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## **OWNER'S MANUAL**

# **VMH\*\*V Series Multi-Zone Outdoor Units**

### **Model**

A-VMH18DV-1

A-VMH28TV-1

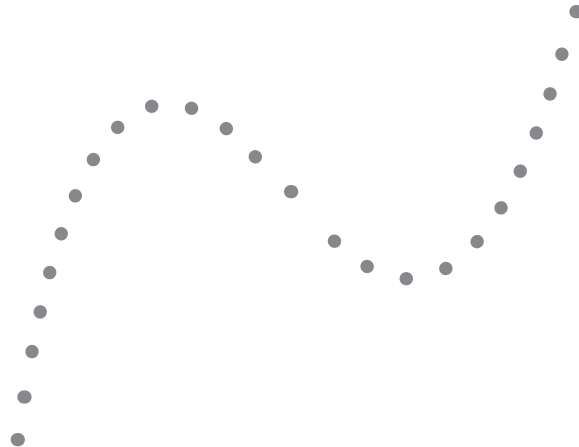
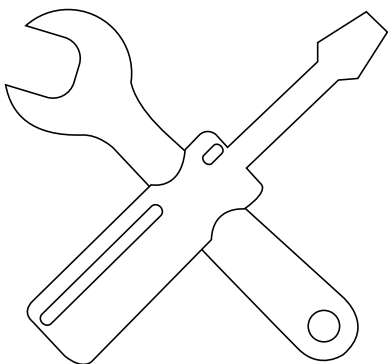
A-VMH36QV-1

A-VMH48PV-1

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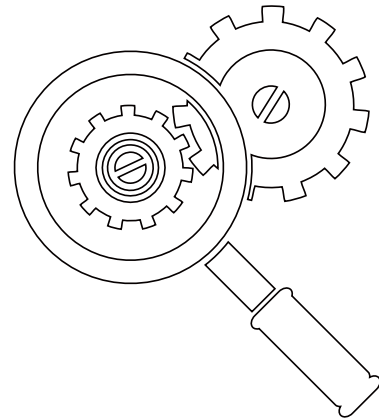
Owner's Manual

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**WARNING:** Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of a person competent in the use of refrigerants. For more details, please refer to the information on servicing in the INSTALLATION MANUAL.

# Safety Precautions

# 1

Thank you for purchasing this air conditioner. This manual will provide you with information on how to operate, maintain, and troubleshoot your air conditioner. Following the instructions will ensure the proper function and extended lifespan of your unit.

Please pay attention to the following signs:



**WARNING**

Failure to observe a warning may result in death. The appliance must be installed in accordance with national regulations.



**CAUTION**

Failure to observe a caution may result in injury or equipment damage.

## **WARNING**

- Ask an authorized dealer to install this air conditioner. Inappropriate installation may cause water leakage, electric shock, or fire.
- The warranty will be voided if the unit is not installed by professionals.
- If abnormal situation arises (like burning smell), turn off the power supply and call your dealer for instructions to avoid electric shock, fire or injury.
- **DO NOT** let the indoor unit or the remote control get wet. It may cause electric shock or fire.
- **DO NOT** insert fingers, rods or other objects into the air inlet or outlet. This may cause injury, since the fan may be rotating at high speeds.
- **DO NOT** use a flammable spray such as hair spray, lacquer or paint near the unit. This may cause fire or combustion.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored so as to prevent mechanical damage from occurring.
- Be aware that the refrigerants may not contain an odor.
- Compliance with national gas regulations shall be observed.

- Keep ventilation openings clear of obstruction.
- **DO NOT** pierce or burn.
- A warning that the appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry recognized assessment specification.
- Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.

