OPERATING INSTRUCTIONS

INDOOR UNIT
MS-A18WV
MS-A24WV
MS-A30WV
MSH-A18WV
MSH-A24WV
MSH-A30WV

To use this unit correctly and safely, be sure to read this operating instructions before use.
This air conditioner is NOT intended for use by children or infirm persons without supervisions.

WARNING

Do not use intermediate connection of the power supply cord or the extension cord and do not connect many devices to one AC outlet.
- A fire or an electric shock may result from poor contact, poor insulation, exceeding the permissible current, etc.

Do not scratch or process the power supply cord, etc.
- Do not put heavy object on the power supply cord and do not scratch or process the cord. The cord may be damaged and this may cause a fire or an electric shock.

Do not turn the breaker off/on or disconnect/connect the power supply plug during operation.
- This may cause a fire due to spark, etc.
- Be sure to turn off the breaker or disconnect the power supply plug absolutely after switching the indoor unit off with the remote controller.

Do not expose your skin directly to cool air for a long time.
- This could damage your health.

The customer should not install this unit.
- If this is done incorrectly, it may cause a fire, an electric shock, or injury from the unit falling, water leaking, etc. Consult your dealer.

Do not insert your finger or a stick, etc. into the air inlet/outlet.
- Since the fan rotates at high speed, this may cause an injury.
- Young children should be supervised to ensure that they do not play with the air conditioner.
- Do not put heavy object on the power supply cord and do not scratch or process the cord. The cord may be damaged and this may cause a fire or an electric shock.

Repairs or relocation should not be done by the customer.
- If this is done incorrectly, it may cause a fire, an electric shock, or injury from the unit falling, water leaking, etc. Consult your dealer.

Do not put a pet or houseplant where it will be exposed to direct airflow.
- This may cause a fire or deformation of the cabinet.
- Do not use an insecticide or flammable spray.
- This may cause a fire due to spark, etc.
- Be sure to turn off the breaker or disconnect the power supply plug absolutely after switching the indoor unit off with the remote controller.

Meanings of symbols used in this manual

\(\triangle\) WARNING: Incorrect handling could cause a serious hazard, such as death, serious injury, etc. with a high probability.

\(\Delta\) CAUTION: Incorrect handling could cause a serious hazard depending on the conditions.

The colour of the sticker affixed to the unit is written in the parentheses.

\(\checkmark\): Be sure not to do.

\(\times\): Be sure to follow the instruction.

(Black): Never insert your finger or stick, etc.

(Black): Never step onto the indoor/outdoor unit and do not put anything on them.

(Yellow): Danger of electric shock. Be careful.

(Blue): Be sure to disconnect the power supply plug from the power outlet.

(Blue): Be sure to shut off the power.

After reading this manual, keep it together with the installation manual in a handy place for easy reference.
### SAFETY PRECAUTIONS

**CAUTION**

1. When the unit is to be cleaned, switch it off and disconnect the power supply plug or turn off the breaker.
   - Since the fan rotates at high speed during operation, this may cause an injury.
2. When the unit is not going to be used for a long time, disconnect the power supply plug or turn off the breaker.
   - Otherwise, dirt may collect and this may cause a fire.
3. Replace the batteries with new ones of same type.
   - Using an old battery together with a new one may result in heat generation, leakage or an explosion.
4. Ventilate well in using the unit with a stove, etc.
   - An oxygen shortage may occur.
5. Do not operate switches with wet hands.
   - This may cause an electric shock.
6. Do not clean the air conditioner with water.
   - Water may enter the unit and degrade the insulation. This may cause an electric shock.
7. Do not install the unit where flammable gas could leak.
   - If gas leaks and collects around the unit, it may cause an explosion.

**WARNING**

- Consult your dealer for installation of the air conditioner.

**CAUTION**

- Do not install the unit where flammable gas could leak.
  - If gas leaks and collects around the unit, it may cause an explosion.

**Earth the unit.**

- Do not connect the earth to a gas pipe, water pipe, lightning rod or the earth of a telephone. If the earthing is incorrect, it may cause an electric shock.

**Earth leakage breaker.**

- Install an earth leakage breaker depending on the place where the air conditioner is to be installed (humid places, etc.).
  - If the earth leakage breaker is not installed, it may cause an electric shock.
  - If the drainage route is incomplete, water may drop from the unit. This may wet and damage the furniture.

