Changes for the Better

MITSUBISHI ELECTRIC

AIR PURIFIER

2015

SERVICE MANUAL

No.MAW-E-15010

Model MA-E83H-R1

Sold from 2015

CONTENTS

1. Safety Precautions

Note) This page is extracted from the instruction manual.

Safety Precautions

■ To prevent personal injury, injury to others, or property damage, the following precautions must be observed.

■ The following categories describe hazards caused by mishandling and their levels.

⚠WARNING
Indicates a hazard caused by mishandling that may result in death or serious injury.

⚠CAUTION
Indicates a hazard caused by mishandling that may result in a minor injury or damage to the home and its contents.

■ The meanings of the graphic symbols used in this manual and on the unit are as follows.

Prohibited | Do not touch | Do not disassemble | Do not use near water | Observe instructions

⚠WARNING

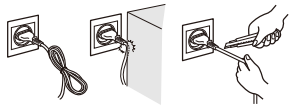
Do not use a damaged power cord and plug, or a loose power outlet.

This may cause electric shock, short circuit, or fire.

This product is not intended for use by the following persons.
- **Child**
- **Person with reduced physical, sensory, or mental capabilities**
- **Person with a lack of experience or knowledge**

Take care that children do not play with the unit.

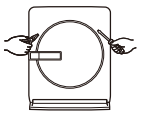
Do not damage the power cord
Do not unnecessarily bend, pull, twist, or bind the power cord, place a heavy object on it, trap it between objects, or modify it.



- If the power cord is damaged, it must be replaced by the manufacturer, its service agents, or a similarly qualified person to avoid hazards.

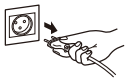
This may cause damage, resulting in fire or electric shock.
(Also take care that a pet does not bite the power cord.)

Do not repair, disassemble, or modify the unit.



This may cause fire or electric shock.
For repairs, contact the retail store where you purchased the product.

When disconnecting the power plug, pull it out straight while holding not the cord but the power plug.

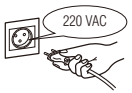


Failure to do so may cause electric shock or a short circuit resulting in fire.

Remove the power plug before cleaning.
Also, do not remove the power plug with a wet hand.

This may cause electric shock or injury.

Use a 220 VAC power outlet.



Using other than a 220 VAC power outlet may cause electric shock, short circuit, or fire.

Remove dust from the power plug regularly.

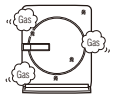
If dust accumulates, humidity, etc. may cause an insulation failure, resulting in fire.

If the unit is operating abnormally or fails, stop using it immediately.
- **The unit does not operate when the operation ON/OFF switch is turned ON.**
- **The unit, power cord, or plug is abnormally hot.**
- **There is an abnormal noise or vibration during operation.**
- **There is a burning smell.**
- **The operating sound is abnormally loud.**
- **Mounting screws are corroded or loose.**
- **The earth leakage circuit breaker trips frequently.**
- **There is another abnormality or failure.**

Failure to do so may cause fire, electric shock, or injury.
Immediately turn OFF the operation ON/OFF switch and disconnect the power plug, and then contact the retail store.

⚠CAUTION

Do not allow flammable gas to be sucked inside or use the unit where flammable gas accumulates.
(Factory, beauty salon, etc.)



This may cause fire.

Do not use the unit in a location with the oily smoke of machine oil or other oil.

This may cause cracking, resulting in electric shock.

Do not install the unit where water may be spilt onto it or where there is a lot of humidity such as in a bathroom.

This may cause electric shock.
Should water or other liquid be spilt onto the unit, stop operation and remove the power plug, and then contact the retail store where you purchased the product.

Do not put a wire, pole, or other foreign object or a finger into an air inlet or outlet or any other opening into the unit.

This may cause electric shock or injury.

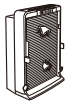
Do not wipe the unit with benzene or thinner or spray insecticide or other chemicals onto it.

This may cause electric shock, fire, or cracking.

Do not lay the unit horizontally when removing a filter.

This may cause dust to enter inside, resulting in fire or electric shock.

Do not use a damaged filter or operate the unit while a filter is removed.



This may cause dust to enter inside, resulting in fire or electric shock.

When using the unit in combination with a combustion appliance, ventilate the room occasionally.

Carbon monoxide cannot be removed from the air, so not ventilating the room may cause carbon monoxide poisoning.

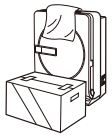
When the unit will not be used for a long time, disconnect the power plug.

Failure to do so may cause the insulation to deteriorate, resulting in fire from a short circuit or an electric shock.

Attentions

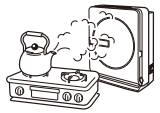
This air purifier is designed for household use. Do not use it for commercial use.

Do not block an air inlet or outlet.



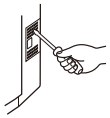
This may cause a malfunction.

Do not use this unit instead of an exhaust fan or exhaust hood (there is no ventilation function).



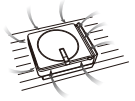
This may cause the filter life to become shorter and cause deformation, discoloration, or malfunction.

Do not insert a finger or foreign object into the pollen/dust sensor.



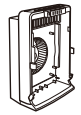
This may cause a malfunction.

Do not use the unit while it is laid horizontally.



This may cause a malfunction.

Do not use the unit while the inlet panel, pre-filter unit, HEPA filter, activated charcoal filter, or nano-structured platinum catalyst is removed.

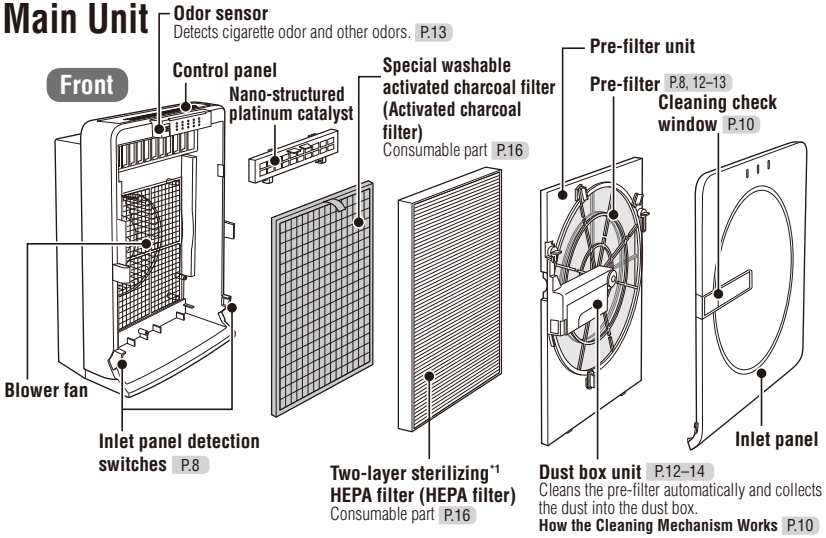


This may cause a malfunction.

Note) This page is extracted from the instruction manual.

Names and Functions of Parts

Main Unit



What is a nano-structured platinum catalyst?

A catalyst that combines platinum, which exhibits high chemical reactivity, with a catalytic substance that has numerous nano-sized pores.
It absorbs and breaks down the sources of various odorants causing complex odors in daily life that are difficult to sense.

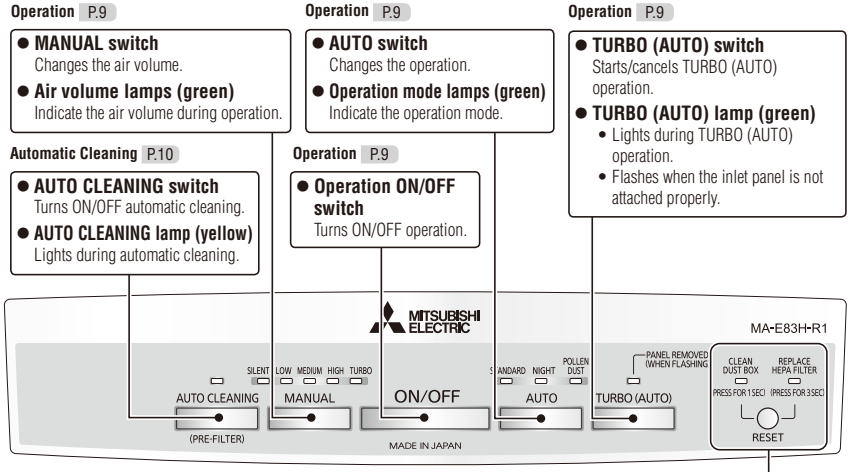
What is a HEPA filter?

<High Efficiency Particulate Air filter>
A highly efficient filter capable of filtering at least 99.97% of particles with a diameter of 0.3 μm (micrometer).

<*1: About sterilization>

Part name	Testing body name	Test method	Test result	Sterilization method	Name of part that performs sterilization process
Two-layer sterilizing HEPA filter	KAKEN Test Center, General Incorporated Foundation	Bacteria liquid absorption method of JIS L 1902	Reduction of at least 99%	Impregnation of sterilization components in filter fiber	Filter fiber

Control Panel



ODOR monitor
The state of air contamination from cigarette odor and other odors is detected by the odor sensor and then indicated.

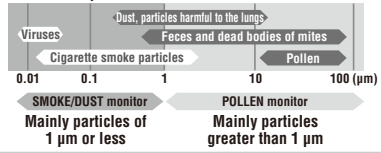
Odor sensor
This semiconducting sensor detects odors and other gases.
It also responds to wind from air conditioners, electric fans, and other appliances, odorless gases, and perfumes.

SMOKE/DUST monitor
The state of contamination from cigarette smoke and other small particles is detected by the pollen/dust sensor and then indicated.

Pollen/dust sensor
This optical sensor detects the number of particles. The monitor indications are divided into "SMOKE/DUST" and "POLLEN" according to the size of the particles.

POLLEN monitor
The state of air contamination from pollen, dead bodies of mites, and other large particles is detected by the pollen/dust sensor and then indicated.

<Size of dirt particles>



Note) This page is extracted from the instruction manual.

Features

Powerful Pollen and Dust Collection

● Support for PM2.5
Catches 99%* of particles from 0.1 to 2.5 µm.

Consideration is not given to new particles entering from outdoors due to, for example, ventilation.

- PM2.5 is a generic term for fine particulate matter of 2.5 µm or less.
- The removal of fine particulate matter less than 0.1 µm with this air purifier has not been verified. Also, this air purifier is not capable of removing all harmful substances from the air.
- This is the effect achieved in a 32-m^3 enclosed space, and is not the result of verification in a space that is in actual use.

* <Test method> Voluntary standard (HD-128) of The Japan Electrical Manufacturers' Association
<Judgment criterion> The time for the removing 99% of the fine particulate matter of 0.1 to 2.5 µm in a 32-m^3 enclosed space is within 90 minutes. (Value is calculated for a 32-m^3 test space.)

● Two-layer Sterilizing HEPA Filter

A two-layer sterilizing HEPA filter with 99.97% efficiency enables this air purifier to reliably catch accumulated pollen and small dust particles. The filter is economical as it has a life of approximately 8 years*. P.16

* This measurement value was obtained in accordance with the standards determined in JEM1467 when six cigarettes a day were smoked. However, the life of the two-layer sterilizing HEPA filter differs depending on the conditions of use.

● Large Air Volume

The maximum air volume of 498 m^3/h facilitates quick suction of a large amount of pollen and dust.

● Reduction of Airborne Viruses*

* This is the effect on airborne viruses achieved after operation for 11 minutes in a test space of a 25 m^3, and is not the result of verification in a space that is in actual use.
MA-E83H-R1 model, MANUAL operation (TURBO) (498 m^3/h)
<Testing body> Virus Research Center, Sendai Medical Center, National Hospital Organization
<Test method> The performance evaluation test of the voluntary standard (HD-124) issued by The Japan Electrical Manufacturers' Association was performed in a 25-m^3 test space.
<Test object> 1 type of airborne virus
<Test result> 99% reduction in 11 minutes

● Cleaning Mechanism

The pre-filter automatic cleaning function reduces deterioration in performance due to clogging with dust. The dust on the pre-filter is collected into the dust box.

● Nano-structured Platinum Catalyst Plus Special Washable Activated Charcoal

Excellent deodorizing is provided by the nano-structured platinum catalyst plus special washable activated charcoal. Soaking and washing the activated charcoal reduces deterioration of the deodorizing performance.

Frequently Asked Questions

What will happen if cleaning is not performed?

If a lot of dust adheres to the HEPA filter, performance may deteriorate remarkably.

Will all cigarette smoke be removed?

The air purifier can remove nicotine and other particles and ammonia, acetaldehyde, and other odors in cigarettes smoke, but the room needs to be ventilated occasionally because carbon monoxide (CO), a harmful substance contained in cigarette smoke, cannot be removed.

Tips on Use

Recommended operations for various situations

Operation P.9

For quick and powerful automatic removal of contamination and odor from the air	**TURBO (AUTO)**	The initial operation is with maximum air volume. After the initial operation, turbo operation is performed automatically depending on the amount of contamination and odor.	When smoking cigarettes, cleaning, and making beds
For automatic removal of contamination and odor from the air	**<AUTO> STANDARD**	This is the standard automatic operation. The air volume is changed automatically depending on the amount of contamination and odor.	
For automatic removal of pollen, house dust, etc.	**<AUTO> POLLEN/DUST**	The sensitivity of the pollen/dust sensor is increased so that the air volume is changed automatically in response to even a slight amount of pollen and dust.	
For quiet operation	**<AUTO> NIGHT**	Operation is performed automatically with low air volume.	When sleeping or a baby is in the room
	<MANUAL> SILENT	Operation is performed continuously with low air volume.	
For continuous operation	**<MANUAL> SILENT/LOW/MEDIUM/ HIGH/TURBO**	Operation is performed continuously with a constant air volume. When "TURBO" is set, operation is performed continuously with the maximum air volume.	