## **!** CAUTION

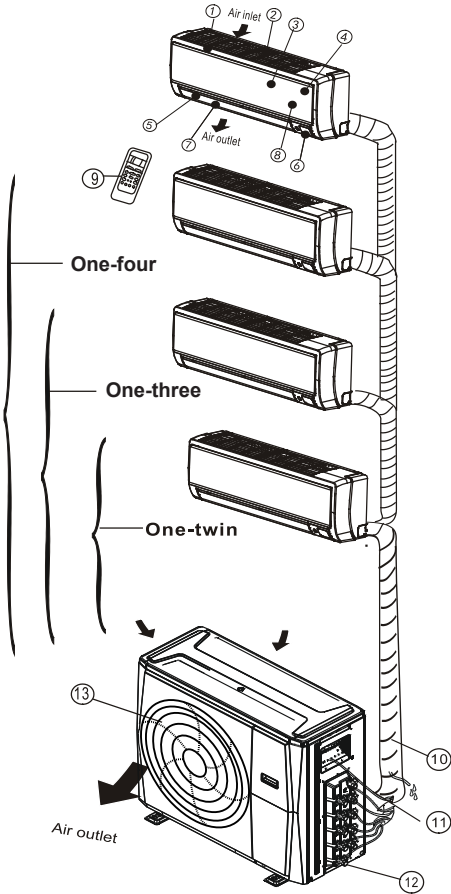
- **DO NOT** touch the air outlet while the louver flap is in motion. Fingers might get caught or the unit may break down.
  - **DO NOT** inspect the unit by yourself. Ask an authorized dealer to perform the inspection.
  - To prevent product deterioration, do not use the air conditioner for preservation purposes (storage of food, plants, animals, works of art, etc.).
  - **DO NOT** touch the evaporator coils inside the indoor unit. The evaporator coils are sharp and may cause injury.
  - **DO NOT** operate the air conditioner with wet hands. It may cause electric shock.
  - **DO NOT** place items that might be affected by moisture damage under the indoor unit. Condensation can occur at a relative humidity of 80%.
  - **DO NOT** expose heat-producing appliances to cold air or place them under the indoor unit. This may cause incomplete combustion or deformation of the unit due to the heat.
  - After long periods of usage, check the indoor unit to see if anything is damaged. If the indoor unit is damaged, it may fall and cause injury.
  - If the air conditioner is used together with other heating devices, thoroughly ventilate the room to avoid oxygen deficiency.
  - **DO NOT** climb onto or place objects on top of the outdoor unit.
  - **DO NOT** operate the air conditioner when using fumigant insecticides. The chemicals may become layered with the unit and endanger those who are hypersensitive to chemicals.
  - **DO NOT** let children play with the air conditioner.
  - **DO NOT** operate the air conditioner in a wet room (e.g. bathroom or laundry room). This can cause electrical shock and cause the product to deteriorate.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children .