### NAME OF EACH PART

#### Indoor unit

- **Air inlet**
- **Power supply cord**
- **Remote control receiving section**
- **Display section**
- **Emergency operation switch**

#### Outdoor unit

- **Air inlet (back and side)**
- **Drainage hose**
- **Air outlet**
- **Drain outlet**
- **Piping**

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**NAME OF EACH PART**

- **Indoor unit**
- **Outdoor unit**
- **Air cleaning filter**
- **Catechin air filter**
- **Remote controller**
NAME OF EACH PART

Remote controller

COOL & HEAT type (MSH series)

Signal transmitting section

Operation display section

ON/OFF (operate/stop) button

VANE button (Horizontal vane button)

Fan speed control button

OFF timer button

On timer button

HR button

MIN, HR button

Time set buttons

LONG button

In case of COOL ONLY type (MS series)

Temperature buttons

Open the front lid.

(This diagram shows an overall view.)

PREPARATION BEFORE OPERATION

Auto restart function

These models are equipped with an auto restart function. If you do not want to use this function, please consult the service representative because the setting of the unit needs to be changed.

Auto restart function is ...

When the indoor unit is controlled with the remote controller, the operation mode, the set temperature and the fan speed are stored in the memory. If a power failure occurs or the main power is turned off during operation, “Auto restart function” sets automatically to start operating in the same mode as the one set with the remote controller just before the shutoff of the main power. (Refer to page 6 for details.)

Indoor unit

Insert the power supply plug into the power outlet and/or turn the breaker on.

WARNING:

Remove dirt from the power supply plug and insert the plug securely. If dirt adheres to the plug or insertion is incomplete, it may cause a fire or an electric shock.

Check the type of air conditioner.

Type

Model Name

COOL & HEAT

MSH-A18/24/30W

COOL ONLY

MS-A18/24/30W

NOTE:

This operating instructions manual has different contents for the COOL & HEAT type air conditioner and COOL ONLY type. Follow the appropriate instructions for each type of air conditioner.

Remote controller

The remote controller used for the COOL ONLY type air conditioner is different from the one used for the COOL & HEAT type as shown in the illustrations to the left.

Check the difference of operation mode.

Type

Operation Mode

COOL & HEAT

(0 FEEL...), (COOL), (DRY), (HEAT)

COOL ONLY

(0 FEEL...), (COLL), (DRY), (FAN)

NOTE:

Only the remote controller for the COOL & HEAT type air conditioner is illustrated as an example in this operating instructions manual.
PREPARATION BEFORE OPERATION

Remote controller

How to set the batteries and the current time

1 Remove the front lid and insert batteries. Then reattach the front lid.
   Insert the minus pole of the batteries first. Check if the polarity of the batteries is correct.

2 Press the RESET button.
   Press using a thin stick.

3 Press the CLOCK set button.
   Press using a thin stick.

4 Press the and buttons (TIME SET buttons) to set the current time.

- Each time the button is pressed, the set time increases by 1 hour, and each time the button is pressed, the set time increases by 1 minute.

- If the RESET button is not pressed, the remote controller may not operate correctly.

- If liquid from the batteries gets onto your skin or clothes, wash it well with clean water. If liquid from the batteries gets into your eyes, wash them well with clean water and consult a doctor at once.

Dry-cell batteries

- If the batteries of the remote controller run out or the remote controller malfunctions, the emergency operation can be done using the EMERGENCY OPERATION switch.

Handling of the remote controller

- The range that the signal can reach is about 6 m when the remote controller is pointed at the front of the indoor unit.
- When a button is pressed, one or two beeps will be heard from the indoor unit. If no sound is heard, operate again.
- Use the remote controller carefully.
- If it is dropped, thrown or it gets wet, the remote controller may not operate.
- When installing on a wall, etc.
- Install the remote controller holder in a position where the signal reception sound (beep) can be heard from the indoor unit when the button is pressed.

How to install/remove the remote controller

Installing: Insert the remote controller downward.
Removing: Pull it up.

