outdoor connecting wire. (Check if the power is supplied to the indoor unit.)
2. Refer to 10-6. "Check of indoor electronic control P.C. board and indoor fan motor".

Refer to 10-6. "Check of outdoor unit service manual.

Check room temperature thermistor. Refer to 10-7. "Test point diagram and voltage".

Refer to "How to check inverter/compressor".

Refer to 10-6. "Check of PLASMA operation".

POWER lamp 2-time flash Cause: Indoor unit • Trouble of room temperature/ indoor coil thermistor

POWER lamp 3-time flash Cause: Indoor unit • Trouble of indoor fan motor

POWER lamp 4-time flash Cause: Indoor unit • Trouble of indoor unit control system

POWER lamp 5-time flash Cause: Outdoor unit • Trouble of outdoor power system abnormality

POWER lamp 6-time flash Cause: Outdoor unit • Trouble of outdoor controller in outdoor unit

POWER lamp 7-time flash Cause: Outdoor unit • Other ab-nornality

POWER lamp 14-time flash Cause: Outdoor unit • Other abnormality

All lamps Flash on and off at 0.5-second intervals Cause: Indoor unit • The horizontal vane is not installed correctly.

POWER lamp Flash on and off at 0.5-second intervals Cause: Indoor/Outdoor unit • Miswiring or trouble of serial signal

Check room temperature thermistor and indoor coil thermistor. Refer to 10-7. "Test point diagram and voltage".

Replace the indoor electronic control P.C. board.

Refer to "How to check inverter/compressor".

Replace the inverter P.C. board or the outdoor electronic control P.C. board.

Check "Flow chart of the detailed outdoor unit failure mode recall function."

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**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.

<table>
<thead>
<tr>
<th>No.</th>
<th>Abnormal point</th>
<th>Operation indicator lamp</th>
<th>Symptom</th>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Miswiring or serial signal</td>
<td>POWER lamp flashes. 0.5-second ON&lt;br&gt;0.5-second OFF</td>
<td>The serial signal from the outdoor unit is not received for 6 minutes.</td>
<td>• Refer to 10-6. &quot;How to check miswiring and serial signal error&quot;.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Indoor coil thermistor</td>
<td>POWER lamp flashes. 2-time flash&lt;br&gt;2.5-second OFF</td>
<td>The indoor coil or the room temperature thermistor is short or open circuit.</td>
<td>• Refer to 10-7. the characteristics of indoor coil thermistor, and the room temperature thermistor.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Indoor fan motor</td>
<td>POWER lamp flashes. 3-time flash&lt;br&gt;2.5-second OFF</td>
<td>The rotational frequency feedback signal is not emitted during the indoor fan operation.</td>
<td>• Refer to 10-8. &quot;Check of indoor fan motor&quot;.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Indoor control system</td>
<td>POWER lamp flashes. 4-time flash&lt;br&gt;2.5-second OFF &lt;br&gt;Indoor unit and outdoor unit do not operate.</td>
<td>It cannot properly read data in the nonvolatile memory of the indoor electronic control P.C. board.</td>
<td>• Replace the indoor electronic control P.C. board.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Outdoor power system</td>
<td>POWER lamp flashes. 5-time flash&lt;br&gt;2.5-second OFF</td>
<td>It consecutively occurs 3 times that the compressor stops for overcurrent protection or start-up failure protection within 1 minute after start-up.</td>
<td>• Refer to &quot;How to check of inverter/compressor&quot;. Refer to outdoor unit service manual. • Check the stop valve.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Outdoor thermistors</td>
<td>POWER lamp flashes. 6-time flash&lt;br&gt;2.5-second OFF</td>
<td>The outdoor thermistors short or open circuit during the compressor operation.</td>
<td>• Refer to &quot;Check of outdoor thermistor&quot;. Refer to outdoor unit service manual.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Outdoor control system</td>
<td>POWER lamp flashes. 7-time flash&lt;br&gt;2.5-second OFF</td>
<td>It cannot properly read data in the nonvolatile memory of the inverter P.C. board or the outdoor electronic control P.C. board.</td>
<td>• Replace the inverter P.C. board or the outdoor electronic control P.C. board. Refer to outdoor unit service manual.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Other abnormality</td>
<td>POWER lamp flashes. 14-time flash&lt;br&gt;2.5-second OFF</td>
<td>An abnormality other than above mentioned is detected.</td>
<td>• Check the stop valve. • Confirm the abnormality in detail using the failure mode recall function for outdoor unit.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Outdoor control system</td>
<td>POWER lamp lights up&lt;br&gt;Not lighted</td>
<td>Outdoor unit does not operate</td>
<td>It cannot properly read data in the nonvolatile memory of the inverter P.C. board or the outdoor electronic control P.C. board.</td>
<td>• Check the blinking pattern of the LED on the inverter P.C. board or the outdoor electronic control P.C. board.</td>
</tr>
<tr>
<td>No.</td>
<td>Abnormal point</td>
<td>Operation indicator lamp</td>
<td>Symptom</td>
<td>Condition</td>
<td>Correspondence</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------------</td>
<td>--------------------------</td>
<td>--------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Attachment of the horizontal vane</td>
<td>All lamps flash at the same time. 0.5-second ON 0.5-second OFF</td>
<td>Indoor unit and outdoor unit do not operate.</td>
<td>The electricity is not conducted to the interlock switch (Fan) of the horizontal vane.</td>
<td>Refer to 10-6. &quot;Check of installation of the horizontal vane&quot;.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Abnormal point</th>
<th>Operation indicator lamp</th>
<th>Symptom</th>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MXZ type Operation mode setting</td>
<td>POWER lamp is lighted. AREA lamps flash. 2.5-second OFF</td>
<td>Outdoor unit operates but indoor unit does not operate.</td>
<td>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.</td>
<td>Unify the operation mode. Refer to outdoor unit service manual.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Abnormal point</th>
<th>Operation indicator lamp</th>
<th>Symptom</th>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PLASMA control</td>
<td>PLASMA lamp flashes. 2-time flash 2.5-second OFF</td>
<td>Indoor unit and outdoor unit do not operate.</td>
<td>PLASMA operation can not be turned OFF even if the PLASMA operation is turned OFF with remote controller.</td>
<td>Refer to 10-6. &quot;Check of PLASMA operation&quot;.</td>
</tr>
</tbody>
</table>
### 10-5. TROUBLE CRITERION OF MAIN PARTS