# Unit Parts And Major Functions

# 2

## Unit Parts

### Wall-mounted type



### Duct / Ceiling type

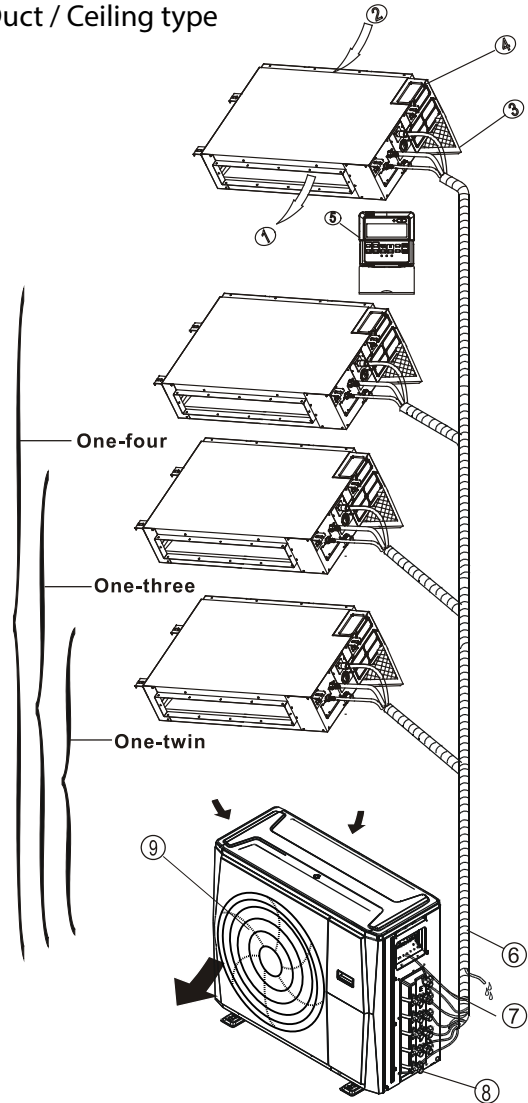


Fig. 2.1

### Indoor unit

1. Panel frame
2. Rear air intake grille
3. Front panel
4. Air purifying filter & Air filter(behind)
5. Horizontal louver
6. LCD display window
7. Vertical louver
8. Manual control button(behind)
9. Remote controller holder

### Outdoor unit

10. Drain hose, refrigerant connecting pipe
11. Connective cable
12. Stop valve
13. Fan hood

Fig. 2.2

### Indoor unit

1. Air outlet
2. Air inlet
3. Air filter
4. Electric control cabinet
5. Wire controller

### Outdoor unit

6. Drain hose, refrigerant connecting pipe
7. Connective cable
8. Stop valve
9. Fan hood

Floor and standing type(console)

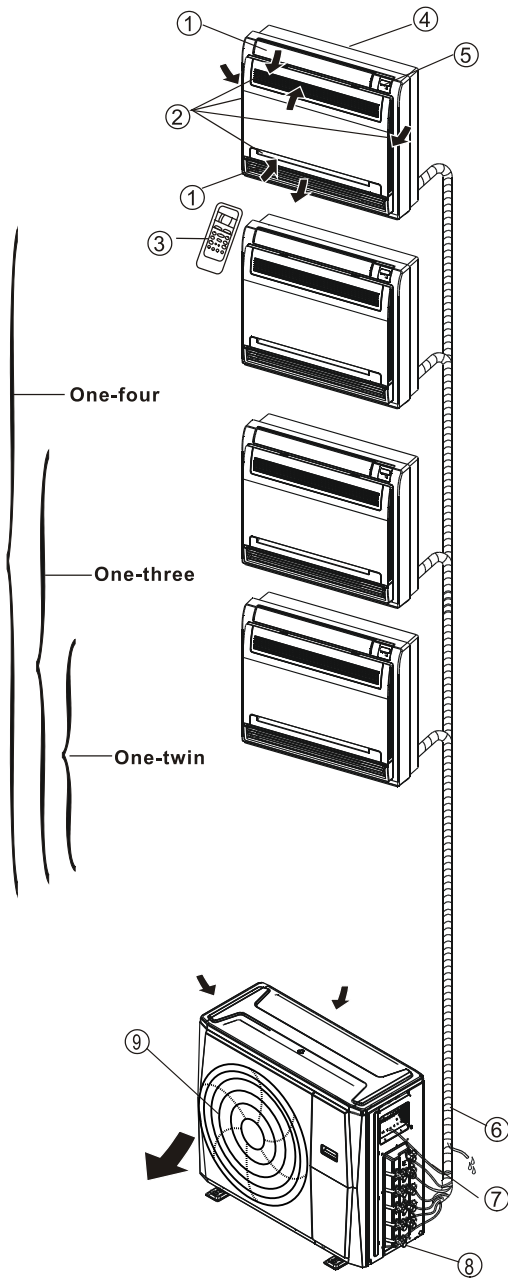


Fig. 2.3

**Indoor unit**

1. Air flow louver (at air outlet)
2. Air inlet (containing air filter)
3. Remote controller
4. Installation part
5. Display panel