4. Product Specifications

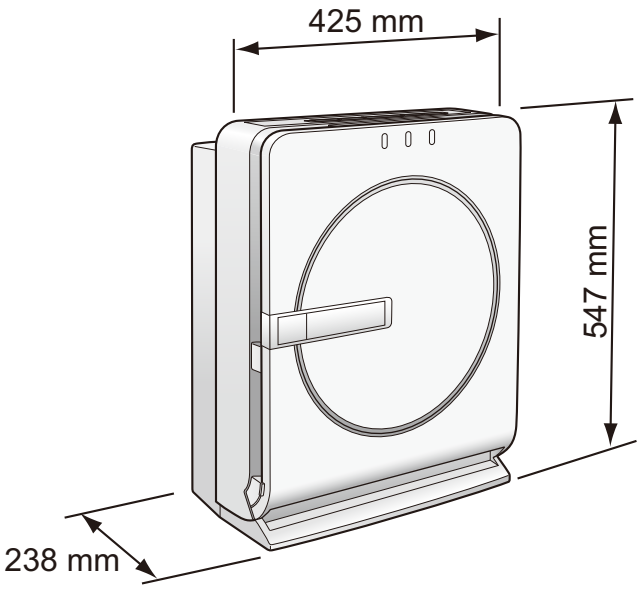
Note) This page is extracted from the instruction manual.

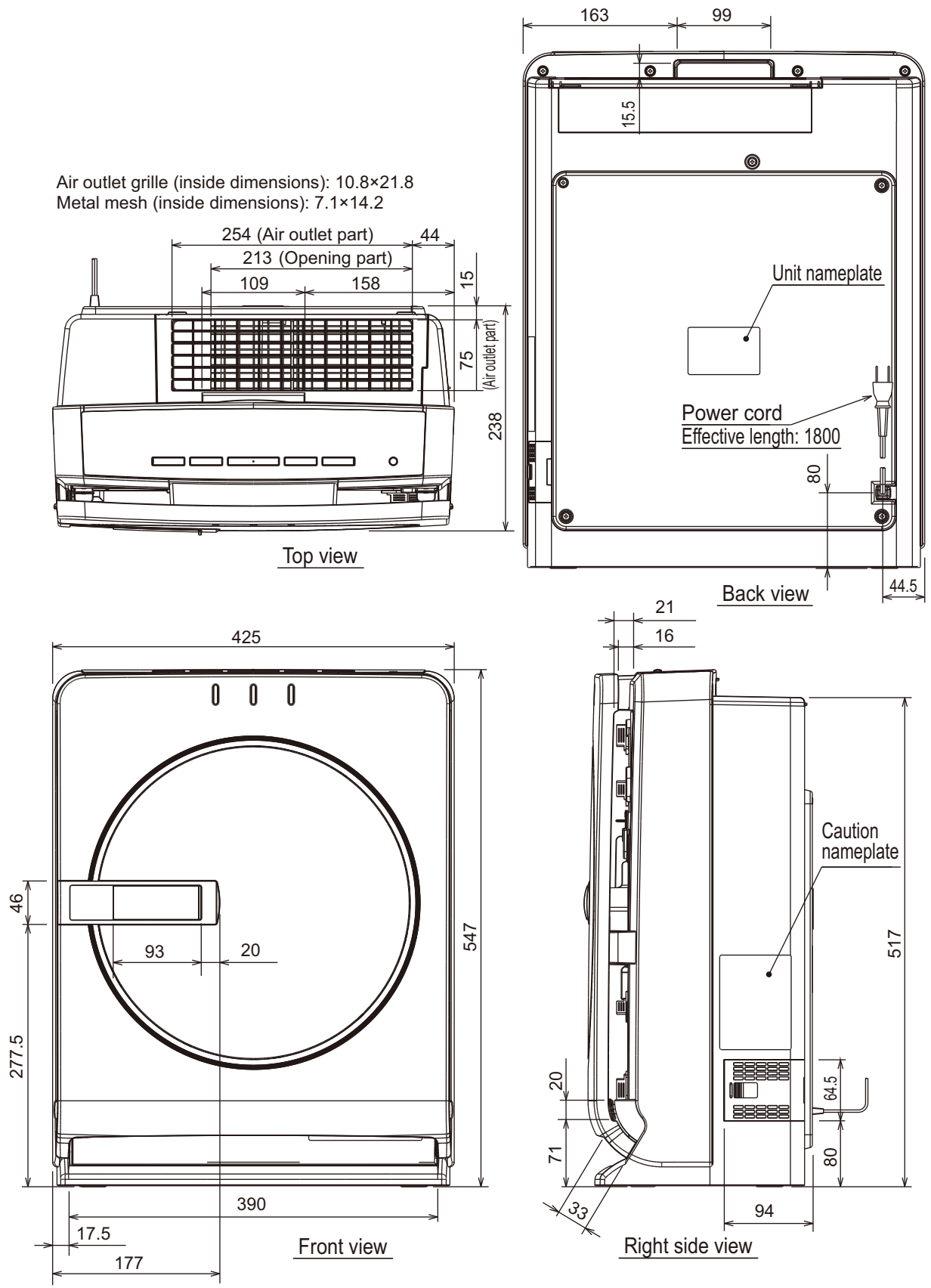
Specifications

Model	MA-E83H-R1				
Power supply	220 VAC, 50 Hz				
Power consumption in standby*1	1 W				
Manual operation	TURBO	HIGH	MEDIUM	LOW	SILENT
Power consumption	72 W	21 W	10 W	7 W	5 W
Air volume	498 m^3/h	306 m^3/h	204 m^3/h	150 m^3/h	102 m^3/h
Noise level*2	52 dB	41 dB	32 dB	25 dB	19 dB
Applicable floor area (rough guide)*3	Up to 63 m^2				
Weight	9.5 kg				
Dimensions	547 (H) × 425 (W) × 238 (D) mm				
Cord length	1.8 m				
Country of origin	Japan				
Manufacturer	MITSUBISHI ELECTRIC CORPORATION 2-7-3, Marunouchi, Chiyoda-ku, Tokyo 100-8310, Japan				
Factory producer	MITSUBISHI ELECTRIC HOME APPLIANCE CO.,LTD. 1728-1, Omaeda, Fukaya City, Saitama 369-1295, Japan				

*1 Power consumption in standby is the power consumption when the power plug is inserted and operation ON/OFF switch is set to OFF.
*2 Noise level is the average value measured at a distance of 1 m from the unit.
*3 The value of the applicable floor area is based on JEM1467.

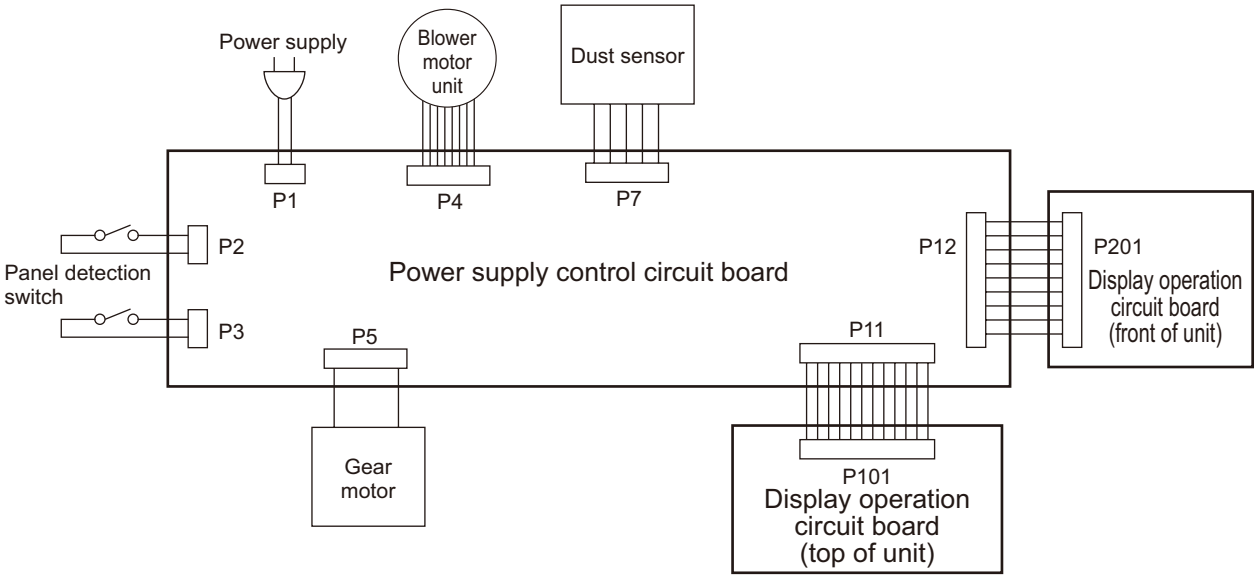
5. External Dimensions




Air outlet grille (inside dimensions): 10.8×21.8
Metal mesh (inside dimensions): 7.1×14.2
254 (Air outlet part)
44
213 (Opening part)
109
158
15
75
(Air outlet part)
238
Top view
163
99
15.5
Unit nameplate
Power cord
Effective length: 1800
80
44.5
Back view
425
46
93
20
547
277.5
390
17.5
177
Front view
21
16
Caution
nameplate
517
20
71
64.5
80
33
94
Right side view

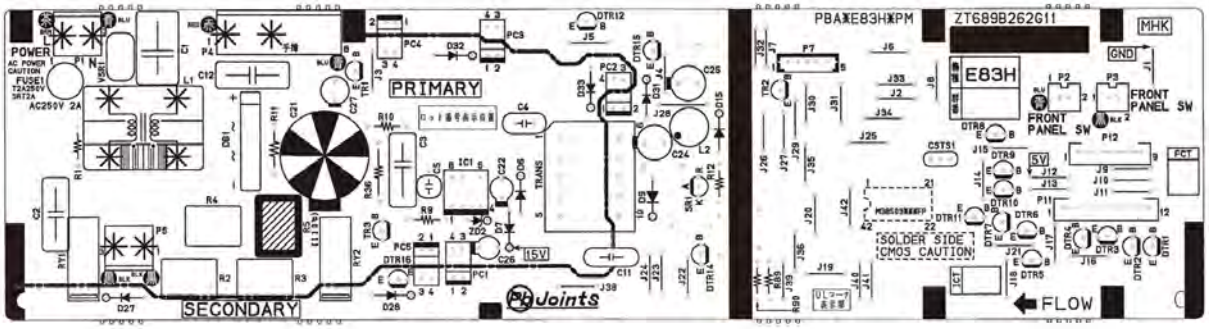
6. Electrical Wiring Diagram

(1) Wiring Diagram

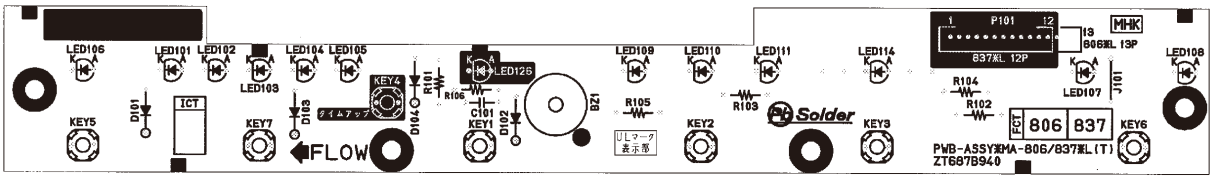


(2) Circuit Board Diagrams

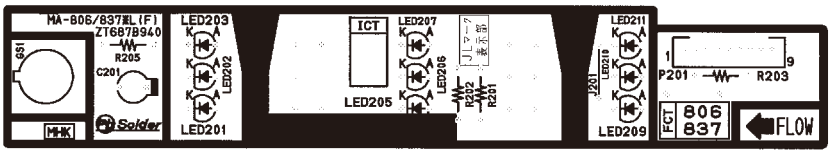
■ Power supply control circuit board



■ Display operation circuit board (top)



■ Display operation circuit board (front)



7. Control Outline

(1) Function Operation List

●: Lights, ◎: Flashes, ○: Lights depending on the condition, ×: Not operable

		Lamps													Switches						Blower fan rank
		AUTO operation modes			MANUAL operation modes					TURBO (AUTO)	Triple clean monitors	AUTO CLEANING	CLEAN DUST BOX	REPLACE HEPA FILTER	ON/OFF	AUTO	MANUAL	TURBO (AUTO)	AUTO CLEANING	RESET	
		STANDARD	NIGHT	POLLEN/DUST	SILENT	LOW	MEDIUM	HIGH	TURBO												
AUTO operation modes	STANDARD	●									●	○	○	○							2–5
	NIGHT		●								●	○	○	○							1–3
	POLLEN/DUST			●							●	○	○	○							3–6
MANUAL operation modes	SILENT				●						●	○	○	○							1
	LOW					●					●	○	○	○							3
	MEDIUM						●				●	○	○	○							4
	HIGH							●			●	○	○	○							6
	TURBO								●		●	○	○	○							7
TURBO (AUTO)										●	●	①	○	○							7 → (2–7)
AUTO CLEANING		Any one of lamps is ●									●	●	○	○							1
PANEL REMOVED										◎						×	×	×	×		Stopped
Operation OFF																×	×	×	×		Stopped

①: The AUTO CLEANING lamp operation based on the accumulated operation time is in standby during the initial operation of TURBO (AUTO) mode (fan rank: 7).