<table>
<thead>
<tr>
<th>Part name</th>
<th>Check method and criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room temperature thermistor (RT11)</td>
<td>Measure the resistance with a tester. Refer to 10-7. &quot;Test point diagram and voltage&quot;, &quot;Indoor electronic control P.C. board&quot;, for the chart of thermistor.</td>
</tr>
<tr>
<td>Indoor coil thermistor (RT12, RT13)</td>
<td></td>
</tr>
<tr>
<td>Indoor fan motor (MF)</td>
<td>Check 10-6.8.</td>
</tr>
<tr>
<td>Horizontal vane motor (MV1)</td>
<td>Measure the resistance between the terminals with a tester. (Part temperature 10 ~ 30°C)</td>
</tr>
<tr>
<td>Vertical vane motor (MV2)</td>
<td></td>
</tr>
<tr>
<td>i-see Sensor motor (MT)</td>
<td></td>
</tr>
<tr>
<td>i-see Sensor (RR)</td>
<td>Cover the i-see Sensor with black vinyl tape. Then, turn ON the power supply. (i-see Sensor is energized,) Measure the voltage between connector terminals of i-see Sensor with a tester. (Part temperature 10 ~ 40°C)</td>
</tr>
<tr>
<td>PLASMA electrode unit</td>
<td>Check 10-6.8.</td>
</tr>
</tbody>
</table>

#### Color of the lead wire Normal

| Horizontal vane motor (MV1) | BRN - other one | 313 ~ 375 Ω |
| Vertical vane motor (MV2)   | 268 ~ 322 Ω    |
| i-see Sensor motor (MT)     | 223 ~ 268 Ω    |

#### i-see Sensor connector terminals Normal range

| Ω(GND) - Ω(+) | 1.874 ~ 3.387 VDC |
| Ω(+) - Ω(GND) | 1.010 ~ 1.420 VDC |

**NOTE:** Pay attention to static electricity.
10-6. TROUBLESHOOTING FLOW

A. Check of indoor fan motor

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

Turn OFF the power supply.