**Outdoor unit**

6. Drain hose, refrigerant connecting pipe
7. Connective cable
8. Stop valve
9. Fan hood

Compact four-way cassette type

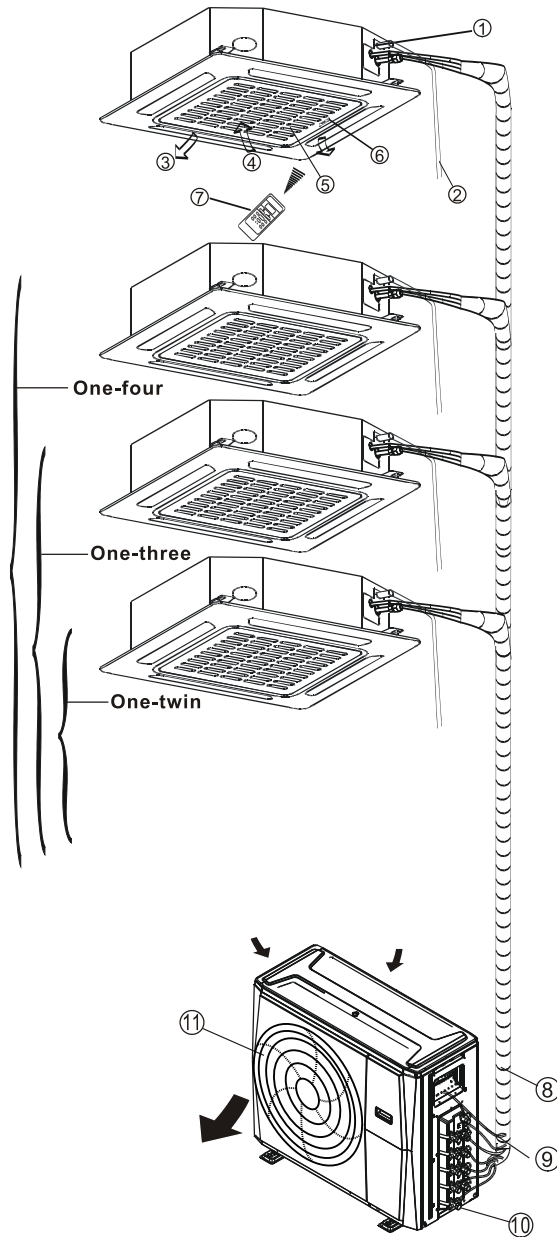


Fig. 2.4

**Indoor unit**

1. Drain pump(drain water from indoor unit)
2. Drain hose
3. Air outlet
4. Air inlet
5. Air-in grill
6. Display panel
7. Remote controller

**Outdoor unit**

8. refrigerant connecting pipe
9. Connective cable
10. Stop valve
11. Fan hood

**NOTE:** For multi-split type air conditioners, one outdoor unit can be matched to different types of indoor units. All of the pictures in this manual are for demonstration purposes only. Your air conditioner may be slightly different, if similar in shape. The following pages introduce several kinds of indoor units that can be matched with the outdoor units.

## Operating Conditions

Use the system under the following temperatures for safe and effective operation. If the air conditioner is used under different conditions, it may malfunction or become less efficient.

	COOL Mode	HEAT mode	DRY mode
Indoor Temperature	17-32°C(62-90°F)	0-30°C (32-86°F)	17-32°C(62-90°F)

## Features

### Protection of the air conditioner Compressor protection

- The compressor cannot restart for 3 minutes after it stops.

### Anti-cold air (Cooling and heating models only)

- The unit is designed not to blow cold air on HEAT mode, when the indoor heat exchanger is in one of the following three situations and the set temperature has not been reached.
  - A) When heating has just started.
  - B) During defrosting.
  - C) Low temperature heating.
- The indoor or outdoor fan stops running when defrosting (Cooling and heating models only).

### Defrosting (Cooling and heating models only)

- Frost may be generated on the outdoor unit during a heat cycle when outdoor temperature is low and humidity is high resulting in lower heating efficiency in the air conditioner.
- Under these conditions, the air conditioner will stop heating operations and start defrosting automatically.
- The time to defrost may vary from 4 to 10 minutes, depending the outdoor temperature and the amount of frost buildup on the outdoor unit.

### Auto-Restart (some models)

In case of power failure, the system will immediately stop. When power returns, the Operation light on the indoor unit will flash. To restart the unit, press the **ON/OFF** button on the remote control. If the system has an auto restart function, the unit will restart using the same settings.

### White mist emerging from the indoor unit

- A white mist may be generated due to a large temperature difference between air inlet and air outlet on COOL mode in places with high relative humidity.
- A white mist may be generated due to moisture created in the defrosting process when the air conditioner restarts in HEAT mode operation after defrosting.