Remote controller holder

- To prevent liquid leakage, take out all batteries when the remote controller is not going to be used for a long time.
- To ensure the operation of the indoor unit, batteries are required even when the remote controller is not used.
- Replace the batteries with new AAA alkaline batteries in the following cases:
  - When the service life of an alkaline battery is about 1 year.
  - When the signal reception sound (beep) can be heard from the indoor unit. If no sound is heard, operate again.

- Details of EMERGENCY COOL MODE are as shown below.
  - Details of EMERGENCY COOL mode are as shown below. However, the temperature control does not work for 30 minutes in test run and the unit is set to continuous operation. The fan speed is set to High in test run and shifts to Medium after 30 minutes.

- The operation mode is indicated by the Operation indicator lamp on the indoor unit as following figure.

- To stop the emergency operation, press the EMERGENCY OPERATION switch (in case of EMERGENCY HEAT MODE) or twice (in case of EMERGENCY COOL MODE).

When the remote controller cannot be used (emergency operation)

When the batteries of the remote controller run out or the remote controller malfunctions, the emergency operation can be done using the EMERGENCY OPERATION switch.

COOL & HEAT type (MSH series)

1 Press the EMERGENCY OPERATION switch.
   - Each time the EMERGENCY OPERATION switch is pressed, the unit will operate in order of EMERGENCY COOL MODE, EMERGENCY HEAT MODE and STOP MODE.

COOL ONLY type (MS series)

1 Press the EMERGENCY OPERATION switch.
   - When the EMERGENCY OPERATION switch is pressed, the unit will operate in test run for 30 minutes at first and then the operation mode shifts to EMERGENCY COOL MODE.
**I FEEL... AUTO OPERATION**

With the "I FEEL..." auto operation mode, the optimum room condition can be set automatically with a one-touch operation.

**To start operation:**
- Press the `ON/OFF` button.

When the "I FEEL..." mode is selected, the air conditioner is automatically controlled at the optimum temperature.

**To stop operation:**
- Press the `ON/OFF` button.

**If you feel slightly warm:**
- Press the `TOO WARM` button to lower the temperature.
  One press lowers the temperature by about 1°C.

**If you feel slightly cool:**
- Press the `TOO COOL` button to raise the temperature.
  One press raises the temperature by about 1°C.

When "I FEEL..." is not selected, press the `MODE` button until it is set.

Each time the button is pressed, the operation mode is changed in sequence: "I FEEL..." → COOL → DRY → HEAT (HEAT: MSH series)/FAN (MS series)

**Description of “AUTO RESTART FUNCTION”**

- These units are equipped with an auto restart function. When the main power is turned on, the air conditioner will start operation automatically in the same mode as the one set with the remote controller before the shutoff of the main power.
- If the unit was set to off with the remote controller before the shutoff of the main power, it will remain stopped even after the main power is turned on.
- If the unit was in the emergency operation before the shutoff of the main power, it will start operation, when main power comes on, in the same mode as the one set with the remote controller before the emergency operation.
- If the unit is operated in "I FEEL..." mode before power failure, the operation is not stored in the memory. In "I FEEL..." mode, the operation is decided by the initial room temperature at (re)start.

**Description of "I FEEL..." mode**

**Details of operation**

According to the room temperature when the operation starts, the operation mode is automatically set to COOL, DRY or HEAT. However, when operation is started again within 2 hours after it is stopped, the same operation mode before the operation is stopped is selected. The operation mode selected first is not changed even if the room temperature changes. If the operation mode does not match the room condition, select the appropriate operation mode by pressing the `MODE` button.

**Details of auto operation**

<table>
<thead>
<tr>
<th>Room temperature when started</th>
<th>Operation mode</th>
<th>Target temperature</th>
<th>Operation mode</th>
<th>Target temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 25°C or higher</td>
<td>COOL</td>
<td>About 24°C</td>
<td>COOL</td>
<td>About 24°C</td>
</tr>
<tr>
<td>About 25°C - 23°C</td>
<td>DRY</td>
<td></td>
<td>DRY</td>
<td></td>
</tr>
<tr>
<td>About 23°C or lower</td>
<td>HEAT</td>
<td>About 26°C</td>
<td>DRY</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:**

COOL: When the room temperature is 2°C higher than the set temperature, the set temperature may not be changed since the air conditioner is operating to reach the target (set) temperature. In this case, please wait until the room temperature drops to within 2°C of the set temperature and then change the set temperature.