<Lamp Indication>

(1) Operation mode lamps (SILENT, LOW, MEDIUM, HIGH, TURBO, STANDARD, NIGHT, and POLLEN/DUST)
- Operation mode is indicated.
- One lamp is lit during operation.
- The lamp lit by default is the STANDARD lamp (AUTO operation).
- When the time runs out, the error details are indicated by the automatic operation lamps (STANDARD, NIGHT, and POLLEN/DUST).

(2) CLEAN DUST BOX lamp
- The lamp is lit when the number of times pre-filter automatic cleaning is performed exceeds the set value.

(3) REPLACE HEPA FILTER lamp
- The lamp is lit when the operation time reaches the set value (approx. 8 years for SILENT operation and approx. 1.6 years for TURBO operation).

(4) Triple clean monitors (green/yellow/orange)
- The lamps are lit in accordance with the state of odor, smoke/dust, and pollen contamination.
- One green lamp is always lit.

(5) TURBO (AUTO) lamp
- The lamp is lit during TURBO (AUTO) operation.
- The lamp flashes when the inlet panel is not attached properly.

(6) AUTO CLEANING lamp
- The lamp is lit during pre-filter cleaning.

(2) Fan Control

■ Rank for Rotation Speed

① The fan rotation speed for each fan rank is controlled as follows.
② EEPROM holds the rotation speed data and pulse initial value.

Fan rank	1	2	3	4	5	6	7
Rotation speed (rpm)	300	340	385	480	550	657	975
Air volume (m^3/min)	1.7	2.0	2.5	3.4	4.0	5.1	8.3

(3) Operation Control

■ AUTO operation (STANDARD, NIGHT, and POLLEN/DUST), TURBO (AUTO) operation

① STANDARD
- The air purifier responds uniformly to odor, smoke/dust, and pollen contamination.

② NIGHT
- A fan rank lower than the STANDARD blower fan rank is set because priority is given to silent operation.
- The LED dynamic lighting time is set to 1/2 and the brightness of each lamp is restricted.

③ POLLEN/DUST
- The air purifier responds with high sensitivity to pollen.
- The lower limit of blower fan rank is set to 3 so that pollen does not accumulate on the floor.

④ TURBO (AUTO)
- The air purifier responds uniformly to odor, smoke/dust, and pollen contamination.
- Initially, operation is with the maximum air volume. After that, the blower fan rank is set automatically depending on the amount of contamination and odor.

■ MANUAL operation (SILENT, LOW, MEDIUM, HIGH, and TURBO)

Operation is performed continuously at the selected blower fan rank.

(4) REPLACE HEPA FILTER Lamp (Total Operation Time)

The blower fan operation time is counted and the lamp lights when the total time reaches approx. 8 years in the case of the SILENT operation.

Operation mode	Air volume (m^3/h)	Period (year)	Replacement timing (hour)
TURBO	498	Approx. 1.6 year	14,016
SILENT	102	Approx. 8 years	70,080

(5) Pre-filter Automatic Cleaning ON/OFF Setting

Setting procedure: When operation is turned OFF, press the AUTO switch while pressing the TURBO (AUTO) switch and AUTO CLEANING switch.

- When the automatic cleaning is switched from OFF to ON
  ① The buzzer makes a “blip” sound once.
  ② The cleaning mechanism inside the main unit cleans the pre-filter automatically.

- When the automatic cleaning is switched from ON to OFF
  ① The buzzer makes a “blip blip” sound twice.
  ② The cleaning mechanism inside the main unit does not clean the pre-filter automatically.

(6) Hotel Mode

① Hotel Mode Specifications

1. Main power link

   The last operation is remembered when the power is turned OFF and operation is performed in the remembered operation mode when the power is turned back ON.
   Example: The last set operation mode is remembered so if STANDARD is set and then the power is turned OFF, the unit will automatically begin the STANDARD operation next time.

2. The REPLACE HEPA FILTER lamp does not light.
3. The CLEAN DUST BOX lamp does not light.

② How to Check Whether It is Time for Dust Box Cleaning and Filter Replacement

Press the RESET button once.

If it is time for dust box cleaning or filter replacement, the corresponding LED lights for 5 seconds.
If no LED lights when you press the RESET button, it is not time for cleaning or replacement.
CAUTION: Pressing the RESET button for two or more seconds will clear the accumulated times.

③ How to Set Hotel Mode and Normal Mode

1. Insert the power cord plug into the power outlet.
2. When operation is OFF, press the RESET button 10 times within 10 seconds.

- When the mode is switched from normal mode to hotel mode
  ① The buzzer makes a “bleep” sound once.
  ② All the ODOR monitor lamps and SMOKE/DUST monitor lamps light.

- When the mode is switched from hotel mode to normal mode
  ① The buzzer makes a “blip blip” sound once.
  ② All operation mode lamps light.

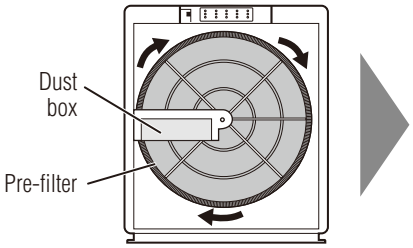
* The set mode is retained even if the plug is removed from the power outlet.

8. Technical Points

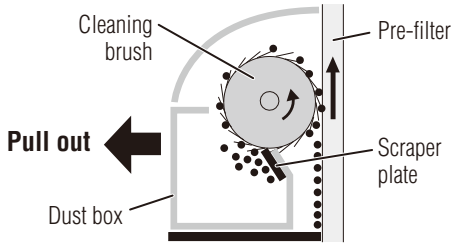
Cleaning mechanism

How the Cleaning Mechanism Works

The pre-filter rotates and passes through the dust box



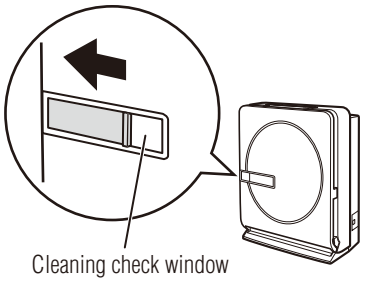
The dirt on the pre-filter is collected with the cleaning brush and accumulates on the scraper plate.



The dust accumulated on the scraper plate may gather together into a long belt-like shape that does not drop into the dust box. If the dust on the pre-filter is removed, the cleaning mechanism is working properly.

Cleaning Check Window

You can check the operation of the cleaning mechanism and the state of accumulated dust by opening and looking though the cleaning check window.



Nano-structured platinum catalyst

A catalyst that combines platinum, which exhibits high chemical reactivity, with a catalytic substance that has numerous nano-sized pores.
It absorbs and breaks down the sources of various odorants causing complex odors in daily life that are difficult to sense.

HEPA filter

<High Efficiency Particulate Air filter>
A highly efficient filter capable of filtering at least 99.97% of particles with a diameter of 0.3 μm (micrometer).

9. Installation Procedures

Note) This page is extracted from the instruction manual.

Points to Note

● Before Installation

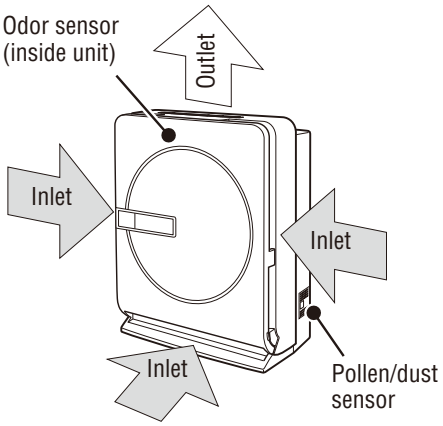
The positions of the air inlets, outlet, pollen/dust sensor, and odor sensor are as shown in the diagram on the right. Observe the following points.

Do not block an inlet or outlet by placing an object near it.
→ The air purification function will deteriorate.

Do not block the odor sensor.
→ Odor will become unable to be detected.

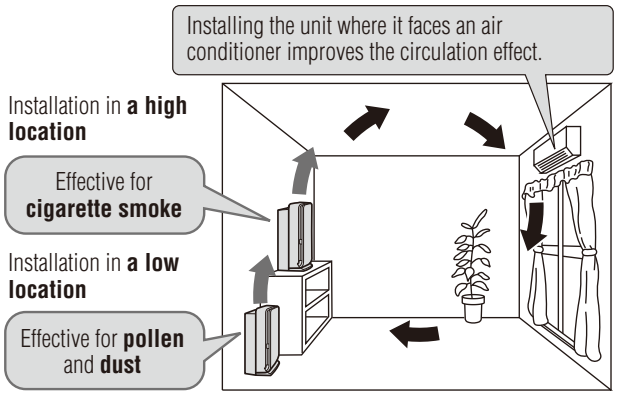
Do not block the pollen/dust sensor.
→ Contamination will become unable to be detected.

This air purifier is a floor-standing type. It cannot be used mounted to a wall.



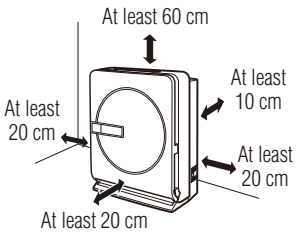
● Installation Procedure

● Install the unit in a location with good air circulation.



● Leave space around the unit.

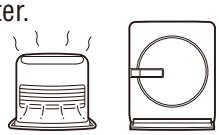
If the unit is placed on a surface that is not flat or stable (on carpet, tatami, etc.), it may vibrate.



● Observe the following when installing the unit.

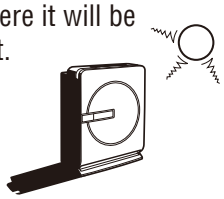
Do not place the unit near or on anything that is hot such as a heater.

This may cause malfunction, deformation, or discoloration.



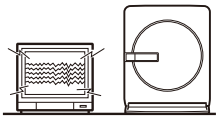
Do not place the unit where it will be subject to direct sunlight.

This may cause deformation or discoloration.



Ensure that there is a distance of at least 1 m from a TV, cordless telephone, air conditioner, personal computer, fluorescent light fitting, etc.

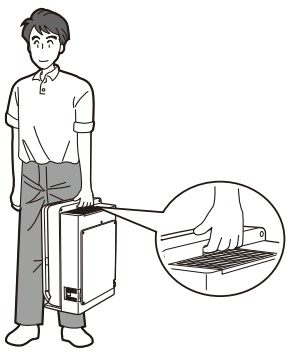
Failure to do so may result in electromagnetic waves interfering with the other equipment.



● When Moving the Unit

Turn OFF the operation ON/OFF switch and disconnect the power plug, and then move the unit while holding it by the handle.

If the unit is moved or tilted while it is operating, sound may be emitted from the blower fan.



10. Precautions for Troubleshooting

The following precautions should be observed in order to perform troubleshooting safely and correctly.
The following categories describe hazards caused by mishandling and their levels.

⚠ **WARNING**	**Mishandling may result in fatal or serious injury, or fire.**
⚠ **CAUTION**	**Mishandling may result in injuries or damage to your home or property, etc.**

Meanings of graphic symbols are explained below.

Forbidden	**Always follow the instructions**	**Alert**

⚠ WARNING

Remove the power plug from the outlet.

Failure to do so may cause electric shock and/or injuries.

When performing work with the power on, be careful not to touch the live part.

This may cause electric shock.

Do not touch a rotating object until it completely stops.

The rotating object may catch your hand, etc., and result in injuries.

Do not work with wet hands.

This may cause electric shock.

Check the wiring diagram before wiring processing.

Failure to do so may cause ignition, generation of smoke, and/or malfunction.

After the work, lay the wire out as it was before.

Failure to do so may cause ignition, generation of smoke, and/or malfunction.

⚠ CAUTION

Wear protective gloves.

Failure to do so may result in injuries by the edge of metal, electric shock, and/or burns caused by contact with hot section.

Keep children away.

Failure to do so may cause electric shock and/or injuries when moving the product or using a measuring device.

11. Troubleshooting Procedures

(1) Symptoms and Remedies

<table>
<tr><th>Symptom</th><th>Check Item</th><th>Remedy</th></tr>
<tr><td>1. Blower fan (motor) does not rotate (power does not turn ON).</td><td>
Is an operation mode lamp or air volume lamp lit when you turn ON the operation ON/OFF switch?
Not lit → Check that the inlet panel is attached properly.
Not lit → Check the connections of the inlet panel detection switches.
Not lit → Check the continuity of the current fuse.
Not lit → Check the connection cables and connectors of the display operation circuit board and power supply control circuit board.
Lit → Check the output voltage of power supply control circuit board connector P4 within 45 seconds of turning ON the power. If 141 VDC is not output normally between pins 1 and 4, 15 VDC is not output normally between pins 6 and 4, and 1 to 6 VDC (pulse) is not output normally between pins 7 and 4, replace the power supply control circuit board. If the voltages are output normally, replace the blower motor (pin 4 is GND).