### Noise coming from the air conditioner

- You may hear a low hissing sound when the compressor is running or has just stopped running. This sound is the sound of the refrigerant flowing or coming to a stop.
- You may also hear a low "squeaking" sound when the compressor is running or has just stopped running. This is caused by heat expansion and cold contraction of the plastic parts in the unit when the temperature is changing.
- A noise may be heard due to the louver restoring itself to its original position when power is first turned on.

### Dust blowing out from the indoor unit.

This happens when the air conditioner has not been used for a long time or during its first use.

### Smell emitting from the indoor unit.

This is caused by the indoor unit giving off smells permeated from building materials, furniture, or smoke.



The air conditioner turns to **FAN ONLY mode from COOL or HEAT (for cooling and heating models only) mode.**

When the indoor temperature reaches the set temperature setting, the compressor will stop automatically, and the air conditioner turns to FAN only mode. The compressor will start again when the indoor temperature rises on COOL mode or falls on HEAT mode to the set point.

Droplets of water may form on the surface of the indoor unit when cooling occurs in relatively high humidity (defined as higher than 80%). Adjust the horizontal louver to the maximum air outlet position and select HIGH fan speed.

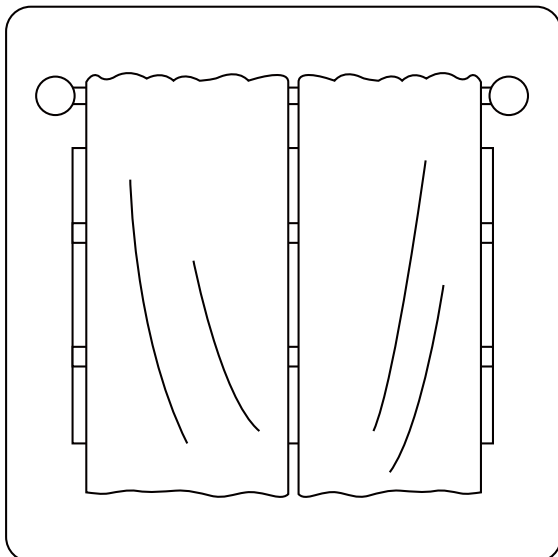
**Heating mode (For cooling and heating models only)**

The air conditioner draws in heat from the outdoor unit and releases it via the indoor unit during heating. When the outdoor temperature falls, heat drawn in by the air conditioner decreases accordingly. At the same time, heat loading of the air conditioner increases due to larger difference between indoor and outdoor temperature. If a comfortable temperature cannot be achieved with the air conditioner alone, it is recommended that you use a supplementary heating device.

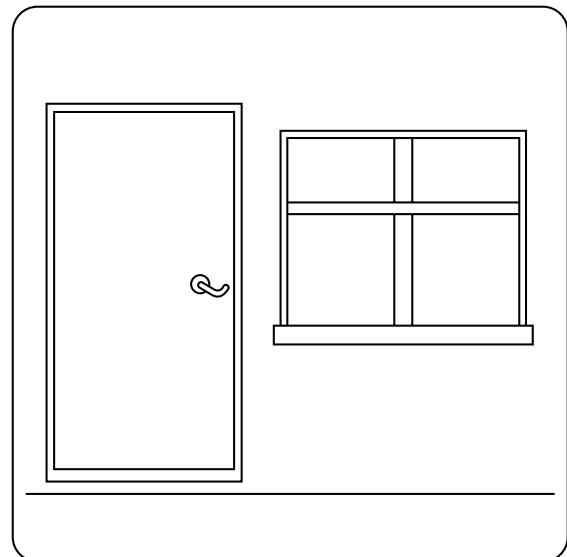
Lightning or a car wireless telephone operating nearby may cause the unit to malfunction. Disconnect the unit from its power source and then re-connect the unit with the power source again. Push the ON/OFF button on the remote controller to restart operations.