Is there any foreign matter that interferes the rotation of the line flow fan?

No

Yes

Remove the foreign matter and adjust the line flow fan.

Pay enough attention to the high voltage on the fan motor connector CN211.

Turn ON the power supply, wait 5 seconds or more, and then press EMERGENCY OPERATION switch. Measure the supply voltage as follows within 12 seconds after EMERGENCY OPERATION switch is pressed.

If more than 12 seconds passes, turn OFF the power supply and turn it ON again, then measure the voltage.

1. Measure the voltage between CN211 (+) and (-).
2. Measure the voltage between CN211 (+) and (-).

If more than 12 seconds passes after EMERGENCY OPERATION switch is pressed, the voltage measured at 2. above goes 0 VDC although the indoor electronic control P.C. board is normal.

Is there 325 VDC between CN211 (+) and (-), and does the voltage between CN211 (+) and (-) rise to the range of 3 to 6 VDC within 12 seconds after EMERGENCY OPERATION switch is pressed?

Yes

Replace the indoor fan motor.

No

Replace the indoor electronic control P.C. board.

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

Measure the voltage between CN211 (+) and (-) while the fan motor is rotating.

Is it unchanged holding 0 or 15 VDC?

No

(Changed)

Replace the indoor electronic control P.C. board.

Yes

(Changed)

Replace the indoor fan motor.

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

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

Press OPERATE/STOP (ON/OFF) button on the remote controller.

Is LCD display on the remote controller visible?
Yes
No
(Not clear)

Replace the batteries. (Refer to 10-1.4.)

Remove the batteries, then set them back and press RESET button. (Refer to 10-1.4.) Check if the unit operates with the remote controller.

Does the unit operate with the remote controller?
Yes
No

OK

Turn ON a radio to AM and press OPERATE/STOP (ON/OFF) button on the remote controller.

Is noise heard from radio?
Yes
No

Replace the remote controller.

Are there any fluorescent lights of inverter or rapid-start type within the range of 1 m.?
Yes
No

* Reinstall the unit away from lights.
* Attach a filter on receiving part.

Replace the indoor electronic control P.C. board. (Including the receiver)
**Check of indoor electronic control P.C. board and indoor fan motor**

1. **Turn OFF the power supply.**
   - Remove indoor fan motor connector CN211, vane motor connector CN151 and the i-see Sensor motor connector CN110 from the indoor electronic control P.C. board and turn ON the power supply.

2. **Does the unit operate with the remote controller?**
   - **Yes**
   - **No**

3. **Does POWER lamp light up by pressing EMERGENCY OPERATION switch?**
   - **Yes**
   - **No**

4. **Measure the resistance of the i-see Sensor motor coil.** (Refer to 10-5.)
   - Short/open circuit: Replace the i-see Sensor motor and the indoor electronic control P.C. board.

5. **Measure the resistance between CN211 and CN151 of the indoor fan motor connector.**
   - Short/open circuit: Replace the indoor fan motor.

6. **Measure the resistance of the horizontal vane motor coil and the vertical vane motor coil.** (Refer to 10-5.)
   - Short/open circuit: Replace the horizontal vane motor, the vertical vane motor and the indoor electronic control P.C. board.

7. **Replace the varistor (NR11) and fuse (F11).**
   - **Is the varistor (NR11) burnt and the fuse (F11) blown?**
     - **Yes**
       - **Be sure to check both the fuse and the varistor in any case.**
       - **Is the fuse (F11) blown only?**
         - **Yes**
           - Replace the fuse (F11) and the indoor fan motor.
         - **No**
           - Replace the fuse (F11).
     - **No**

9. **Measure the resistance between (+) and (-) of the indoor fan motor connector.**
   - **1.** The fan motor connector's (+) lead wire is red, whereas (-) is black.
   - **2.** Connect "+" of the tester to fan motor connector's (+) lead wire, and "-" to (-) lead wire, otherwise the resistance cannot be measured properly.
   - **Is the resistance 1 MΩ or more?**
     - **Yes**
       - Replace the fuse (F11) and the indoor fan motor.
     - **No**
       - Replace the fuse (F11).