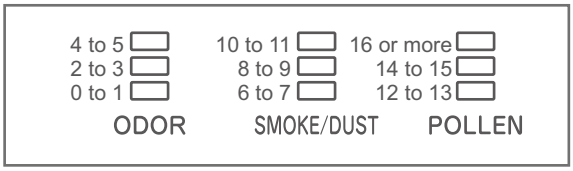
• How to determine whether the DC motor has a malfunction
The following table shows the values for a normal motor that was measured with a multimeter.
The motor has a malfunction if any value is very different from the normal value.
Measurement method (pin number of P4 connector)
<table>
<tr><th>Tester + terminal</th><th>Tester - terminal</th><th>Tester measurement mode</th><th>Normal value</th><th>Malfunction diagnosis</th></tr>
<tr><td>Pin 1 (red)</td><td>Pin 4</td><td>Resistance</td><td>Infinity</td><td>Motor internal circuit breakdown</td></tr>
<tr><td>Pin 6 (white)</td><td>Pin 4</td><td>Resistance</td><td>10s of kΩ</td><td>Motor internal circuit breakdown</td></tr>
<tr><td>Pin 7 (yellow)</td><td>Pin 4</td><td>Resistance</td><td>10s of kΩ</td><td>Motor internal circuit breakdown</td></tr>
<tr><td>Pin 8 (blue)</td><td>Pin 4</td><td>Resistance</td><td>Infinity</td><td>Motor internal circuit breakdown</td></tr>
<tr><td>Pin 4 (black)</td><td>Pin 1</td><td>Diode</td><td>0.5 to 2 V</td><td>Motor internal circuit breakdown</td></tr>
<tr><td>Any pin</td><td>Outer casing of motor</td><td>Resistance</td><td>Infinity</td><td>Motor insulation breakdown</td></tr>
</table>
The above is the diagnostic method for when the motor is isolated.
Regardless of the rotation state, do not test the motor when the connectors are connected.
</td></tr>
<tr><td>2. Dust is not collected (air volume is low).</td><td>
Is the pre-filter clogged with dust?
→ Remove the dust (clean the pre-filter and HEPA filter).
→ Replace the HEPA filter with a new one.
</td></tr>
<tr><td>3. Deodorizing is not performed (deodorizing performance is low).</td><td>
Is the REPLACE HEPA FILTER lamp lit?
Not lit → Soak and wash the activated carbon filter.
Lit → Replace the activated carbon filter with a new one.
</td></tr>
<tr><td>4. The odor monitor does not work.</td><td>
Place perfume, hair tonic, alcohol for disinfection, or the like in front of the unit and check the response. Was there no response?
YES → Replace the odor sensor.
* Response will be slow immediately after the operation ON/OFF switch is turned ON because the odor sensor is performing the preparation operation. Perform operation for about 5 minutes and then perform the check.
</td></tr>
<tr><td>5. Smoke/dust monitor and pollen monitor do not work.</td><td>
Rub tissue paper near the unit and check the response. Was there no response?
YES → Replace the dust sensor.
</td></tr>
</table>

(2) Test Modes

■ Error Detection Mode

① Starting.....Simultaneously press the MANUAL switch and TURBO (AUTO) switch three times and then turn ON the operation ON/OFF switch.

② Details of operation .....
- Switches to TURBO operation.
- Skips the timer operation for the ODOR and SMOKE/DUST monitors.
- Rotates the blower fan at maximum speed for 3 minutes and then returns it to normal rotation speed after 3 minutes elapse.
- Operates the self-diagnosis function (displays an error if there is an error).
- Stops the fan in the event of an error occurring.
- Performs the pre-filter automatic cleaning operation continuously.
- Displays the micro dust count value (updates the value every 10 seconds) on the triple clean monitors.



List of errors displayed in error detection mode

Error details	Error display lamps	
Dust sensor connection error	The STANDARD and NIGHT lamps light.	Triple clean monitors flash.
Fan lock error (no rotation signal)	The SILENT, LOW, MEDIUM, HIGH, and TURBO lamps light.	
Gas sensor broken wire or short circuit error	The STANDARD and POLLEN/DUST lamps light.	
EEPROM data error (FF)	The CLEAN DUST BOX and REPLACE HEPA FILTER lamps light.	
EEPROM error (malfunction, 00)	The STANDARD, SILENT, and TURBO lamps light.	
Rotation speed error (rotation speed is not achieved)	The STANDARD, NIGHT, and POLLEN/DUST lamps light.	

③ Canceling .....Turn OFF the operation ON/OFF switch.

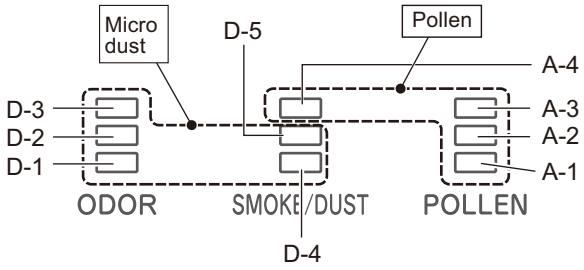
■ Pollen and Dust Count Mode

① Starting.....Simultaneously press the MANUAL switch and TURBO (AUTO) switch five times and then turn ON the operation ON/OFF switch.

② Details of operation .....
- Indicates the pollen count value as a binary number on the triple clean monitors (1 to 15).
- Indicates the micro dust count value as a binary number on the triple clean monitors (1 to 31).

③ Canceling .....Turn OFF the operation ON/OFF switch.

Example of binary number display (the lit lamps indicate the count value)



[Example] Pollen: 5 (binary 0101 = 05h)

○	●	○	●
A-4	A-3	A-2	A-1

Smoke/dust: 15 (binary 01111 = 0Fh)

○	●	●	●	●
D-5	D-4	D-3	D-2	D-1

■ Demo Mode

① Starting.....Simultaneously press the operation ON/OFF switch and AUTO CLEANING switch for 5 seconds.

② Details of operation .....
- Lights triple clean monitor lamps (in an up-down pattern)
- Performs the pre-filter automatic cleaning operation constantly.
- Does not operate the blower motor.
- Turns OFF the operation ON/OFF switch after 5 minutes.

③ Canceling .....
- Turn OFF the operation ON/OFF switch.
- Wait for operation to turn off after 5 minutes.

Note) This page is extracted from the instruction manual.

Troubleshooting

Symptom	Cause and Remedy
The air purifier does not operate.	● Has the power plug become disconnected? → Firmly insert the power plug into the power outlet. P.9 ● Is an air volume lamp or operation mode lamp lit? (Is the operation ON/OFF switch is ON?) → Turn ON the operation ON/OFF switch. P.9
The TURBO (AUTO) lamp is flashing.	● Are the filters and inlet panel securely attached? → Attach them properly. P.8 ● Are the pre-filter unit and dust box unit securely attached? → Attach the pre-filter unit and dust box unit properly. P.12–13
The bottom of the inlet panel cannot be attached.	● Is the tab (1 place) on the dust box unit inserted in the hole properly? → Attach the dust box unit properly. P.12–13
The main unit vibrates a lot.	● Did you install the main unit on a surface that is not flat or stable? → Install the main unit on a table or other surface that is flat and stable. P.3
Odor and smoke are difficult to remove.	● Is the pre-filter dirty? → Clean the pre-filter. P.12–13 ● Are the filters dirty? → Replace the filters. P.16 ● Is there dust on the sensors? → Clean the sensors. P.13–14
The operation noise and vibration have increased.	● Are you operating the air purifier with “TURBO” or “HIGH” manual operation or TURBO (AUTO) operation? → The sound is louder for operation with a high air volume. If the sound bothers you, select an operation mode with a low air volume. P.9 ● Is the pre-filter dirty? → Clean the pre-filter. P.12–13 ● Are the filters dirty? → Replace the filters. P.16 ● Is the activated charcoal filter installed in the main unit still inside the plastic bag? → Take it out of its plastic bag and then attach it again. P.8
During automatic cleaning: A clattering sound is heard.	● Is the dust box unit attached to the pre-filter unit properly? → Attach the dust box unit properly. P.13
During automatic cleaning: A buzzing sound has become loud.	● A buzzing sound is emitted during the cleaning of the pre-filter because the motor is running. If a lot of dust adheres to the cleaning brush, the buzzing noise may become loud. → When the noise bothers you, perform cleaning. P.12–13
The main unit makes a sound when being moved.	● Are you moving the air purifier while it is operating? → If the main unit is suddenly moved or tilted, sound may be emitted. P.3

Troubleshooting (Cont.)

Symptom	Cause and Remedy
When looked through the air outlet during operation, the blower fan is vibrating.	● This is not a problem as long as there is no abnormal noise or abnormal vibration.
When the power plug is disconnected, sometimes a bleep or buzzing sound can be heard.	● Did you disconnect the power plug while the operation ON/OFF switch is ON? → Turn OFF the operation ON/OFF switch before disconnecting the power plug.
Triple clean monitors: The monitor indications are slow to change.	● Is the room too large? → Use the air purifier in a room within the applicable floor area range (up to 63 m²). ● If there is a lot of dust and odor, the air may take a while to become clean. <How to check monitor operation> ● Rub tissue paper near the pollen/dust sensor so as to create dust. ● Place perfume, hair tonic, or the like on tissue paper and then place the tissue paper in front of the main unit so that the fragrance is sucked into it.
Triple clean monitors: The monitors respond very infrequently.	● Is there dust on the sensors? → Clean the sensors. P.13–14 ● Response will be slow for a few minutes after the operation ON/OFF switch is turned ON because the odor sensor is performing the preparation operation. P.9
Triple clean monitors: The monitor indication does not change despite the existence of an odor.	● The monitor indication may not change sometimes because the sensitivity of the sensor differs depending on the components of the odor.
Triple clean monitors: The monitor responds even though the air in the room is clean.	● The monitor may sometimes respond to the wind from an air conditioner in the room or gas that is difficult for a human nose to sense. P.7 ● Is there dust floating in the air? If there is even a small amount of dust floating in the air, the monitor may respond. → Check the air quality information.
The REPLACE HEPA FILTER lamp is lit.	● It is time to replace the HEPA filter and activated charcoal filter. → Replace the HEPA filter and activated charcoal filter. P.16
The CLEAN DUST BOX lamp is lit.	● It is time to clean the dust box. → Clean the dust box. P.14
The dust on the pre-filter cannot be removed. (The pre-filter does not rotate.)	● Is the dust box attached properly? → Attach the dust box properly. P.14 ● Are the pre-filter unit and dust box unit securely attached? → Attach the pre-filter unit and dust box unit properly. P.8 P.12–13
The pre-filter is dirty.	● The cleaning mechanism is a function for removing dust on the pre-filter. Cigarette tar and minute dust particles will not be removed. → If such dirt bothers you, wash the pre-filter in water. P.12–13

- If the symptoms persist even after trying the remedies above, stop using the air purifier and disconnect the power plug, and then contact the retail store where you purchased the product.
- If the supply cord is damaged, it must be replaced by the manufacturer, its services agent or similar qualified persons in order to avoid a hazard.

Note) This page is extracted from the instruction manual.

Automatic Cleaning (Pre-filter)

A cleaning mechanism inside the main unit cleans the pre-filter automatically.

The pre-filter is not cleaned automatically in the following cases.

Automatic cleaning is not performed while the CLEAN DUST BOX lamp is lit.
Empty the dust box and then reset it. P.14

- When the operation ON/OFF switch is turned OFF
  →Cleaning is performed for approximately 1 minute 20 seconds (one rotation of the pre-filter)

- The AUTO CLEANING lamp lights up.
- The air volume switches to "LOW" and automatic cleaning starts.
- When automatic cleaning ends, operation ends.
- The AUTO CLEANING lamp goes out.

To stop automatic cleaning part way through the process, press the AUTO CLEANING switch.

- When the AUTO CLEANING switch is pressed while the operation ON/OFF switch is ON
  →Cleaning is performed for approximately 1 minute 20 seconds (one rotation of the pre-filter)

- The AUTO CLEANING lamp lights up.
- The air volume switches to "LOW" and automatic cleaning starts.
- When automatic cleaning ends, operation resumes in the previous operation mode.
- The AUTO CLEANING lamp goes out.

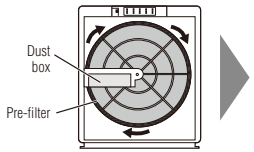
To stop automatic cleaning part way through the process, press the AUTO CLEANING switch. Alternatively, press the TURBO (AUTO) switch, AUTO switch, or MANUAL switch.

- When the total operation time exceeds a certain time while the operation ON/OFF switch is ON
  Approximately 24 hours for "TURBO" operation and approximately 192 hours for "SILENT" operation
  →Cleaning is performed for approximately 2 minute 40 seconds (two rotations of the pre-filter)

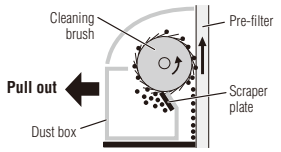
- **Dust is collected into the dust box.**
  If the CLEAN DUST BOX lamp lights up, empty the dust box. P.14
  - The CLEAN DUST BOX lamp only serves as a rough guide.
    The amount of dust that collects into the dust box will differ depending on the operating environment.
    When the air purifier is used in a place with a lot of dust and other dirt, check the dust box and empty it often.
- **Cigarette tar and minute dust particles adhered to the pre-filter will not be removed.**
  If such dirt bothers you, wash the pre-filter in water. P.12
- **When the cleaning brush becomes dirty, removal of dirt from the pre-filter will become difficult.**
  Clean the cleaning brush if it is dirty. P.12

How the Cleaning Mechanism Works

The pre-filter rotates and passes through the dust box



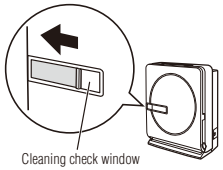
The dirt on the pre-filter is collected with the cleaning brush and accumulates on the scraper plate.



The dust accumulated on the scraper plate may gather together into a long belt-like shape that does not drop into the dust box. If the dust on the pre-filter is removed, the cleaning mechanism is working properly.

Cleaning Check Window

You can check the operation of the cleaning mechanism and the state of accumulated dust by opening and looking though the cleaning check window.



Cleaning

To maintain the performance, perform cleaning regularly.

Timing and Parts to Clean

When dirty	● Main unit P.11 ● HEPA filter, pre-filter, and dust box unit P.12–13
Approximately once a month	● Sensors (odor sensor and pollen/dust sensor) P.13
When the CLEAN DUST BOX lamp lights up Approximately once every four months	● Dust box P.14
Approximately once every six months	● Lens of pollen/dust sensor P.14
When there is an odor coming out of the air outlet	● Nano-structured platinum catalyst and activated charcoal filter P.15

Turn OFF the operation ON/OFF switch, disconnect the power plug, and check that the blower fan is stopped before cleaning.