HEAT: When the room temperature is 2°C lower than the set temperature, the set temperature may not be changed since the air conditioner is operating to reach the target (set) temperature. In this case, please wait until the room temperature rises to within 2°C of the set temperature and then change the set temperature.

**Details of display on the indoor unit**

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

![Operation Indicator](image)

<table>
<thead>
<tr>
<th>Indication</th>
<th>Operation state</th>
<th>Difference between target temperature and room temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-1</td>
<td>This shows the air conditioner is operating to reach the target temperature. Please wait until the target temperature is obtained.</td>
<td>About 2°C or more</td>
</tr>
<tr>
<td>1-2</td>
<td>This shows that the room temperature is approaching the target temperature.</td>
<td>About 2°C or less</td>
</tr>
<tr>
<td>1-3</td>
<td>(In case of outdoor unit MXZ series only) Please refer to Information for multi system air conditioner. (Page 7)</td>
<td>—</td>
</tr>
</tbody>
</table>

**Operation indicator lamp**

<table>
<thead>
<tr>
<th>Indication</th>
<th>Operating condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**MANUAL OPERATION (COOL, DRY, HEAT/FAN)**

To select the COOL, DRY or HEAT/FAN mode:

1. Press the \[\text{button}\] button.
2. Select the operation mode by pressing the \[\text{button}\] button.

To stop operation:

Press the \[\text{button}\] button.

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**When the set temperature is to be changed:**

- Press the \[\text{button}\] to lower the temperature. One press lowers the temperature by about 1°C.
- Press the \[\text{button}\] to raise the temperature. One press raises the temperature by about 1°C.

**In HEAT operation:**

- If the air conditioner absorbs too much heat from the air, it may be overloaded. Following a judgement made by the microprocessor, the fan in the outdoor unit is automatically stopped to protect the air conditioner.
- When the outdoor unit’s fan is stopped, frost may form on the outdoor unit, but this is not a problem.

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**In DRY operation:**

- The temperature control (temperature setting) cannot be done.
- The room temperature is slightly lowered in this operation mode.

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The details of the display on the indoor unit are explained on page 6.

**NOTE:**

- When the ambient temperature is too high, the room temperature may not reach the set temperature since the unit operates to cool the room under a high load.

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**Information for multi system air conditioner (Outdoor unit: MXZ series)**

Multi system air conditioner (Outdoor unit: MXZ series) can connect two or more indoor units with one outdoor unit. According to the capacity, two or more units can operate simultaneously.

- When you try to operate two or more indoor units with one outdoor unit simultaneously, one for the cooling and the other for heating, the operation mode of the indoor unit that operates earlier is selected. The other indoor units that will start the operation later cannot operate, indicating an operation state. (Refer to the table of Operation Indicator lamp on page 6.) 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, the indoor unit that does not operate may get warm or the sound of refrigerant flowing may be heard. This is not a malfunction since the refrigerant continuously flows into the indoor unit that does not operate.

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**Description of “AUTO RESTART FUNCTION”**

Refer to page 6.

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**AIR FLOW VELOCITY AND DIRECTION ADJUSTMENT**

**AIR FLOW velocity and direction can be selected as required.**

To change the AIR FLOW velocity, press the \[\text{button}\] button.

Each time the button is pressed, the fan speed is changed in sequence: \(\text{Low} \rightarrow \text{Med.} \rightarrow \text{High} \rightarrow \text{(AUTO)}\)

- Use the \(\text{High}\) notch to cool/heat the room more.
- If the operating sound of the air conditioner disturbs your sleep, use the \(\text{Low}\) notch.

To change the AIR FLOW blowing direction vertically, press the \[\text{button}\] button.

Each time the button is pressed, the angle of the horizontal vane is changed in sequence: \(\text{(1) } \rightarrow \text{(2) } \rightarrow \text{(3) } \rightarrow \text{(4) } \rightarrow \text{(5) } \rightarrow \text{(SWING) } \rightarrow \text{(AUTO)}\)

**SWING OPERATION**

Use the swing operation for the air flow to reach all corners of the room.

