

SPLIT-TYPE AIR CONDITIONERS

INDOOR UNIT

MSH-GF25VA MSH-GF35VA



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SAFETY PRECAUTIONS

- Since rotating parts and parts which could cause an electric shock are used in this product, be sure to read these "Safety Precautions" before use.
- Since the cautionary items shown here are important for safety, be sure to
 observe them.
- After reading this manual, keep it together with the installation manual in a handy place for easy reference.

Marks and their meanings

| A WARNING : | Incorrect handling could cause serious hazard, such as death, serious injury, etc. with a high probability. |
|-------------|---|
| CAUTION : | Incorrect handling could cause serious hazard depending on the conditions. |

| \bigcirc | Do not connect the power cord to an intermediate point, use an extension cord, or connect multiple devices to a single AC outlet. • This may cause overheating, fire, or electric shock. | | | |
|---|---|--|--|--|
| | Make sure the power plug is free of dirt and insert it securely into the outlet. • A dirty plug may cause fire or electric shock. | | | |
| | Do not bundle, pull, damage, or modify the power cord, and do not apply heat or place heavy objects on it. • This may cause fire or electric shock. | | | |
| | Do not turn the breaker OFF/ON or disconnect/connect the power plug during operation. • This may create sparks, which can cause fire. • After the indoor unit is switched OFF with the remote controller, make sure to turn the breaker OFF or disconnect the power plug. | | | |
| Do not expose your body directly to cool air for a pro- length of time. • This could be detrimental to your health. | | | | |
| | The unit should not be installed, relocated, disassembled, altered, or repaired by the user. An improperly handled air conditioner may cause fire, electric shock, injury, or water leakage, etc. Consult your dealer. If the power supply cord is damaged, it must be replaced by the manufacturer or its service agent in order to avoid a hazard. | | | |
| | When installing, relocating, or servicing the unit, make sure that no substance other than the specified refrigerant (R410A) enters the refrigerant circuit. Any presence of foreign substance such as air can cause abnormal pressure rise and may result in explosion or injury. The use of any refrigerant other than that specified for the system will cause mechanical failure, system malfunction, or unit breakdown. In the worst case, this could lead to a serious impediment to securing product safety. | | | |
| | This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appli- ance by a person responsible for their safety. | | | |
| | Children should be supervised to ensure that they do not play with the appliance. | | | |

Meanings of symbols used in this manual

- Be sure not to do.
- Be sure to follow the instruction.
- : Never insert your finger or stick, etc.
- : Never step onto the indoor/outdoor unit and do not put anything on them.

- A : Danger of electric shock. Be careful.
- Be sure to disconnect the power supply plug from the power outlet.
- Be sure to shut off the power.



SAFETY PRECAUTIONS

| \bigcirc | Do not pull the power cord. This may cause a portion of the core wire to break, which may cause overheating or fire. |
|------------|---|
| | Do not charge or disassemble the batteries, and do not throw them into a fire. • This may cause the batteries to leak, or cause a fire or explo- |
| | sion. Do not operate the unit for more than 4 hours at high humid- ity (80% RH or more) and/or with windows or outside door left |
| | Open. This may cause the water condensation in the air conditioner, which may drip down, wetting or damaging the furniture. The water condensation in the air conditioner may contribute to growth of fungi, such as mold. |
| | Do not use the unit for special purposes, such as storing food, raising animals, growing plants, or preserving precision devices or art objects. • This may cause deterioration of quality, or harm to animals and plants. |
| | Do not expose combustion appliances to direct airflow. This may cause incomplete combustion. |
| | Never put batteries in your mouth for any reason to avoid ac- cidental ingestion. • Battery ingestion may cause choking and/or poisoning. |
| | Before cleaning the unit, switch it OFF and disconnect the power plug or turn the breaker OFF. This may cause injury, since the fan inside rotates at high speeds during operation. |
| | When the unit will be unused for a long time, disconnect the power plug or turn the breaker OFF. • The unit may accumulate dirt, which may cause overheating or fire. |
| | Replace all batteries of the remote controller with new ones of the same type. • Using an old battery together with a new one may cause overheat- ing, leakage, or explosion. |
| | If the battery fluid comes in contact with your skin or clothes, wash them thoroughly with clean water. If the battery fluid comes in contact with your eyes, wash them thoroughly with clean water and immediately seek medical atten- tion. |
| | Ensure that the area is well-ventilated when the unit is operated together with a combustion appliance. Inadequate ventilation may cause oxygen starvation. |
| | Turn the breaker OFF when you hear thunder and there is a possibility of a lightning strike. The unit may be damaged if lightning strikes. |
| | After the air conditioner is used for several seasons, perform inspection and maintenance in addition to normal cleaning. • Dirt or dust in the unit may create an unpleasant odor, contribute to growth of fungi, such as mold, or clog the drain passage, and cause water to leak from the indoor unit. Consult your dealer for inspection and maintenance, which require specialized knowledge and skills. |
| A | Do not operate switches with wet hands. This may cause electric shock. |
| | Do not clean the air conditioner with water or place an object that contains water, such as a flower vase, on it. • This may cause fire or electric shock. |
| | Do not step on or place any object on the outdoor unit. This may cause injury if you or the object falls down. |