Do not use non-neutral detergent, scouring powder, chemically-treated cleaning cloth, gasoline, benzene, thinner, etc. This may damage the main unit.

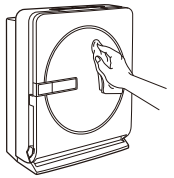
⚠WARNING

Before cleaning, stop operation and disconnect the power plug.
Failure to do so may cause electric shock or injury.

When Dirty

Main unit

Wipe with a soft cloth.



When the unit is very dirty, wipe it with a damp cloth.

Note) This page is extracted from the instruction manual.

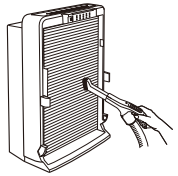
When Dirty

HEPA filter, pre-filter, and dust box unit

1 Remove the inlet panel, empty the dust box P.14**, and remove the pre-filter unit** P.8**.**

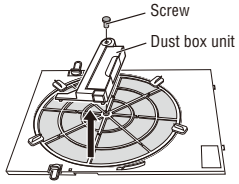
2 Clean the HEPA filter.

Suck up the dust with a vacuum cleaner using a nozzle with a brush.

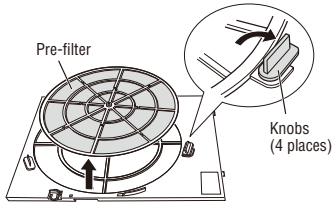


3 Remove the dust box unit and pre-filter.

①Turn the screw and then remove the dust box unit.



②Turn the knobs (4 places) and remove the pre-filter.



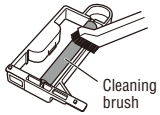
4 Wash the pre-filter in water and then allow it to dry sufficiently in the shade.

- Wash with a soft sponge or the like.
- When the filter is very dirty, wash it with neutral detergent and then rinse it in water.

Do not use a brush or the like.
This may damage the pre-filter.

5 Clean the cleaning brush.

Suck up the dust with a vacuum cleaner using a nozzle with a brush
(if the dust is difficult to remove, remove it with adhesive tape or the like).

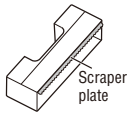


When the cleaning brush is very dirty, wash it with neutral detergent, rinse it in water, and then allow it to dry sufficiently.

- Do not remove the cleaning brush.
- Do not use other than a neutral detergent.
  This may damage the cleaning brush.

6 Remove any dirt adhered to the dust box and then attach the dust box to the dust box unit.

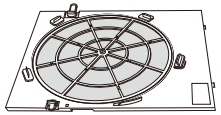
When the dust box is very dirty, wash it with neutral detergent and then rinse it in water.



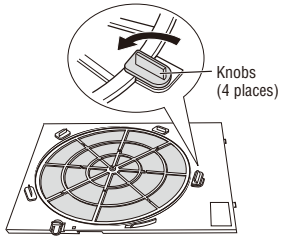
Be careful not to injure yourself with the scraper plate.

7 Attach the pre-filter and dust box unit.

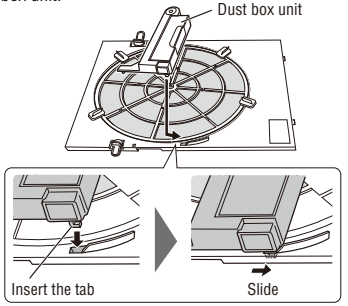
①Attach the pre-filter.



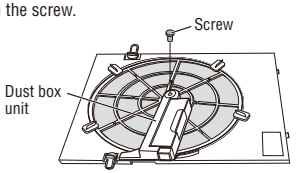
②Turn the knobs (4 places) to the lock position.



③Insert the tab (1 place) on the dust box unit into the hole in pre-filter unit and then slide the dust box unit.



④Tighten the screw.



If the dust box unit is not attached properly, the inlet panel cannot be attached. Also, an abnormal (clattering) sound may be heard.

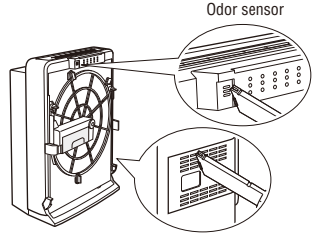
8 Attach the pre-filter unit and inlet panel to the main unit. P.8

Approximately Once a Month

Sensors
(Odor sensor and pollen/dust sensor)

1 Remove the inlet panel. P.8

2 Suck up the dust with a vacuum cleaner using a nozzle.



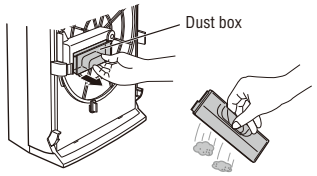
3 Attach the inlet panel to the main unit. P.8

When the CLEAN DUST BOX Lamp Lights Up or Approximately Once Every Four Months

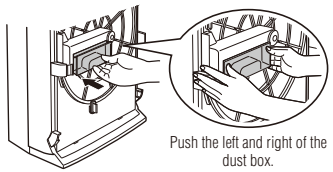
Dust box

1 **Remove the inlet panel.** P.8

2 **Pull out the dust box and then empty it.**



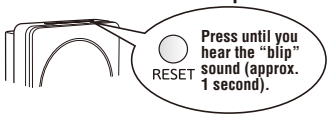
3 **Attach the dust box.**



If it is not attached properly, the removal of dust will become difficult.

4 **Attach the inlet panel to the main unit.** P.8

5 **Insert the power plug and then reset the CLEAN DUST BOX lamp.**



- **The CLEAN DUST BOX lamp goes out. (The lamp is reset.)**
  If the inlet panel is not attached, the lamp cannot be reset.

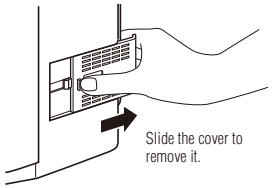
NOTE

When you hear the "blip" sound, remove your finger from the RESET button. If you keep the button pressed, you will hear a "blip blip" sound and the filter replacement timing will also be reset. P.16

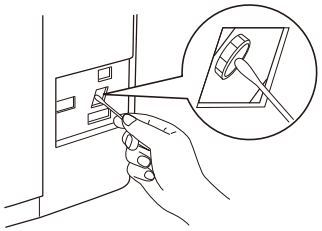
Approximately Once Every Six Months

Lens of pollen/dust sensor

1 **Remove the cover of the pollen/dust sensor.**

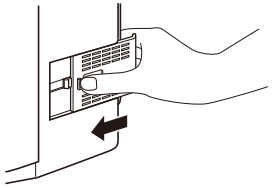


2 **Clean the lens with a dry cotton swab.**



Do not use water, alcohol, detergent, etc.
This may cause a malfunction.

3 **Attach the cover of the pollen/dust sensor.**



When There is an Odor Coming Out of the Air Outlet

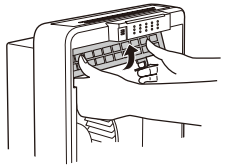
Nano-structured platinum catalyst and activated charcoal filter

1 **Remove the inlet panel, pre-filter unit, and HEPA filter.** P.8

2 **Remove the activate charcoal filter.** P.8

3 **Remove the nano-structured platinum catalyst.**

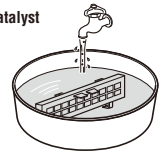
Hook your fingers around the handles at the bottom of the nano-structured platinum catalyst and then pull the catalyst out toward you to remove it.



4 **Soak and wash the nano-structured platinum catalyst and activated charcoal filter.**

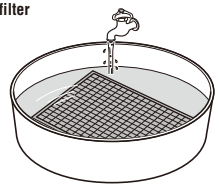
- **Nano-structured platinum catalyst**

Soak in cold or lukewarm water for approximately one hour and then wash in water.



- **Activated charcoal filter**

Soak in cold or lukewarm water for approximately one hour and then wash in water.



Do not use detergent. Also, do not scrub it.
This may cause the nano-structured platinum catalyst and activated charcoal filter to become damaged.

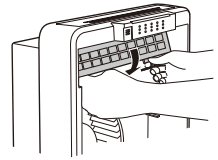
5 **Allow the nano-structured platinum catalyst and activated charcoal filter to dry.**

Allow them to dry properly in a well-ventilated place in the shade for approximately six hours (the drying time differs depending on the season and climate).

- Do not use them while they are still wet.
  Water drops may be blown from the air outlet and an odor may be created.
- The air purifier can be operated without the nano-structured platinum catalyst and activated charcoal filter attached but the deodorizing effect will be reduced.
- Soaking and washing will not completely restore the deodorizing performance of the activated charcoal filter. Replace this filter when the time for replacement is reached.

6 **Attach the nano-structured platinum catalyst to the main unit.**

Hook the top of the nano-structured platinum catalyst and then push in the bottom.



7 **Attach the activated charcoal filter to the main unit.** P.8

8 **Attach the HEPA filter, pre-filter unit, and inlet panel to the main unit.** P.8

Note) This page is extracted from the instruction manual.

Replacement of Filters and Disposal

Replace the filters with new ones when the time for replacement is reached.

Replacing the HEPA filter and activated charcoal filter

Rough guide on replacement timing

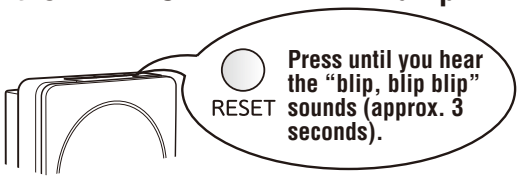
- When the REPLACE HEPA FILTER lamp lights up
  The lamp lights up after approximately 8 years with "SILENT" operation and approximately 1.6 years with "TURBO" operation.
  The durability of the filters has been determined to be 8 years in accordance with the JEM1467 standard of the Japan Electrical Manufacturers' Association. (When six cigarettes a day are smoked)
- When the HEPA filter becomes very dirty and omits bad odors
- When odors cannot be removed from the activated charcoal filter after soaking and washing it

Turn OFF the operation ON/OFF switch, disconnect the power plug, and check that the blower fan is stopped before replacing filters.

1 Empty the dust box. P.14

2 Remove the HEPA filter and activated charcoal filter and then install new ones. P.8

3 Insert the power plug and then reset the REPLACE HEPA FILTER lamp.



- The REPLACE HEPA FILTER lamp goes out. (The lamp is reset.)
  If the inlet panel is not attached, the lamp cannot be reset.

- **The life of the HEPA filter and activated charcoal filter differs depending on operating environment and conditions of use.**
- When replacing the HEPA filter, also replace the activated charcoal filter at the same time.
- The HEPA filter cannot be reused even if it is washed. When it becomes dirty, be sure to replace it with a new one.
- In the following cases, odors may adhere to the HEPA filter and main unit. Clean the main unit and replace the HEPA filter.
  - When a lot of cigarettes are smoked
  - When there are a lot of odors in the room

Disposal

Dispose of the filters and main unit in accordance with the local regulations on disposal.

- **HEPA filter**
  Materials: PP (polypropylene), rayon, and PET (polyethylene terephthalate)
- **Activated charcoal filter**
  Materials: Activated charcoal, PET (polyethylene terephthalate), and PS (polystyrene)
- **Main unit**
  Dispose of the main unit in accordance with the local regulations on disposal without disassembling it.

Consumable parts

- **Replacement filter set**
  - Two-layer sterilizing HEPA filter
  - Special washable activated charcoal filter
    - Model MAPR-863HFT
    - Model code 5D4 106

Purchase from the retail store where you purchased the product.

When you wish to purchase a filter separately

When only one of the filters is dirty or damaged or odor cannot be removed from it

- **Replacement two-layer sterilizing HEPA filter**
  - Service part number M25 410 349
- **Replacement special washable activated charcoal filter**
  - Service part number M25 277 349

Purchase from the retail store where you purchased the product.

*The sales channels differ so the price of just one filter is relatively high.

14. Service Inspection List

(1) Check List after Completing Repairs

After completing repairs, check the following items to confirm that no further repairs are required.

	Check item	Checked
Checks during repairs	Were appropriate tools used?	
	Were parts listed in the parts catalog used?	
	Are wiring routes, connections, and clamping correct?	
	No wiring problems, such as pinching, damage, or intermediate connections?	
	No power cable problems, such as deterioration, damage, or intermediate connections?	
	No looseness or damage in the power plug?	
	Are all connectors and metal terminals fully inserted?	
	No abnormal motor noise?	
	If electrical components were replaced, is the insulation performance checked?	
	Are the crimped connectors fully inserted, with no gaps?	
	Are cushions and silicon-coated parts present and properly coated?	
	Were designated screws listed in the parts catalog used?	
	Were all the washers and packing correctly installed?	
	Was waterproofing or rustproofing treatment performed where required?	
Installation	Installed horizontally?	
	Installed in a stable location? (No danger of tipping.)	
	Installed on a strong floor? (No depressions or corrosion in floor.)	
	Sufficient surrounding space? (Not too close to walls, ceiling, or curtains.)	
	Not subject to direct sunlight or installed near heat radiators?	
	No installation in special operating environment? (Location where chemical is used or subject to significant dust and dirt.)	
	If the unit has an earth, is the earth correctly connected? (Do not earth to water or gas pipes.)	
	Installed in compliance with other standards in the instruction manual or installation manual?	
Operation checks	Does the power turn ON?	
	Do basic operations function as described in the instruction manual?	
	Do opening/closing parts, rotating parts, and sliding parts all operate normally?	
	No abnormal noise or smell?	
	Does the power turn OFF?	
Explanations after repairs	Adequate explanations of the details of repairs, inspections, and adjustments	
	Instructions to carefully read the instruction manual	
	Warning not to disassemble the product	
	Appropriate explanations if installed location is inappropriate and of methods for efficient use	

15. Precations for Disassembly and Reassembly

The following precautions should be observed in order to perform disassembly and reassembly safely and correctly.
The following categories describe hazards caused by mishandling and their levels.