10. **Measure the resistance of cement resistor (R111) on the indoor electronic control P.C. board.**
    - **Is the resistance approx. 4 Ω?**
      - **No**
        - Replace the indoor electronic control P.C. board and the indoor fan motor.
      - **Yes**
        - Replace the indoor electronic control P.C. board.
D. How to check miswiring and serial signal error

1. Turn OFF the power supply.
2. Is there rated voltage in the power supply?
   - Yes: Go to Step 3.
   - No: Check the power supply.
3. Turn ON the power supply.
4. Is there rated voltage between outdoor terminal block S1 and S2?
   - Yes: Go to Step 5.
   - No: Check the wiring.
5. Press EMERGENCY OPERATION switch once.
6. Does AREA-L lamp light up? <Confirmation of the power to the indoor unit>
   - Yes: Go to Step 7.
   - No: Check the wiring.
7. Is serial signal error indicated 6 minutes later?
   - Yes: Correct them.
   - No: Go to Step 8.
8. Turn OFF the power supply.
9. Check once more if the indoor/outdoor connecting wire is not miswiring.
10. Short-circuit outdoor terminal block S2 and S3.
11. Is there amplitude of 10 to 20 VDC between outdoor terminal block S2 and S3? <Confirmation of serial signal>
12. Replace the inverter P.C. board or the outdoor electronic control P.C. board.
13. Replace the indoor/outdoor connecting wire.

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

Miscellaneous:

- Miswiring may damage indoor electronic control P.C. board during the operation. Be sure to confirm the wiring is correct before the operation starts.
- Be careful of the residual voltage of smoothing capacitor.
- Replace the indoor/outdoor connecting wire.
- Reinstall either the unit or the light away from each other.
- Attach a filter on remote control receiving section of the indoor unit.

3. Be sure to check this within 3 minutes after turning ON. After 3 minutes, LED blinks 6 times. Even when the inverter P.C. board or the outdoor electronic control P.C. board is normal, LED blinks 6 times after 3 minutes. (Except for outdoor unit of multi system type)
### E: Check of installation of the horizontal vane

Turn OFF the power supply.

Is the stopper of the horizontal vane locked to the indoor unit correctly?

- No
  - Re-lock the stopper of the horizontal vane to the indoor unit. (Refer to 10-1.5.)
  - Turn ON the power supply.
  - Are all lamps flashing?
    - No
      - OK
    - Yes
      - Turn OFF the power supply.

To check the continuity of the interlock switch (Fan), measure the resistance of connector ① - ② connected to CN1R1 on the indoor electronic control P.C. board.

- Is there resistance 0 Ω?
  - No(∞)
    - Replace the interlock switch (Fan).
  - Yes
    - Replace the indoor electronic control P.C. board.

### F: Check of PLASMA operation

Turn ON the power supply.

Does PLASMA lamp flash 2-time with unit stopping?

- Yes
  - Replace the indoor electronic control P.C. board.
- No
  - High voltage (approx. -4.4 kV) is generated during PLASMA operation.
  - Pay careful attention and never touch PLASMA ELECTRODE UNIT and the high-voltage lead part (red wire).

- While pressing both OPERATION SELECT button and TOO COOL button on the remote controller at the same time, press RESET button.
  - 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 (the set temperature is displayed)
  - And press PLASMA button once with the remote controller headed towards the indoor unit. ※1
  - PLASMA operation is selected.
  - The plasma operation check mode is set. (Refer to 10-2.5.)

Does PLASMA lamp stay OFF, or continuously blink?

- OFF
  - Replace the PLASMA POWER P.C. board.
- Continuously blinking.
  - ※1 Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.