Dirty filters cause condensation in the air conditioner which will contribute to the growth of fungi such as mold. It is therefore recommended to clean air filters every 2 weeks.

For installation

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| _ | | | | |
|------------|---|--|--|--|
| | | | | |
| \bigcirc | Consult your dealer for installing the air conditioner. It should not be installed by the user since installation requires specialize knowledge and skills. An improperly installed air conditioner may caus water leakage, fire, or electric shock. | | | |
| | Provide a dedicated power supply for the air conditioner. A non-dedicated power supply may cause overheating or fire. | | | |
| | Do not install the unit where flammable gas could leak. If gas leaks and accumulates around the outdoor unit, it may cause an explosion. | | | |
| | Earth the unit correctly. Do not connect the earth wire to a gas pipe, water pipe, lightning rod, or a telephone ground wire. Improper earthing may cause electric shock. | | | |
| | | | | |
| 0 | Install an earth leakage breaker depending on the installation location of the air conditioner (such as highly humid areas). • If an earth leakage breaker is not installed, it may cause electric shock. | | | |
| | Ensure that the drain water is properly drained. If the drain passage is improper, water may drip down from the indoor/ outdoor unit, wetting and damaging the furniture. | | | |
| | | | | |

In case of an abnormal condition Immediately stop operating the air conditioner and consult your dealer.

Name of each part



:

PREPARATION BEFORE OPERATION

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



Setting current time



correctly

Selecting operation modes



Press () to start the operation.



(I FEEL)

٥ (DRY)

(HEAT)

ON/OF

Press (a) or (v) to set the temperature. Each press raises or lowers the temperature by 1°C.

Press (\bigcirc) to stop the operation.

(COOL)

The same setting is selected the next time by simply pressing

Operation indicator lamp

The operation indicator lamp shows the operation state of the unit.

| Indication | Operation state | Room temperature |
|---------------|---|---|
| <u>*</u> * | The unit is operating to reach the set temperature | About 2°C or more away from set tem- perature |
| * | The room temperature is approaching the set temperature | About 1 to 2°C from set temperature |

Not lighted Lighted 0

🗘 I FEEL mode

The unit selects the operation mode according to the room temperature when I FEEL is selected. When the room temperature is higher than 25°C, COOL is selected (set temperature: 24°C). When the room temperature is lower than 25°C, DRY is selected. However, when operation is stopped and then started within 2 hours, the mode which has been selected previously is operated. When the room temperature is lower than 23°C, HEAT is selected.

Note:

During COOL operation, the set temperature may not be changed when the room temperature is more than 2°C higher than the set temperature. In this case, please wait until the room temperature drops to within 2°C of the set temperature.

COOL mode

Enjoy cool air at your desired temperature.

○ **DRY mode**

Dehumidify your room. The room may be cooled slightly. Temperature cannot be set during DRY mode.

O HEAT mode

Enjoy warm air at your desired temperature.