⚠ **WARNING**	**Mishandling may result in fatal or serious injury, or fire.**
⚠ **CAUTION**	**Mishandling may result in injuries or damage to your home or property, etc.**

Meanings of graphic symbols are explained below.

Forbidden	**Always follow the instructions**	**Alert**

⚠ WARNING

Remove the power plug from the outlet.

Failure to do so may cause electric shock and/or injuries.

When replacing parts, use the specified parts listed on the parts catalog.

Failure to do so may cause ignition, generation of smoke, and/or malfunction.

Do not touch a rotating object until it completely stops.

The rotating object may catch your hand, etc., and result in injuries.

Do not work with wet hands.

This may cause electric shock.

Check the wiring diagram before wiring processing.

Failure to do so may cause ignition, generation of smoke, and/or malfunction.

After the work, lay the wire out as it was before.

Failure to do so may cause ignition, generation of smoke, and/or malfunction.

Do not alter the product.

This may cause fire, electric shock, and/or injuries.

Comply with the law.

Follow the applicable laws and regulations, such as “Fire Prevention Ordinance” and “Electric Equipment Technical Standards”.

Failure to do so may cause fire and/or electric shock.

Use appropriate tools.

Failure to do so may result in an accident caused by contact failure or loose parts.

Earth the product which requires earthing correctly.

Incomplete earthing or connection to a gas pipe, water pipe, etc. may cause an explosion, ignition, and/or electric shock.

Do not damage or process the power cord or lead wire.

This may cause fire, heat generation, and/or electric shock.

Replace the damaged or deteriorated power cord or lead wire.

Failure to do so may cause fire, heat generation, and/or electric shock.

⚠ CAUTION

Wear protective gloves.

Failure to do so may result in injuries by the edge of metal, electric shock, and/or burns caused by contact with hot section.

Wear gloves

Keep children away.

Failure to do so may cause electric shock and/or injuries when moving the product or using a measuring device.

Keep away

Do not install the product in the place where it may burn.

This may cause fire and/or ignition.

Do not install

Check the firmness of installation location.

Failure to do so may cause an accident and/or injuries due to the turnover of the product.

Check

Perform operation check after reassembly.

Failure to do so may cause an accident and/or malfunction.

Operation check

Do not wash the product with water.

This may result in fire, ignition, and/or malfunction.

No water

Inspection and Service Safety Precautions

1. Before performing disassembly work, be sure to remove the plug from the power outlet.
2. If a circuit must be inspected while energized, be sufficiently careful not to touch the live parts.
3. When using tools for repairs, use appropriate tools.
4. When using parts for repairs, be sure to use the parts specified in the part catalog for the corresponding model.
5. When making repairs, check the power cord and lead wires for deterioration and replace them if they are damaged or have deteriorated.

16. Disassembly and Reassembly

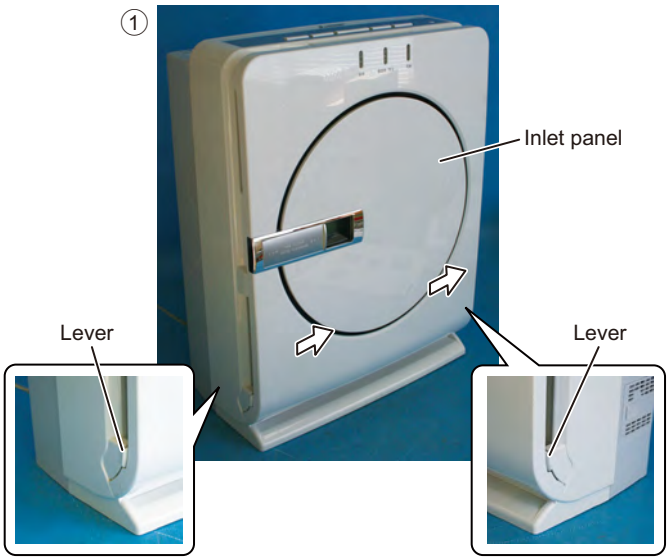
(1) Removing the Inlet Panel and Pre-filter

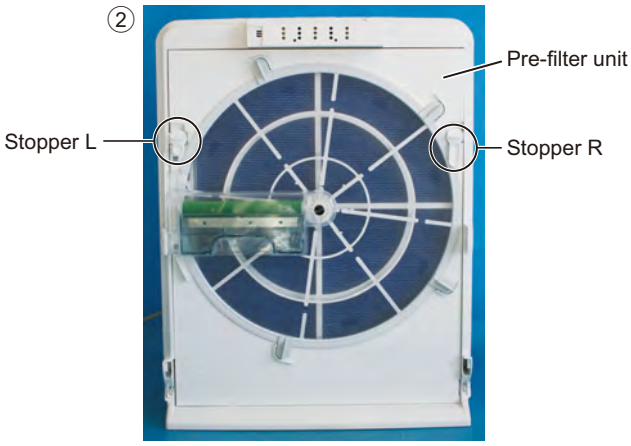
① Pull the inlet panel toward you while pressing the left and right levers at the bottom. Move the inlet panel upward and then unhook it from the clips at the top. → (Removing the Inlet Panel)

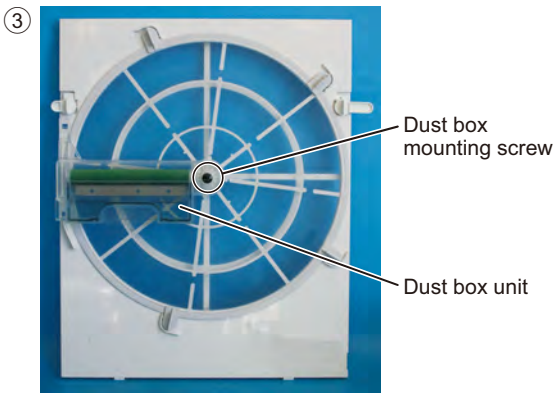
② Turn the left and right stoppers (L and R) of the pre-filter unit and then remove the pre-filter unit.

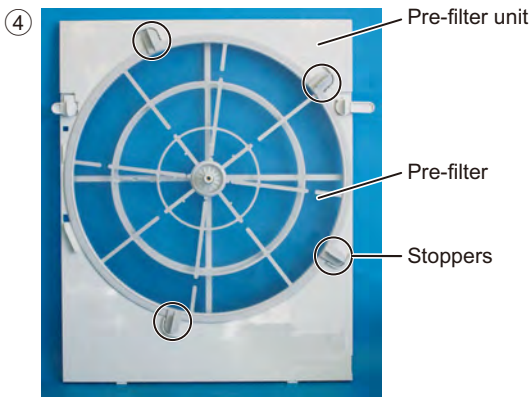
③ Remove the dust box mounting screw and then remove the dust box unit while sliding it upward.

④ Remove the four stoppers of the pre-filter unit and then remove the pre-filter. → (Removing the Pre-filter)









(2) Removing and Replacing the HEPA Filter, Activated Carbon Filter, and Nano-structured Platinum Catalyst

① Remove the inlet panel and pre-filter. → (See “(1) Removing the Inlet Panel and Pre-filter”.)

② Hook your fingers around the top and remove the HEPA filter. → (Removing and Replacing the HEPA Filter)

③ Remove the activated carbon filter. → (Removing and Replacing the Activated Carbon Filter)

④ Hook your fingers around the handles at the bottom of the nano-structured platinum catalyst and then pull the catalyst out toward you to remove it. → (Removing and Replacing the Nano-structured Platinum Catalyst)

②

③

④

(3) Removing the Rear Cover and Rear Case

① Remove the inlet panel and pre-filter.
→ (See “(1) Removing the Inlet Panel and Pre-filter”.)

② Remove the HEPA Filter, activated carbon filter, and nano-structured platinum catalyst.
→ (See “(2) Removing and Replacing the HEPA Filter, Activated Carbon Filter, and Nano-structured Platinum Catalyst”.)

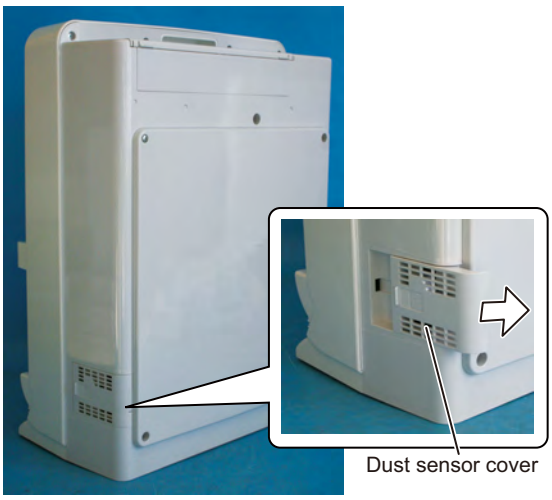
③ Slide the dust sensor cover while pressing it to remove it.

④ Remove the four rear cover mounting screws, disengage the five clips, and remove the rear cover. → (Removing the Rear Cover)

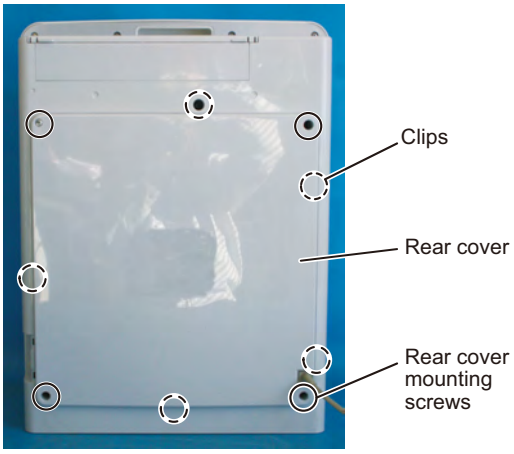
⑤ Remove the power cord bush from the rear case, open the cover, and disconnect connectors P1 and P4.

⑥ Remove the six rear case mounting screws and then remove the rear case.
→ (Removing the Rear Case)

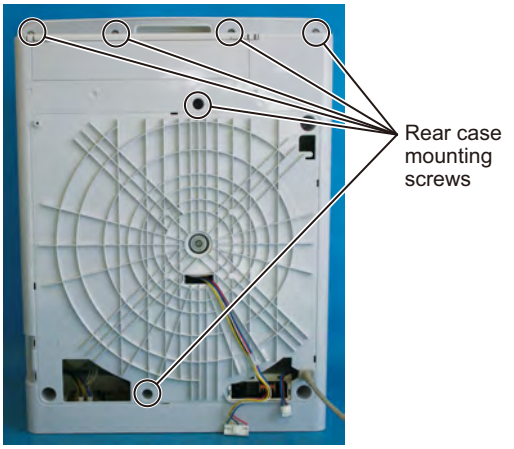
③



④

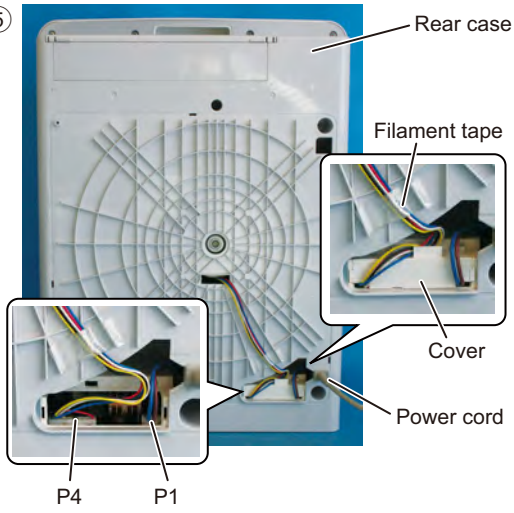


⑥

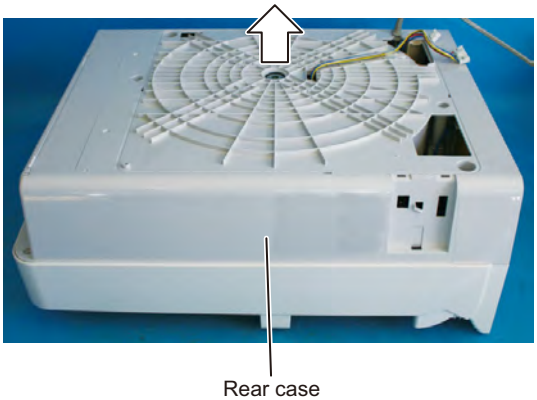


* Secure the lead wires of the blower motor to the rear case with filament tape to prevent them from moving.

⑤



⑥

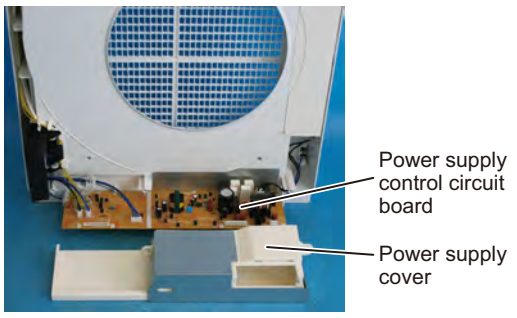


(4) Removing and Replacing the Power Supply Circuit Board

① Remove the rear cover and rear case.
→ (See “(3) Removing the Rear Cover and Rear Case”.)

② Remove the power supply cover while sliding it toward you and then disconnect connectors P1, P2, P3, P4, P5, P7, P11, and P12.