Recommended horizontal vane range

Use the \(\text{(AUTO)}\) position usually.
Use positions \(\text{1}\) or \(\text{2}\) in the COOL or DRY mode and use positions \(\text{3}\) to \(\text{5}\) in the HEAT mode when adjusting to your requirements.

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**Auto air flow direction control operation**

When the AUTO mode is selected with the \[\text{button}\] button, the position of the horizontal vane is automatically set to correspond to the operation mode for effective operation.

1. **HEAT:** The air is blown out downwards.
2. **COOL, DRY:** The air is blown out horizontally.
3. **FAN:** The air is blown out downwards.

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To change the AIR FLOW blowing direction horizontally, press the \[\text{button}\] button.

Each time the button is pressed, the angle of the VERTICAL VANE is changed in sequence: \(\text{COOL} \rightarrow \text{DRY} \rightarrow \text{I FEEL...} \rightarrow \text{(SWING) } \rightarrow \text{WHIPLASH} \rightarrow \text{(AUTO)}\)

**SWING OPERATION**

Use the swing operation for the air flow to reach all corners of the room.

Horizontal AIR FLOW blowing range

NOTE: Adjust the horizontal AIR FLOW direction using the remote controller. If the VERTICAL VANE is moved manually, it may cause trouble.
LONG OPERATION

Use this operation when you want the air flow to reach a long distance.

Perform the following operations while the unit is operating.

- Press the **LONG** button.
  The fan speed increases.
  When the fan speed is set to **AUTO**, the fan speed is higher than a fan speed determined by the room temperature and the set temperature.
  In addition, the HORIZONTAL VANE moves to the position for LONG mode.

**Mechanism of the LONG operation**

In the following example, the VERTICAL VANE is set to **(front)**.

- Fan speed: Higher
  - Solid arrow: When the LONG mode is used
  - Dotted arrow: When the LONG mode is not used

To release the LONG mode:

- Press the **LONG** button again.

**LONG mode is also released in the following ways.**

- By pressing the **VANE** button.
- By pressing the **STOP** button (only during COOL mode).
- Even when the LONG mode is being used, the air may not reach a long distance due to the installation location of the air conditioner.
  - In this case, press the **FAN** button to set the fan speed to **(High)**, and then press the **LONG** button.
- **MODE** button, **FAN** buttons, **TOO WARM**, **TOO COOL**, **VANE** buttons, temperature buttons and the ON/OFF timer are available.

ECONO COOL OPERATION

Use this operation when you want to be comfortable in COOL mode even with energy saved.

Perform the following operations while the unit is operating in the MANUAL COOL mode.

- Press the **ECONO COOL** button.
  When the **ECONO COOL** operation is selected in COOL mode, the air conditioner performs swing operation in various cycle according to the temperature of air conditioner.
  Also SET TEMPERATURE is automatically set 2°C higher than in COOL mode.

To release the ECONO COOL operation:

- Press the **ECONO COOL** button again.

- **LONG** mode is also released in the following ways:
  - When the **MODE** button or the **VANE** button is pressed or the operation mode is changed during the ECONO COOL operation, ECONO COOL operation is released.
  - The **FAN** button, the **STOP** button and ON/OFF timer (explained below) are available.

What is “ECONO COOL”?

Swing air flow (change of air flow) makes you feel cooler than constant air flow. So, even though the set temperature is automatically set 2°C higher, it is possible to perform cooling operation with keeping comfort. As a result, energy can be saved.

TIMER OPERATION (ON/OFF TIMER)

It is convenient to set the timer when you go to bed, when you get home, when you get up, etc.

**How to set the ON timer**

1. Press the **START** button during operation.
   Each time the button is pressed, the ON timer mode alternates between ON and OFF.
2. Set the time of the timer using the **HR.** and **MIN.** buttons.
   Each time the **HR.** button is pressed, the set time increases by 1 hour; each time the **MIN.** button is pressed, the set time increases by 10 minutes.

To release the ON timer:

- Press the **START** button.

**Programming timer operation**

The ON timer and the OFF timer can be used in combination. The timer of the set time that is reached first will operate first. (1 mark indicates the order of timer operations.)

- If the current time has not been set, the timer operation cannot be used.