- ※2 Turn PLASMA operation OFF and ON again.
  - (For turning OFF PLASMA operation, refer to 10-2.3.)
  - (If it goes normal without turning OFF and ON, PLASMA lamp does not go OFF.)
**Electromagnetic noise enters into TV sets or radios**

- Is the unit earthed? Yes → Earth the unit.  
  No → Extend the distance between the antennas and the indoor unit, and/or the antennas and the outdoor unit.

- Is the distance between the antennas and the indoor unit within 3 m, or is the distance between the antennas and the outdoor unit within 3 m? Yes → Extend the distance between the antennas and the indoor unit, and/or the antennas and the outdoor unit.  
  No → Extend the distance between the TV sets and/or radios and the indoor unit, or the TV sets or radios and the outdoor unit.

- Are the antennas damaged? Yes → Replace or repair the antenna.  
  No → Replace or repair the coaxial cable.

- Is the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas close? Yes → Extend the distance between the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas.  
  No → 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 electronic control P.C. board.

- **Room temperature thermistor (RT11)**
- **Indoor coil thermistor (RT12, RT13)**
- **Release of Auto restart function**
- **Solder the Jumper wire JR07**
  (Refer to 8-3.)
- **5 VDC**
- **12 VDC**
- **Cement resistor (R111)**
- **Indoor fan motor (CN211)**
- **325 VDC**
- **(+/-) Fiducial terminal of cathode side on measuring high-voltage DC**
- **15 VDC**
- **(+/-)0 or 15 VDC**
- **Interlock switch (Fan) (CN1R1)**
- **Room temperature thermistor RT11 (CN111)**
- **Varistor (NR11)**
- **CN201 (Used for check of conducting of thermal fuse)**
- **Indoor coil thermistor RT12, RT13 (CN112)**
- **Plasma electrode unit (CN1T1)**
- **Horizontal vane (CN1U1)**
- **Vertical vane (CN151)**
- **Timer short mode point JPG, JPS (Refer to 8-1.)**
- **Power supply input 230 VAC**
- **SW P.C. Board Emergency operation switch (SW1)**
- **i-see Sensor (CN110)**
- **Fuse (F11)**
- **Fuse (CN211)**
- **Fuse (CN111)**
- **Fuse (CN1R1)**
- **Fuse (CN1T1)**
- **Fuse (CN1U1)**
- **Fuse (CN151)**
- **Fuse (CN110)**
- **Fuse (CN211)**
- **Fuse (CN111)**
- **Fuse (CN1R1)**
- **Fuse (CN1T1)**
- **Fuse (CN1U1)**
- **Fuse (CN151)**

**Resistance vs. Temperature Chart**

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

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2. Power monitor receiver P.C. board

3. Monitor P.C. board

4. Plasma power P.C. board
<"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.

OPERATING PROCEDURE

1. Removing the panel
   (1) Hold both sides of the front panel and lift the front panel until it is level. Pull the hinges forward to remove the front panel.
   (2) Remove the horizontal vanes.
   (3) Remove the screw caps of the panel. Remove the screws.
   (4) Unhook the lower part (\(\text{A}\)) of the panel.
   (5) Hold the lower part of both ends of the panel and pull it slightly toward you, and then remove the panel by pushing it upward.

PHOTOS

Photo 1

Horizontal vane
Front panel
Screws of the panel
2. Removing the electronic control P.C. board, the power monitor receiver P.C. board, i-see Sensor, SW P.C. board and the terminal block