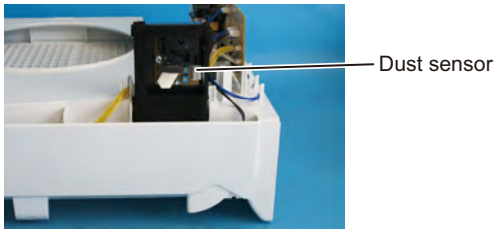
③ Pull out the power supply control circuit board.
→ (Removing and Replacing the Power Supply Circuit Board)



(5) Removing and Replacing the Dust Sensor

① Remove the power supply control circuit board. → (See “(4) Removing and Replacing the Power Supply Circuit Board”.)

② Lift up the dust sensor together with its case.
→ (Removing and Replacing the Dust Sensor)



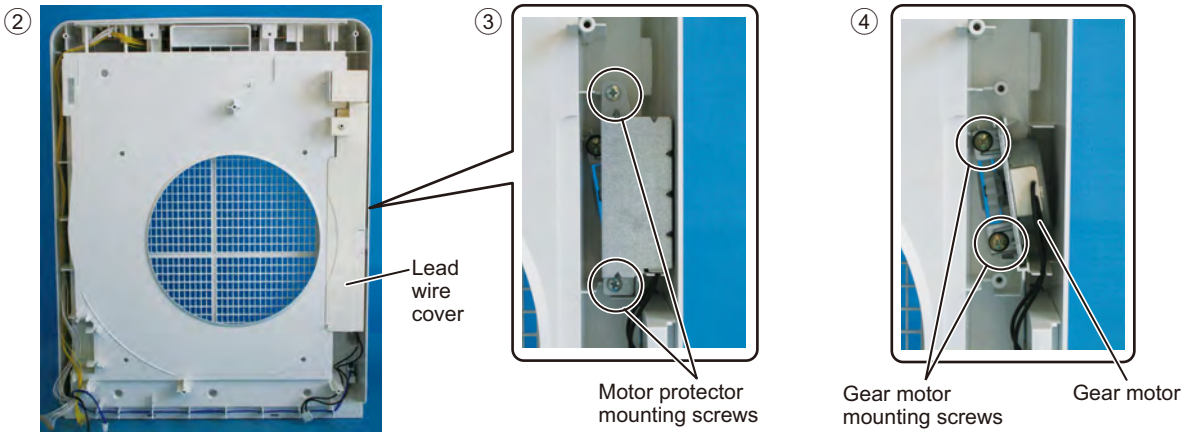
(6) Removing and Replacing the Gear Motor

① Remove the power supply control circuit board. → (See “(4) Removing and Replacing the Power Supply Circuit Board”.)

② Remove the lead wire cover.

③ Remove the two motor protector mounting screws.

④ Remove the two gear motor mounting screws and then remove the gear motor.
→ (Removing and Replacing the Gear Motor)



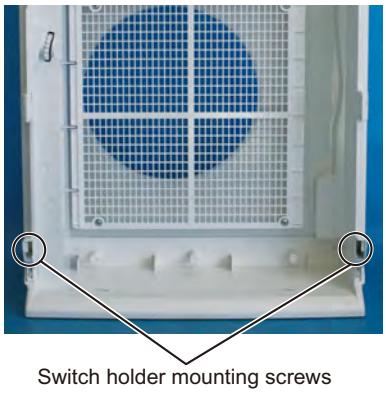
(7) Removing and Replacing the Panel Detection Switches

① Remove the power supply control circuit board. → (See "(4) Removing and Replacing the Power Supply Circuit Board".)

② Remove the switch holder mounting screws (one screw on each of the left and right).

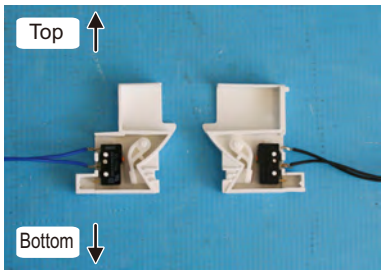
③ Pull out the switch holders and panel detection switches from the case. → (Removing and Replacing the Panel Detection Switches)

②



Switch holder mounting screws

③



* Take care that the top and bottom are correctly oriented at the time of reassembly.

(8) Removing and Replacing the Display Operation Circuit Board

① Remove the power supply control circuit board. → (See "(4) Removing and Replacing the Power Supply Circuit Board".)

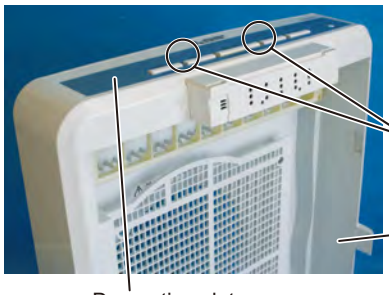
② Take off the decorative plate.

③ Remove the two decorative plate mounting screws and pull up the decorative plate to remove it from the front case.

④ Remove the four display operation circuit board mounting screws and then remove the display operation circuit board. → (Removing and Replacing the Display Operation Circuit Board)

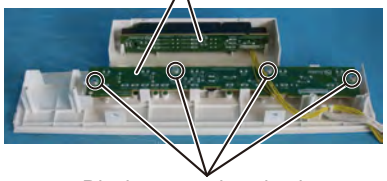
CAUTION: If you take off the decorative plate, be sure to replace it with a new one.

②
③



Display operation circuit board

④



Display operation circuit board mounting screws

(9) Removing and Replacing the Fan and Blower Motor

① Remove the power supply control circuit board. → (See “(4) Removing and Replacing the Power Supply Circuit Board”.)

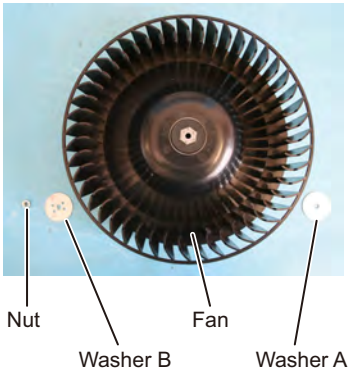
② Remove the nut and washer B and then remove the fan and washer A.
→ (Removing and Replacing the Fan)

③ Remove the four motor holder mounting screws and then remove the motor holder.

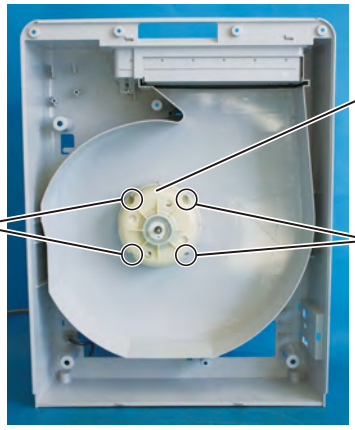
④ Remove the blower motor while paying attention to the lead wires.
→ (Removing and Replacing the Blower Motor)

②

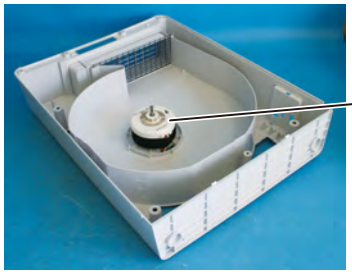
②



③



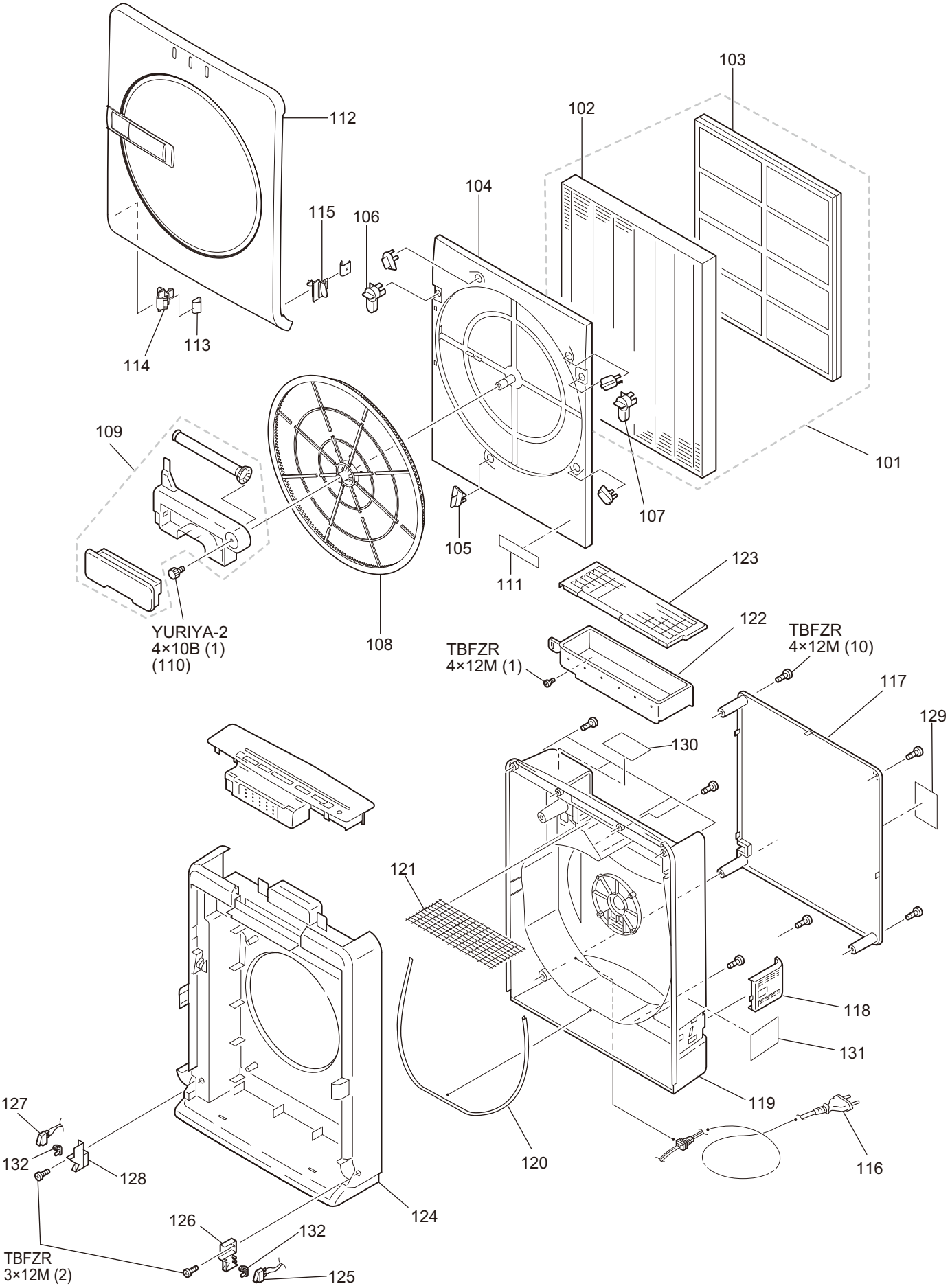
④



* Take care that the blower motor is not tilted at the time of reassembly. (The fan and case may come into contact with each other.)

17. Parts Catalog

MA-E83H-R1 Model Structural Disassembly Diagram (1)



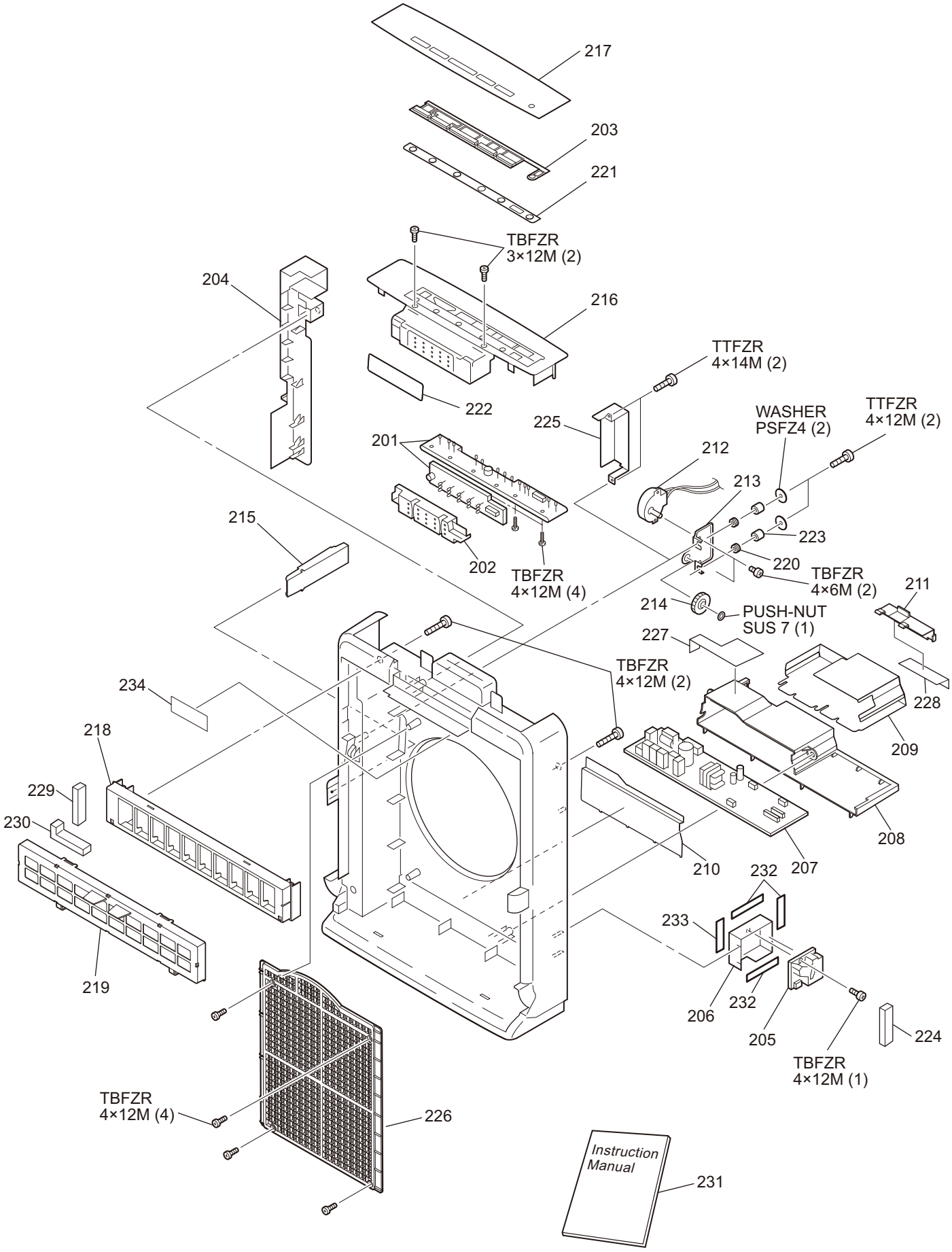
MA-E83H-R1 Model Parts List (1)

Notes:
1. Circled reference numbers indicate performance parts.
2. (New) parts are the newly-adopted parts for this model.
3. Those parts that are marked by ⚠ and ▭ are of critical importance for sustaining safety and performance.
   Use specified parts at replacement.
4. When ordering parts without part numbers, use the design number. The order may take a while to process.