**NOTE:**

If the main power is turned off or a power failure occurs while AUTO START/STOP 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 at the same time that power is restored.
WHEN THE AIR CONDITIONER IS NOT GOING TO BE USED FOR A LONG TIME

When it is not going to be used for a long time:

1. Perform the FAN operation for 3 or 4 hours to dry the inside of the air conditioner.
   - COOL & HEAT type:
     • To perform FAN operation, set the remote controller to the highest temperature in the MANUAL COOL mode. (Refer to page 7.)
   - COOL ONLY type:
     • Select the FAN mode. (Refer to page 7.)

2. Turn off the breaker and/or disconnect the power supply plug.
   - CAUTION: Turn off the breaker or disconnect the power supply plug when the air conditioner is not going to be used for a long time. Dirt may collect and this may cause a fire.

3. Remove the batteries from the remote controller.
   - CAUTION: To prevent liquid leakage, take out all batteries when the remote controller is not going to be used for a long time.

When the air conditioner is to be used again:

1. Clean the air filter and install it in the indoor unit.
   (Refer to page 10 for cleaning instructions.)

2. Check that the air inlet and outlet of the indoor/outdoor units are not blocked with any obstacles.

3. Check that the earth is connected correctly.
   - CAUTION: Earth the unit. Do not connect the earth to a gas pipe, water pipe, lightning rod or the earth of a telephone. If the earthing is incorrect, it may cause an electric shock.

MAINTENANCE

Before starting maintenance:

- Turn off the breaker and/or disconnect the power supply plug.

- CAUTION: When the unit is to be cleaned, switch it off and disconnect the power supply plug or turn off the breaker. Since the fan rotates at high speed during operation, it may cause an injury.

Cleaning the indoor unit:

- Clean the unit using a soft dry cloth.
  - If the dirt is noticeable, wipe the unit with a cloth soaked in a solution of mild detergent diluted in lukewarm water.
  - Do not use gasoline, benzine, polishing powder, or insecticide. The unit may be damaged.

Do not exceed movable range

- Do not step onto an unstable bench when maintaining the unit, etc. This may cause an injury, etc. if you fall down.

If the front panel comes off, attach it as explained below.

- Keeping the front panel level with one hand, insert the hinges one by one with the other hand into the notches at the left, right and center of the top of the indoor unit until they click into place. (①) Then, close the front panel. (②)

- Do not open the front panel up past the level position. The panel may come off in order to prevent it from being damaged.

- The front panel may also come off if the upper part of the front panel is pulled down.

- If the front panel comes off, attach it as explained below.

- Do not step onto an unstable bench when maintaining the unit, etc. This may cause an injury, etc. if you fall down.
CLEANING THE CATECHIN AIR FILTER

Do not open the front panel up past the level position. The panel may come off in order to prevent it from being damaged.

Cleaning the catechin air filter (about once every 2 weeks)

1. Remove the catechin air filter.

CAUTION:
When the catechin air filter is to be removed, do not touch the metal parts of the indoor unit. This may cause an injury.

2. Remove dirt from the catechin air filter using a vacuum cleaner or by washing the filter with water.
   - If the dirt is noticeable, wash the filter with a solution of mild detergent diluted in lukewarm water.
   - If hot water (50 °C or more) is used, the filter may be deformed.

3. After washing with water/lukewarm water, dry the catechin air filter well in the shade.
   - Do not expose the catechin air filter to direct sunlight or heat from a fire when drying it.

4. Install the catechin air filter.

CLEANING THE CATECHIN AIR FILTER

Do not open the front panel up past the level position. The panel may come off in order to prevent it from being damaged.

Cleaning the catechin air filter (about once every 2 weeks)

1. Remove the catechin air filter.

CAUTION:
When the catechin air filter is to be removed, do not touch the metal parts of the indoor unit. This may cause an injury.

2. Remove dirt from the catechin air filter using a vacuum cleaner or by washing the filter with water.
   - If the dirt is noticeable, wash the filter with a solution of mild detergent diluted in lukewarm water.
   - If hot water (50 °C or more) is used, the filter may be deformed.

3. After washing with water/lukewarm water, dry the catechin air filter well in the shade.
   - Do not expose the catechin air filter to direct sunlight or heat from a fire when drying it.