Emergency operation

When the remote controller cannot be used...

Emergency operation can be activated by pressing the emergency operation switch (E.O.SW) on the indoor unit.



The first 30 minutes of operation is test run. Temperature control does not work, and fan speed is set to High.

Auto restart function

If a power failure occurs or the main power is turned off during operation, "Auto restart function" automatically starts operation in the same mode as the one set with the remote controller just before the shutoff of the main power. When timer is set, timer setting is cancelled and the unit starts operation when power is resumed.

If you do not want to use this function, please consult the service representative because the setting of the unit needs to be changed.

Fan speed and airflow direction adjustment

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FAN

Press ***** to select fan speed. Each press changes fan speed in the following order:

| $\rightarrow @ \rightarrow$ | - | \rightarrow | \rightarrow \sim | → a ¶ — |
|-----------------------------|-----------|-------------------|----------------------|----------------|
| | (Low) | (Med.) | | (Super High) |
| (дото) | (LOW) | (Med.) | (riigir) | (Super High) |
| Two short be | eps are h | neard from the in | door unit whe | n set to AUTO. |

Two short beeps are heard from the indoor unit when set to AUTC

Press to select airflow direction. Each press changes airflow direction in the following order:

| $\rightarrow @ \rightarrow$ | \rightarrow | - → | $\cdot \rightarrow$ | $\cdot \rightarrow$ | A - | → ч — |
|-----------------------------|---------------|-----|---------------------|---------------------|-----|---------|
| (AUTO) | (1) | (2) | (3) | (4) | (5) | (SWING) |

· Two short beeps are heard from the indoor unit when set to AUTO.

Airflow direction

(AUTO).......The vane is set to the most efficient airflow direction. COOL/ DRY:horizontal position. HEAT:position (5).

(Manual)......For efficient air conditioning, select the upper position for COOL/DRY, and the lower position for HEAT. If the position (4) or (5) is selected during COOL/DRY, the vane automatically moves to the horizontal position after 0.5 to 1 hour to prevent any condensation from dripping.

 $\mathbf{\bar{V}}\xspace$ (Swing).......The vane moves up and down intermittently.

■ To change the horizontal airflow direction.

Move the vertical vane manually before starting operation.



ECONO COOL OPERATION



ECONO COOL

Press during COOL mode page 4 to start ECONO COOL operation.

The unit performs swing operation vertically in various cycles according to the temperature of airflow. Set temperature is set 2°C higher automatically.

ECONO COOL

Press again to cancel ECONO COOL operation.
ECONO COOL operation is cancelled when the VANE or POWERFUL COOL button is pressed.

What is "ECONO COOL"?

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



- Fan speed : Exclusive speed for POWERFUL mode Horizontal vane : Set position, or downward airflow position during AUTO setting
- · Temperature cannot be set during POWERFUL COOL operation.

Press again to cancel POWERFUL COOL operation.

 POWERFUL COOL operation also is cancelled automatically in 15 minutes, or when the ON/OFF, FAN, or ECONO COOL button is pressed.

${ m T}_{ m IMER}$ operation (on/off timer)





Set the timer while ⊕→ I or ⊕→○ is blinking.



Note:

- ON and OFF timers can be used in combination. If mark indicates the order of timer operations.
- If power failure occurs while ON/OFF timer is set, see page 4 "Auto restart function".

LEANING

Instructions:

- Switch off the power supply or turn off the breaker before cleaning Be careful not to touch the metal parts with your hands.





- 1. Lift the front panel until a "click" is heard.
- 2. Hold the hinges and pull to remove as shown in the above illustration.
 - Wipe with a soft dry cloth or rinse it with water.
 - Do not soak it in water for more than two hours
 - Dry it well in shade before installing it.

3. Install the front panel by following the removal procedure in reverse. Close the front panel securely and press the positions indicated by the arrows.



- Use only diluted mild detergents.
- Do not expose parts to direct sunlight, heat, or flames to dry.
- . Do not use water hotter than 50°C.