### Energy Saving Tips

- **DO NOT** set the unit to excessive temperature levels.
- While cooling, close the curtains to avoid direct sunlight.
- Doors and windows should be kept closed to keep cool or warm air in the room.
- **DO NOT** place objects near the air inlet and outlet of the unit. This will reduce the efficiency of the unit.
- Set a timer and use the built-in SLEEP/ECONOMY mode if applicable.
- If you don't plan to use the unit for a long time, remove the batteries from the remote control.
- Clean the air filter every two weeks. A dirty filter can reduce cooling or heating efficiency.
- Adjust louvers properly and avoid direct airflow.



Closing curtains during heating also helps keep the heat in



Doors and windows should be kept closed

# Manual Operations And Maintenance

# 3

## Operation mode selection

While two or more indoor units are simultaneously operating, make sure the modes do not conflict with each other. The heat mode claims precedence over all other modes. If the unit initially started to operate in HEAT mode, the other units can operate in HEAT mode only. For example: If the unit initially started operates under COOL (or FAN) mode, the other units can operate under any mode except HEAT. If one of the unit selects HEAT mode, the other operating units will stop operation and display "--" (for units with display window only) or the auto and operation indication light will flash rapidly, the defrost indication light will turn off, and the timer indication light will remain on (for units without a display window). Alternatively, the defrost and alarm indication light (if applicable) will light up, or the operation indication light will flash rapidly, and the timer indication light will turn off (for the floor and standing type).

## Maintenance

If you plan to leave the unit idle for a long time, perform the following tasks:

1. Clean the indoor unit and air filter.
2. Select FAN ONLY mode and let the indoor fan run for a time to dry the inside of the unit.
3. Disconnect the power supply and remove the battery from the remote control.
4. Check components of the outdoor unit periodically. Contact a local dealer or a customer service centre if the unit requires servicing.

**NOTE:** Before you clean the air conditioner, be sure to switch off the unit and disconnect the power supply plug.

## Optimal operation

To achieve optimal performance, please note the following:

- Adjust the direction of the air flow so that it is not blowing directly on people.
- Adjust the temperature to achieve the highest possible level of comfort. Do not adjust the unit to excessive temperature levels.
- Close doors and windows in COOL mode or HEAT mode.
- Use the TIMER ON button on the remote controller to select a time you want to start your air conditioner.
- Do not place any object near the air inlet or air outlet, as the efficiency of the air conditioner may be reduced and the air conditioner may stop running.
- Clean the air filter periodically, otherwise cooling or heating performance may be reduced.
- Do not operate unit with horizontal louver in closed position.

## When the air conditioner is to be used again:

- Use a dry cloth to wipe off the dust accumulated on the rear air intake grille in order to avoid the dust being dispersed from the indoor unit.
- Check that the wiring is not broken off or disconnected.
- Check that the air filter is installed.
- Check if the air outlet or inlet is blocked after the air conditioner has not been used for a long time.

# Troubleshooting

# 4

## ! CAUTIONS

If one of the following conditions occurs, switch off the power supply immediately and contact your dealer for further assistance.

- The operation light continues to flash rapidly after the unit has been restarted.
- The remote control buttons do not work after replacing batteries.
- The unit continually trips fuses or circuit breakers.
- A foreign object or water enters the air conditioner.
- Other abnormal situations.

## Common Problems

The following symptoms are not a malfunction and in most situations will not require repairs.

Problem	Possible Causes
<b>Unit does not turn on when pressing ON/OFF button</b>	The unit has a 3-minute protection feature that prevents the unit from overloading. The unit cannot be restarted within three minutes of being turned off.
	Cooling and Heating Models: If the Operation light and PRE-DEF (Pre-heating/Defrost) indicators are lit up, the outdoor temperature is too cold and the unit's anti-cold wind is activated in order to defrost the unit.
<b>The unit changes from COOL mode to FAN mode</b>	The unit changes its setting to prevent frost from forming on the unit. Once the temperature increases, the unit will start operating again.
	The set temperature has been reached, at which point the unit turns off the compressor. The unit will resume operating when the temperature fluctuates again.
<b>The indoor unit emits white mist</b>	In humid regions, a large temperature difference between the room's air and the conditioned air can cause white mist.
<b>Both the indoor and outdoor units emit white mist</b>	When the unit restarts in HEAT mode after defrosting, white mist may be emitted due to moisture generated from the defrosting process.