4. Install the catechin air filter.

What is “Catechin air filter”?
The air filter is dyed with a natural material, catechin, that is contained in tea. The catechin air filter deodorizes odor and noxious gases such as formaldehyde, ammonia, and acetaldehyde. Moreover, it restraints the activity of the viruses adhering to the filter.

REPLACEMENT OF THE AIR CLEANING FILTER (OPTION)

When the capacity is lowered because of dirt, etc., it is necessary to replace the air cleaning filter.

Air cleaning filter replacement

1. Remove the catechin air filter.

Air cleaning filter

- If the air cleaning filter is clogged, it may lower the unit’s capacity or cause condensation at the air outlet.
- The air cleaning filter is disposable. The standard usable term is about 4 months. However, if the colour of the filter turns to dark brown, replace the filter at once.

Optional parts

Optional parts are available from your local dealer.

<table>
<thead>
<tr>
<th>Name of parts</th>
<th>AIR CLEANING FILTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts number</td>
<td>MAC-1700FT</td>
</tr>
</tbody>
</table>

- Please purchase the optional parts (MAC-1700FT) as a set (2 pcs) for the first time use.

About once every 4 months

1. Install a new air cleaning filter.

Air cleaning filter

- If the air cleaning filter is clogged, it may lower the unit’s capacity or cause condensation at the air outlet.
- The air cleaning filter is disposable. The standard usable term is about 4 months. However, if the colour of the filter turns to dark brown, replace the filter at once.

Optional parts

Optional parts are available from your local dealer.

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<tr>
<th>Name of parts</th>
<th>AIR CLEANING FILTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts number</td>
<td>MAC-1700FT</td>
</tr>
</tbody>
</table>

- Please purchase the optional parts (MAC-1700FT) as a set (2 pcs) for the first time use.
The air conditioner cannot be operated.
- Is the breaker turned on?
- Is the fuse blown?
- Is the ON timer set? (Page 8)

The room cannot be cooled or heated sufficiently.
- Is the temperature setting correct? (Page 7)
- Is the filter clean? (Page 10)
- Are there any obstacles blocking the air inlet or outlet of the indoor or outdoor unit?
- Is a window or door open?

The air from the indoor unit smells strange.
- Is the filter clean? (Page 10)
- Are the batteries exhausted? (Page 5)
- Is the polarity (+, -) of the batteries correct? (Page 5)
- Are any buttons on the remote controller of other electric appliances being pressed?

When a power failure occurs.
- Does the air conditioner start operating again?
- If the air conditioner had operated before the power failure, as these models are equipped with an auto restart function, the air conditioner should start operating again. (Refer to Description of "AUTO RESTART FUNCTION" on page 6.)

Even if the above items are checked, when the air conditioner does not recover from the trouble, stop using the air conditioner and consult your dealer.
- When water leaks from the indoor unit.
- When the left operation indicator lamp blinks.
- When the breaker trips frequently.
- The remote control signal may not be received in a room where an electronic connecting section is cooled and this causes water to condense.
- When thunder is heard, stop operation and disconnect the power supply plug or turn off the breaker. Otherwise, the electrical parts may be damaged.