Air cleaning filter (Electrostatic anti-allergy enzyme filter, option)

Back side of air filter **Every 3 months:**

Remove dirt by a vacuum cleaner.

- When dirt cannot be removed by vacuum cleaning:
- Soak the filter and its frame in lukewarm
- water before rinsing it. After washing, dry it well in shade.
- Every year: Replace it with a new air cleaning filter for
- best performance Parts Number MAC-2320FT

Pull to remove from the air filter

Air filter (Nano platinum filter)

- Clean every 2 weeks
- Remove dirt by a vacuum cleaner, or rinse with water.
- Dry it well in shade before installing it.

What is "Nano platinum filter"?

Nano platinum is a ceramic particle that includes a platinum nanoparticle. The particles are incorporated into the filter material, which results in providing semipermanent antibacterial and deodorizing characteristics for the filter. Nano platinum surpasses the catechin (a bioflavonoid that is found in green tea) in performance. Nano platinum filter uses this compound not only to improve air quality but also to eliminate bacteria and viruses. This air filter has a semi-permanent lasting effect even after washing it with water.

Important

- Clean the filters regularly for best performance and to reduce power consumption.
- Dirty filters cause condensation in the air conditioner which will contribute to the growth of fungi such as mold. It is therefore recommended to clean air filters every 2 weeks.

When you think that trouble has occurred

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Even if these items are checked, when the unit does not recover from the trouble, stop using the air conditioner and consult your dealer.

| Symptom | Explanation & Check points |
|--|--|
| Symptom Indoor Unit | Explanation & Check points |
| The unit cannot be operated. | Is the breaker turned on? Is the power supply plug connected? Is the ON timer set? Page 6 |
| The unit cannot be operated for about 3 minutes when restarted. | This protects the unit according to instruc- tions from the microprocessor. Please wait. |
| The fan stops during the DRY operation. | In DRY operation, the unit operates using the same refrigerant circuit as in COOL opera- tion. DRY operation time has to be reduced in order to lower humidity without much room temperature decreasing. So the compres- sor sometimes stops, and at the same time the indoor fan stops. This prevents water condensed on the heat exchanger from evaporating again. |
| Mist is discharged from the air outlet of the indoor unit. | The cool air from the unit rapidly cools mois- ture in the air inside the room, and it turns into mist. |
| The swing operation of the HORIZONTAL VANE is suspended for a while, then restarted. | This is for the swing operation of the HORI- ZONTAL VANE to be performed normally. |
| The air flow direction changes during operation. The direction of the horizontal vane cannot be adjusted with the remote controller. | When the unit is operated in COOL or DRY mode, if the operation continues with air blowing down for 0.5 to 1 hour, the direction of the air flow is automatically set to horizontal position to prevent water from condensing and dripping. In the heating operation, if the air flow temperature is too low or when defrosting is being done, the horizontal vane is automatically set to horizontal position. |
| The operation is stopped for about 10 minutes in the heat- ing operation. | Defrosting of the outdoor unit is being done. Since this is completed in max.10 minutes, please wait. (When the outside temperature is too low and humidity is too high, frost is formed.) |
| The unit starts operation by itself when the main power is turned on, though it isn't operated with the remote controller. | These models are equipped with an auto re- start function. When the main power is turned off without stopping the unit with the remote controller and is turned on again, the unit starts operation automatically in the same mode as the one set with the remote control- ler just before the shutoff of the main power. Refer to "Auto restart function" Page 4. |
| The indoor unit discolors over time. | Although plastic turns yellow due to the influ- ence of some factors such as ultraviolet light and temperature, this has no effect on the product functions. |
| Outdoor Unit | |
| Water leaks from the outdoor unit. | During COOL and DRY operations, pipe or pipe connecting sections are cooled and this causes water to condense. In the heating operation, water condensed on the heat exchanger drips down. In the heating operation, the defrosting op- eration makes water frozen on the outdoor unit melt and drip down. |
| White smoke is discharged from the outdoor unit. | In the heating operation, vapor generated by the defrosting operation looks like white smoke. |