Exploded View Matching No.	Part Name	Part No.	Safety Part	Pc/1 unit	Compatibility Miscellaneous	Design Number
101	FILTER*ASSY-E863	M48 5D4 106		1	(New)	T946T056G51
102	AIR-FILTER-HEPA*E83H	M25 410 349		1	(New) Expendable item	T349A193H61
103	FILTER-AC*838	M25 277 349		1	Expendable item E83H-C	T349A192H01
104	FRAME-PRE*ASSY*83D	M25 277 300		1	E83H-C	T300Q036G31
105	STOPPER(805)	M25 258 202		4	805	T202C318H03
106	STOPPER-R*838	M25 274 202		1	838	T202D429H02
107	STOPPER-L*805	M25 258 202L		1	E80E-TW	T202D428H01
108	PRE-FILTER*ASSY(838)	M25 274 349P		1	838	T349A172G21
109	DUST-BOX*ASSY(83H)	M25 282 310D		1	E83H-C	T310B919G71
110	SCW-YURIYA-2 4X10B	M25 258 830		1	E83H-C	T029P830H30
111	ESCUTCHEON-PRE*E83-R	M25 410 460P		1	(New)	T460C473H01
112	PANEL-ASSY*E83H-R1	M25 410 440P		1	(New) Includes knobs and springs, Black	T440Q040G52
113	SPRING-KNOB-PANEL83H	M25 282 129		2	E83H-C	T129D241G31
114	KNOB-PANEL*L-837	M25 267 170		1	837	T170D357H01
115	KNOB-PANEL*R-837	M25 267 170R		1	E83H-C	T170D358H01
(116)	PLUG-CORD*E83H-R1	M25 410 695	⚠	1	(New)	T695C228H01
117	COVER-B*(805)	M25 258 320		1	805	T320B783H04
118	LID-DUST*90H	M25 408 330L		1	BK90H	T330C450G21
119	CASE-R*83	M25 408 310R		1	E83H-C	T310Q287G11
120	PACKING-CASING(DX)	M25 281 055CP		3	E83H-C	T055D160H01
(121)	NET*806	M25 261 349N	⚠	1	806	T349C485H11
122	LOUVER-ASSY*83H	M25 282 405		1	Includes a louver sheet E83H-C	T405B150G41
123	GUARD-LOUVER*805	M25 258 360		1	805	T360B192H01
124	CASE-F(90H)	M25 408 310		1	BK90H	T310Q288H51
(125)	MS-ASSY-R(E83H)	M25 408 501R	⚠	1	E83H-C	T501C033G11
126	HOLDER-MS-R*90H	M25 408 261R		1	E83H-C	T261C690H21
(127)	MS-ASSY-L(E83H)	M25 408 501L	⚠	1	BK90H	T501C033G01
128	HOLDER-MS-L*90H	M25 408 261L		1	E83H-C	T261C689H21
129	NAME-PLATE*E83H-R1	M25 410 450		1	(New)	T450D790G01
130	ESCUTCHEON-PL*E83H-R	M25 410 460PL		1	(New)	T460D633H01
131	ESCUTCHEON-DS*E83H-R	M25 410 460		1	(New)	T460D631H01
132	LEVER-MS*805	M25 258 116		2	E83H-C	T116D293H01

*1. If the part is out of production, you may be required to use a common part.
*2. Parts found installed in products may have a different part number from service parts.
   However, there should be no difference in performance and can be installed.

MA-E83H-R1 Model Structural Disassembly Diagram (2)



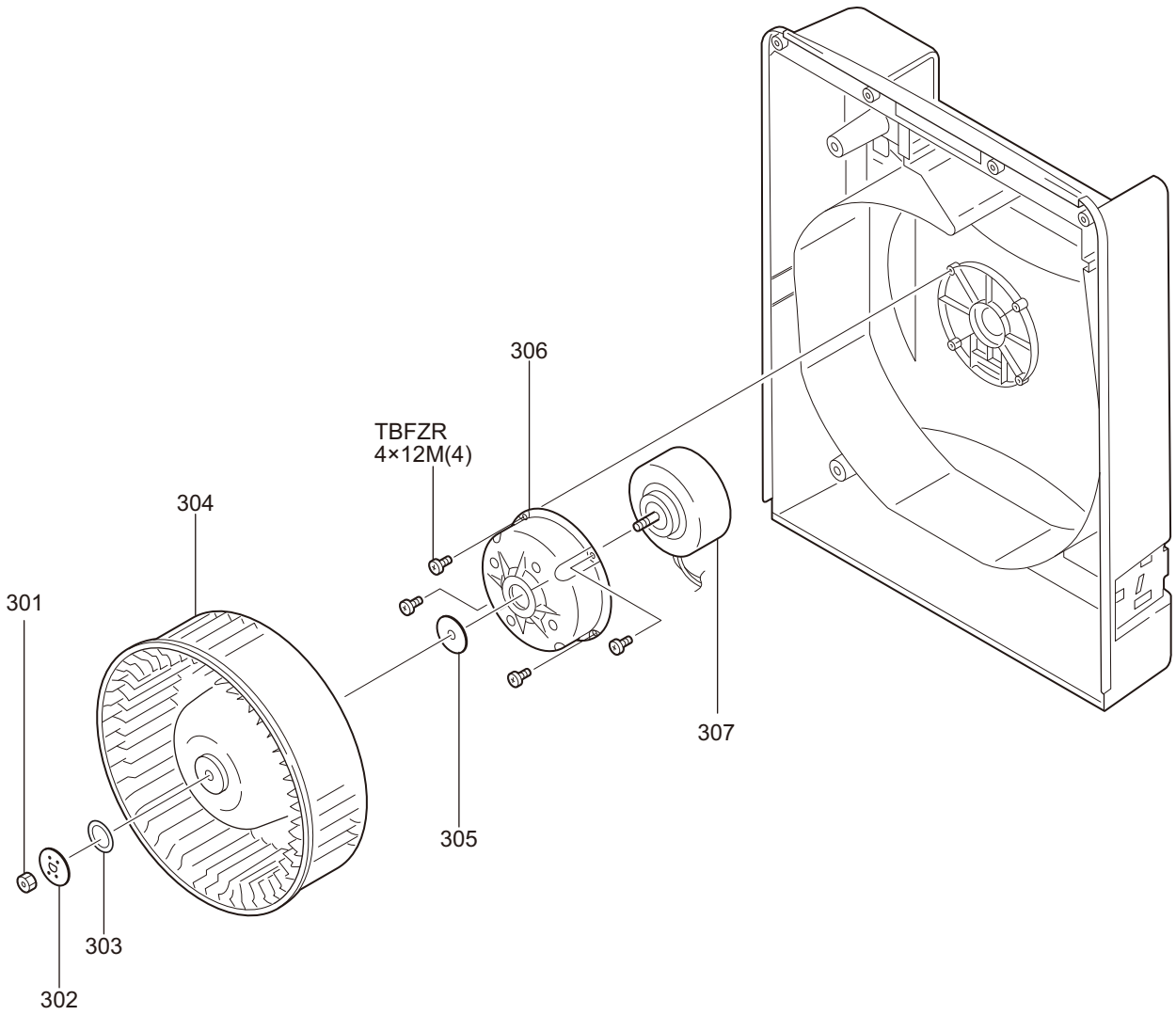
MA-E83H-R1 Model Parts List (2)

Notes:
1. Circled reference numbers indicate performance parts.
2. (New) parts are the newly-adopted parts for this model.
3. Those parts that are marked by ⚠ and ▭ are of critical importance for sustaining safety and performance.
   Use specified parts at replacement.
4. When ordering parts without part numbers, use the design number. The order may take a while to process.

Exploded View Matching No.	Part Name	Part No.	Safety Part	Pc/1 unit	Compatibility Miscellaneous	Design Number
(201)	PCA*837*L	M25 267 688	⚠	2	837	T688T978G11
202	HOLDER-LED	M25 258 260L		1	E83H-C	T260B741H02
203	KNOB-SW*83D	M25 277 170		1	E83H-C	T170B022H14
204	COVER-SCROLL-L(83H)	M25 408 320C		1	E83H-C	T320C510H11
(205)	SENSOR-DUST*F	M25 279 525	⚠	1	K26F	T525C015H22
206	HOLDER-DUST*E83H	M25 408 260		1	E83H-C	T260B858H02
(207)	PBA-T*E83H*PM	M25 408 689	⚠	2	E83H-C	T689T100G11
208	COVER-PCA*83H	M25 408 320		1	E83H-C	T320B810H31
209	COVER-PCA-T*83D	M25 282 320T		1	83H	T320A768G01
210	COVER-PCA-U*83H	M25 282 320U		1	E83H-C	T320C160G01
211	LID-PCA*83H	M25 408 330		1	E83H-C	T330C462H11
(212)	MOTOR-SC*E83H	M25 408 620	⚠	1	220V E83H-C	T620C371H31
213	HOLDER-MOTOR-SC*83H	M25 282 261		1	E83H-C	T261C691G11
214	GEAR-MOTOR	M25 258 110		1	805	T110D162H01
215	COVER-SCROLL-D*837	M25 267 321		1	837	T321C058H01
216	HOLDER-PCA-L*A	M25 408 260D		1	E83H-C	T260A311H12
217	DECO-SHEET*E83H-R1	M25 410 440		1	(New)	T440B377H82
218	FIXTURE-FIL-C*837	M25 267 200		1	837	T200A404H01
(219)	CASE-FIL*C ASSY*83H	M25 408 311	⚠	1	BK90H	T311A598G11
220	SOUND-ISOLATOR(S504)	M43 P19 423		2	E83H-C	T130D358H01
221	SHEET-SW-U	M25 261 449S		1	E83H-C	T449C147H01
222	SHEET-LED	M25 261 449		1	806	T449C148H01
223	SPACER R 4X3.5	M25 267 259		2	E83H-C	T259P053H43
224	PACKING-DUST*V432	M25 249 076		1	E83H-C	T320D791H01
225	PROTECT-MOTOR-SC*83H	M25 282 360		1	E83H-C	T360B212G11
226	NET*E83H	M25 408 349		1	E83H-C	T349B307G11
(227)	RADIATING-SHEET*C	M25 274 390	⚠	1	E83H-C	T390D195H01
(228)	RADIATING-SHEET*L	M25 274 390L	⚠	1	838	T390D195H02
229	PACKING-FRAME*U	M25 282 055U		1	83H	T055D175H02
230	PACKING-FRAME*S	M25 282 055		1	E83H-C	T055D175H01
231	IB-E83H-R1-1	M25 410 946		1	(New)	T946Z098H11
232	PACKING-CASING(12*80)	M25 408 055D		3	12*80 E83H-C	T055D044H04
233	PACKING-CASING(25*80)	M25 408 056D2		1	25*80 BK90H	T055D044H05
234	ESCUTCHEON-FAN*E83-R	M25 410 460F		1	(New)	T460D632H01
–	PACKING-CASE*E83H-R1	M25 410 753		1	(New)	T753C257G73

*1. If the part is out of production, you may be required to use a common part.
*2. Parts found installed in products may have a different part number from service parts.
   However, there should be no difference in performance and can be installed.

MA-E83H-R1 Model Structural Disassembly Diagram (3)



MA-E83H-R1 Model Parts List (3)

Notes:
1. Circled reference numbers indicate performance parts.
2. (New) parts are the newly-adopted parts for this model.
3. Those parts that are marked by ⚠ and ▭ are of critical importance for sustaining safety and performance.
   Use specified parts at replacement.
4. When ordering parts without part numbers, use the design number. The order may take a while to process.

Exploded View Matching No.	Part Name	Part No.	Safety Part	Pc/1 unit	Compatibility Miscellaneous	Design Number
301	NUT-HFZR M6	M25 259 040		1	265	T040P108H16
302	WASHER-FAN-B	M25 282 059B		1	83H	T059D509G02
303	SPACER-FAN*51F	M25 410 259		1	(New)	T259D032H11
(304)	FAN*ASSY*8A	M25 281 119	⚠	1	E83H-C	T119B067G03
305	WASHER-FAN-A	M25 282 059		1	83H	T059D508G02
306	COVER-MOTOR*(V803)	M25 258 320M		1	E83H-C	T320C993H03
(307)	MOTOR-DC*E83H	M25 408 620M	⚠	1	E83H-C	T620C446H01

*1. If the part is out of production, you may be required to use a common part.
*2. Parts found installed in products may have a different part number from service parts.
   However, there should be no difference in performance and can be installed.