Problem	Possible Causes
<b>The indoor unit makes noises</b>	A squeaking sound is heard when the system is OFF or in COOL mode. The noise is also heard when the drain pump (optional) is in operation.
	A squeaking sound may occur after running the unit in HEAT mode due to expansion and contraction of the unit's plastic parts.
<b>Both the indoor unit and outdoor unit make noises</b>	A low hissing sound may occur during operation. This is normal and is caused by refrigerant gas flowing through both the indoor and outdoor units.
	A low hissing sound may be heard when the system starts, has just stopped running or is defrosting. This noise is normal and is caused by the refrigerant gas stopping or changing direction.
<b>The outdoor unit makes noises</b>	The unit will make different sounds based on its current operating mode.
<b>Dust is emitted from either the indoor or outdoor unit</b>	The unit may accumulate dust during extended periods of non-use, which will be emitted when the unit is turned on. This can be mitigated by covering the unit during long periods of inactivity.
<b>The unit emits a bad odor</b>	The unit may absorb odors from the environment (such as furniture, cooking, cigarettes, etc.) which will be emitted during operation.
	The unit's filters have become moldy and should be cleaned.
<b>The fan of the outdoor unit does not operate</b>	During operation, the fan speed is controlled to optimize product operation.

## Troubleshooting Tips

When troubles occur, please check the following points before contacting a repair company.

Problem	Possible Causes	Solution
<b>The unit is not working</b>	Power failure	Wait for the power to be restored
	The power switch is off	Turn on the power
	The fuse is burned out	Replace the fuse
	Remote control batteries are dead	Replace the remote control batteries
	The unit's 3-minute protection has been activated	Wait three minutes after restarting the unit
<b>Poor cooling performance</b>	Temperature setting may be higher than the ambient room temperature	Lower the temperature setting
	The heat exchanger on the indoor or outdoor unit is dirty	Clean the affected heat exchanger
	The air filter is dirty	Remove the filter and clean it according to instructions
	The air inlet or outlet of either unit is blocked	Turn the unit off, remove the obstruction and turn it back on
	Doors and windows are open	Make sure that all doors and windows are closed while operating the unit
	Excessive heat is generated by sunlight	Close windows and curtains during periods of high heat or bright sunshine
	Low refrigerant due to leak or long-term use	Check for leaks, re-seal if necessary and top off refrigerant
<b>The unit starts and stops frequently</b>	There's too much or too little refrigerant in the system	Check for leaks and recharge the system with refrigerant
	There is air, incompressible gas or foreign material in the refrigeration system.	Evacuate and recharge the system with refrigerant
	System circuit is blocked	Determine which circuit is blocked and replace the malfunctioning piece of equipment
	The compressor is broken	Replace the compressor
	The voltage is too high or too low	Wait for voltage to stabilize
<b>Poor heating performance</b>	The outdoor temperature is lower than 7°C (44.5°F)	Check for leaks and recharge the system with refrigerant
	Cold air is entering through doors and windows	Make sure that all doors and windows are closed during use
	Low refrigerant due to leak or long-term use	Check for leaks, re-seal if necessary and top off refrigerant

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### LIMITED EXPRESS WARRANTY

Congratulations on purchasing your new HVAC equipment. It's been designed for long life and reliable service, and is backed by one of the strongest warranties in the industry. Your unit automatically qualifies for the warranty coverage listed below, providing you keep your proof of purchase (receipt) for the equipment and meet the warranty conditions.

#### LIMITED TEN (10) YEAR EXPRESS WARRANTY

MARS warrants all parts including the compressor of the VMH-SV Series Ductless Mini-Split to be free from defects in workmanship and materials for normal use and maintenance for ten (10) years from the date of purchase by the original consumer for the original installation. This Express Limited Warranty applies only when the Ductless Mini-Split is installed as a complete matched system: outdoor unit and indoor unit, and only when the system is installed per MARS installation instructions and in accordance with all local, state and national codes for normal use.