| Symptom | Explanation & Check points |
|---|---|
| Remote controller | • |
| The display on the remote controller does not appear or it is dim. The indoor unit does not respond to the remote control signal. | Are the batteries exhausted? Page 3 Is the polarity (+, -) of the batteries correct? Page 3 Are any buttons on the remote controller of other electric appliances being pressed? |
| The room cannot be cooled or | . In the terms are time particle and reading a |
| heated sufficiently. | Is the temperature setting appropriate? Page 4 Is the fan setting appropriate? Please change fan speed to higher setting. Page 5 Are the filters clean? Page 7 Is the fan or heat exchanger of the indoor unit clean? Are there any obstacles blocking the air inlet or outlet of the indoor or outdoor unit? Is a window or door open? |
| The room cannot be cooled sufficiently. | When a ventilation fan or a gas cooker is used in a room, the cooling load increases, resulting in an insufficient cooling effect. When the outside temperature is high, the cool- ing effect may not be sufficient. |
| The room cannot be heated sufficiently. | When the outside temperature is low, the heat- ing effect may not be sufficient. |
| Air does not blow out soon in the heating operation. | • Please wait as the unit is preparing to blow out warm air. |
| Airflow | - |
| The air from the indoor unit smells strange. | Is the filter clean? Page 7 Is the fan or heat exchanger of the indoor unit clean? The unit may suck in an odor adhering to the wall, carpet, furniture, cloth, etc. and blow it out with the air. |
| Sound | |
| Cracking sound is heard. | • This sound is generated by the expansion/ contraction of the front panel, etc. due to change in temperature. |
| "Burbling" sound is heard. | This sound is heard when the outside air is absorbed from the drain hose by turning on the range hood or the ventilation fan, mak- ing water flowing in the drain hose to spout out. This sound is also heard when the outside air blows into the drain hose in case the outside wind is strong. |
| Mechanical sound is heard from the indoor unit. | This is the switching sound in turning on/off the fan or the compressor. |
| The sound of water flowing is heard. | This is the sound of refrigerant or condensed water flowing in the unit. |

In the following cases, stop using the air conditioner and consult your dealer.

- · When water leaks or drips from the indoor unit.
- When the upper operation indicator lamp blinks.
- When the breaker trips frequently.
- The remote control signal is not received in a room where an electronic ON/OFF
 type fluorescent lamp (inverter-type fluorescent lamp, etc.) is used.
- Operation of the air conditioner interferes with radio or TV reception. An amplifier may be required for the affected device.
- When an abnormal sound is heard.

W HEN THE AIR CONDITIONER IS NOT GOING TO BE USED FOR A LONG TIME



When using the air conditioner again:

| Clean the air filter. Page 7 |
|--|
| 2 Check that the air inlet and outlet of the indoor and outdoor units are not blocked. |
| Check that the earth is connected correctly. |

Refer to the "PREPARATION BEFORE OPERATION", and follow the instructions. Page 3

INSTALLATION PLACE AND ELECTRICAL WORK

Installation place

Avoid installing the air conditioner in the following places.

- Where there is much machine oil.Salty places such as the seaside.
- Where sulfide gas is generated such as a hot spring.
- Where oil is splashed or where the area is filled with oily smoke (such as cooking areas and factories, in which the properties of plastic could be changed and damaged).
- · Where there is high-frequency or wireless equipment.
- Where the air from the outdoor unit air outlet is blocked.
- Where the operation sound or air from the outdoor unit does not bother the house next door.



Electrical work

- Provide an exclusive circuit for the power supply of the air conditioner.
- Be sure to observe the breaker capacity.

If you have any questions, consult your dealer.

Specifications

Guaranteed operating range

| | | Indoor | Outdoor |
|----------|-------------|--------------------|----------------------|
| Caoling | Upper limit | 35°C DB 24°C WB | 46°C DB — |
| Cooling | Lower limit | 21°C DB 15°C WB | 21°C DB — |
| Lippting | Upper limit | 27°C DB — | 24°C DB 18°C WB |
| Heating | Lower limit | 20°C DB — | -10°C DB -11°C WB |
| | · | | |

DB: Dry Bulb WB: Wet Bulb