When you think that trouble has occurred

<table>
<thead>
<tr>
<th>Question</th>
<th>Check points or Remedy</th>
<th>Answer (not a malfunction)</th>
<th>Question</th>
<th>Answer (not a malfunction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The air conditioner cannot be operated for about 3 minutes when restarted.</td>
<td>This protects the air conditioner according to instructions from the microprocessor. Please wait.</td>
<td>This sound is generated by the expansion/contraction of the front panel, etc. due to change in temperature.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cracking sound is heard.</td>
<td>The air from the indoor unit smells strange.</td>
<td>The air conditioner may suck in an odor adhering to the wall, carpet, furniture, cloth, etc. and blow it out with the air.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The fan stops during the DRY operation.</td>
<td>The sound of water flowing is heard.</td>
<td>In DRY operation, the unit operates using the same refrigerant circuit as in COOL operation. DRY operation time has to be reduced in order to lower humidity without much room temperature decreasing. So the compressor sometimes stops, and at the same time the indoor fan stops. This prevents water condensed on the heat exchanger from evaporating again.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The sound as burbling is heard.</td>
<td>The air conditioner starts the operation only with the main power turned on, though you do not operate the unit with the remote controller.</td>
<td>This sound is generated by the expansion/contraction of the front panel, etc. due to change in temperature.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water leaks from the outdoor unit.</td>
<td>White smoke is discharged from the outdoor unit.</td>
<td>This sound is generated by the expansion/contraction of the front panel, etc. due to change in temperature.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the following cases, stop using the air conditioner and consult your dealer.
- When water leaks from the indoor unit.
- When the left operation indicator lamp blinks.
- When the breaker trips frequently.
- The remote control signal may not be received in a room where an electronic connecting section is cooled and this causes water to condense.
- When thunder is heard, stop operation and disconnect the power supply plug or turn off the breaker. Otherwise, the electrical parts may be damaged.
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Set name</th>
<th>MS-A18WV</th>
<th>MS-A24WV</th>
<th>MS-A30WV</th>
<th>MSH-A18WV</th>
<th>MS+H-A24WV</th>
<th>MS+H-A30WV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>Indoor</td>
<td>Indoor</td>
<td>Indoor</td>
<td>Indoor</td>
<td>Indoor</td>
<td>Indoor</td>
<td>Indoor</td>
</tr>
<tr>
<td></td>
<td>Outdoor</td>
<td>Outdoor</td>
<td>Outdoor</td>
<td>Outdoor</td>
<td>Outdoor</td>
<td>Outdoor</td>
<td>Outdoor</td>
</tr>
<tr>
<td></td>
<td>Fan</td>
<td>Fan</td>
<td>Fan</td>
<td>Fan</td>
<td>Fan</td>
<td>Fan</td>
<td>Fan</td>
</tr>
<tr>
<td></td>
<td>kW</td>
<td>kW</td>
<td>kW</td>
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<td>kW</td>
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<tr>
<td>Capacity</td>
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<td>2.4</td>
<td>3.3</td>
<td>5.0</td>
<td>5.2</td>
<td>6.3</td>
<td>7.2</td>
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<tr>
<td>Input</td>
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<td>kg</td>
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<tr>
<td>Indoor</td>
<td>42</td>
<td>53</td>
<td>55</td>
<td>52</td>
<td>53</td>
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<td>Outdoor</td>
<td>60</td>
<td>73</td>
<td>75</td>
<td>47</td>
<td>74</td>
<td>77</td>
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<tr>
<td>Refrigerant filling capacity (R410A)</td>
<td>kg</td>
<td>1.40</td>
<td>1.20</td>
<td>2.30</td>
<td>1.75</td>
<td>2.15</td>
<td>2.30</td>
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<tr>
<td>T code</td>
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<td>IP20</td>
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<td>Permissible operating pressure</td>
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<tr>
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<td>MPA</td>
<td>MPA</td>
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<td>MPA</td>
<td>MPA</td>
</tr>
<tr>
<td>Noise level</td>
<td>Indoor (high/med/low)</td>
<td>dB(A)</td>
<td>42/38/34</td>
<td>46/41/37</td>
<td>47/42/37</td>
<td>42/38/34</td>
<td>46/41/37</td>
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<tr>
<td></td>
<td>Outdoor</td>
<td>dB(A)</td>
<td>53</td>
<td>55</td>
<td>53</td>
<td>53</td>
<td>55</td>
</tr>
</tbody>
</table>

**NOTE:**

1. **Rating condition**
   - Cooling: Indoor: 27°C DB, 19°C WB
   - Heating: Indoor: 20°C DB
   - Outdoor: 7°C DB, 6°C WB

2. **Guaranteed operating range**
   - Cooling: Upper limit: 35°C DB, 19°C WB
   - Lower limit: 31°C DB

**WARNING:**

- The customer should not install this unit. If installation is done incorrectly, it may cause a fire, an electric shock, or injury from the unit falling, water leaking, etc.
- Do not use intermediate connection of the power supply cord or the extension cord and do not connect many devices to one AC outlet.
- A fire or an electric shock may result from poor contact, poor insulation, exceeding the permissible current, etc. Consult your dealer.

**Disposal**

To dispose of this product, consult your dealer.

If you have any questions, consult your dealer.
This product is designed and intended for use in the residential, commercial and light-industrial environment.

The product at hand is based on the following EU regulations:

- Low Voltage Directive 73/23/EEC