(1) Remove the panel (refer to 1.) and the corner box.
(2) Remove the screw of the V.A. clamp. Remove the V.A. clamp and the indoor/outdoor connecting wire. (Photo 2)
(3) Remove the sensor holder from the electrical cover. (See Photo 3)
(4) Remove the screw of the electrical cover, and then the electrical cover. (Photo 3)
(5) Remove the earth wire connected to the indoor electronic control P.C. board from the electrical box. (Photo 3)
(6) Remove the power monitor receiver P.C. board holder. (Photo 4)
(7) Pull out the i-see Sensor from the power monitor receiver P.C. board holder.
(8) Install the i-see Sensor in its former position when assembling it. (Photo 5)
(9) Open the rear cover of the power monitor receiver P.C. board holder and pull out the power monitor receiver P.C. board.
(10) Open the sensor holder and pull out the SW P.C. board.
(11) 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.
(12) Pull out the electronic control P.C. board from the electrical box.
(13) Remove the earth wire connected to the heat exchanger from the electrical box. (Photo 3)
(14) Unhook the catches of the electrical box, and pull out the electrical box.
(15) Remove the screw of the terminal block cover, and then the terminal block cover and the terminal block holder. (Photo 2)
(16) Remove the terminal block by sliding it.
3. Removing the electrical box
   (1) Remove the panel (refer to 1.) and the corner box.
   (2) Remove the indoor/outdoor connecting wire, the sensor holder, the electrical cover and the earth wire.
   (Refer to 2.)
   (3) Disconnect the following connectors on the electronic control P.C. board:
       CN211 (Fan motor)
       CN112 (Indoor coil thermistor)
       CN1U1 (Horizontal vane motor)
       CN1S1 (Vertical vane motor)
       CN1R1 (Interlock switch)
       CN1T1 (Plasma power P.C. board)
   (4) Unhook the catches of the electrical box, and pull out the electrical box. (Photo 4)

4. Removing the nozzle assembly
   (1) Remove the panel (refer to 1.) and the corner box.
   (2) Remove the V.A. clamp, and then the indoor/outdoor connecting wire. (Photo 2)
   (3) Remove the sensor holder and the electrical cover. (Photo 3.)
   (4) Disconnect the following connectors on the electronic control P.C. board:
       CN1U1 (Horizontal vane motor)
       CN1S1 (Vertical vane motor)
       CN1R1 (Interlock switch)
   (5) Remove the power monitor receiver P.C. board holder and the plasma power P.C. board holder. (Photo 4)
   (6) Pull out the drain hose from the nozzle assembly and remove the nozzle assembly.
   (7) Remove the interlock switch.

5. Removing the vertical vane motor unit
   (1) Remove the nozzle assembly. (Refer to 4.)
   (2) Remove the crank of the vertical vane motor unit from the arm of the vertical vane.
   (3) Remove the screw of the vertical vane motor unit, and pull the vertical vane motor unit.
   (4) Remove the screws of the vertical vane motor unit cover.
   (5) Remove the crank of the vertical vane motor unit from the shaft of the vane motor.
   (x) Only the crank of the left side vertical vane motor unit. (Photo 7)
   (6) Remove the vertical vane motor from the vertical vane motor unit.
   (7) Disconnect the connector of vertical vane motor from the vertical vane motor.
### OPERATING PROCEDURE

#### 6. Removing the horizontal vane motor
1. Remove the nozzle assembly. (Refer to 4.)
2. Remove the screws of the horizontal vane motor unit, and pull out the horizontal vane motor unit.
3. Remove the screws of the horizontal vane motor unit cover.
4. Remove the horizontal vane motor from the horizontal vane motor unit.
5. Disconnect the connector from the horizontal vane motor.

#### 7. Removing the indoor fan motor and the line flow fan
1. Remove the panel (refer to 1.) and the corner box.
2. Remove the sensor holder, the power monitor receiver P.C. board holder, the electrical box (refer to 3.) and the nozzle assembly (Refer to 4.).
3. Remove the screws fixing the motor bed. (Photo 10)
4. Loosen the screw fixing the line flow fan. (Photo 11)
5. Remove the motor bed together with fan motor and motor band.
7. Remove the indoor coil thermistor from the heat exchanger.
8. Install the indoor coil thermistor (RT12) in its former position when assembling it. (Refer to Photo 13)
9. Remove the screws fixing the left side of the heat exchanger. (Photo 12)
10. Lift the heat exchanger, and pull out the line flow fan to the lower-left.

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### PHOTOS

**Photo 9**
- Screws of the horizontal vane motor unit cover

**Photo 10**
- Screws of the motor bed
- Motor band

**Photo 11**
- Screw of the line flow fan

**Photo 12**
- Screws of the left side of the heat exchanger

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**Photo 13**
- Indoor coil thermistor (RT12)

*MSZ-FD25/35*