#### EXCEPTIONS

The Limited Express Warranty does not cover normal maintenance—MARS recommends that regular inspection/maintenance be performed at least once a season and proof of maintenance be kept. Additionally, labor charges, transportation charges for replacement parts, replacement of refrigerant or filters, any other service calls/repairs are not covered by this Limited Warranty. It also does not cover any portion or component of the system that is not supplied by MARS, regardless of the cause of failure of such portion or component.

#### CONDITIONS FOR WARRANTY COVERAGE

- Unit must be operated according to MARS operating instructions included with the unit and cannot have been subjected to accident, alteration, improper repair, neglect or misuse, or an act of God (such as a flood)
- Installation was done by a trained, licensed or otherwise qualified HVAC dealer/contractor
- Performance cannot be impaired by use of any product not authorized by MARS, or by any adjustments or adaptations to components
- Serial numbers and/or rating plate have not been altered or removed
- Damage has not been a result of inadequate wiring or voltage conditions, use during brown-out conditions, or circuit interruptions
- Air flow around any section of the unit has not been restricted
- Unit remains in the original installation
- Unit was not purchased over the internet

#### DURATION OF WARRANTY & REGISTRATION

The warranty begins on the date of purchase by the original consumer. The consumer must retain a receipted bill of sale as proof of warranty period. Without this proof, the express warranty begins on the date of shipment from the factory.

#### REMEDY PROVIDED BY THE LIMITED EXPRESS WARRANTY

The sole remedy under the Limited Warranty is replacement of the defective part. If replacement parts are required within the period of this warranty, MARS replacement parts shall be used; any warranty on the replacement part(s) shall not affect the applicable original unit warranty. Ready access to the unit for service is the owner's responsibility. Labor to diagnose and replace the defective part is not covered by this Limited Express Warranty. If for any reason the replacement part/product is no longer available during the warranty period, MARS shall have the right to allow a credit in the amount of the current suggested retail price of the part/product instead of providing repair or replacement.

#### LIMITATION OF LIABILITY

1. There are no other express or implied warranties. MARS makes no warranty of merchantability. We do not warrant that the unit is suitable for any particular purpose or can be used in buildings or rooms of any particular size or condition except as specifically provided in this document. There are no other warranties, express or implied, which extend beyond the description in this document.
2. All warranties implied by law are limited in duration to the seven-year term of the parts warranty. Your exclusive remedy is limited to the replacement of defective parts. **We will not be liable for any consequential or incidental damages caused by any defect in this unit.**
3. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. Some states do not allow limitation on how long an implied warranty lasts or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.
4. No warranties are made for units sold outside the continental United States and Canada. Your distributor or final seller may provide a warranty on units sold outside these areas.
5. MARS will not be liable for damages if our performance regarding warranty resolution is delayed by events beyond our control including accident, alteration, abuse, war, government restrictions, strikes, fire, flood, or other acts of God.

#### HOW TO OBTAIN WARRANTY SERVICE OR PARTS

If you have a warranty claim, notify your installer promptly. If the installer does not remedy your claim, write to MARS, 1900 Wellworth Ave., Jackson MI 49203. Enclose a report of inspection by your installer or service person. Include model number, serial number, and date of purchase.

**Owner responsibilities are set forth in the instruction manual—read it carefully.**

**Please visit [www.marsdelivers.com](http://www.marsdelivers.com) to register your new product**



#### KEEP THIS INFORMATION AS A RECORD OF YOUR PURCHASE

Outdoor Unit: Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Indoor Unit 1: Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Indoor Unit 2: Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Indoor Unit 3: Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Indoor Unit 4: Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Indoor Unit 5: Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Date of Purchase \_\_\_\_\_

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Due to ongoing product improvements, specifications and dimensions are subject to change and correction without notice or incurring obligations. Determining the application and suitability for use of any product is the responsibility of the installer. Additionally, the installer is responsible for verifying dimensional data on the actual product prior to beginning any installation preparations.

Incentive and rebate programs have precise requirements as to product performance and certification. All products meet applicable regulations in effect on date of manufacture; however, certifications are not necessarily granted for the life of a product. Therefore, it is the responsibility of the applicant to determine whether a specific model qualifies for these incentive/rebate programs.



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