TOSIBA
Leading Innovation

AIR CONDITIONER (MULTI TYPE)
Owner's Manual

Air to Air Heat Exchanger
with DX Coil Unit

Model name:

Model with a humidifier
MMD-VNK502HEXE
MMD-VNK802HEXE
MMD-VNK1002HEXE

Model without a humidifier
MMD-VN502HEXE
MMD-VN802HEXE
MMD-VN1002HEXE

For commercial use
Air to Air Heat Exchanger with DX Coil Unit

Original instruction

Thank you very much for purchasing TOSHIBA Air to Air Heat Exchanger with DX (direct expansion) Coil (& Humidifier).

Please read this owner’s manual carefully before using your Air to Air Heat Exchanger with DX Coil Unit.

• Obtain the “Owner’s manual” and “Installation manual” from constructor (or dealer).

• Request to constructor or dealer

• Please clearly explain the contents of the Owner’s manual and hand over it.

ADOPITION OF NEW REFRIGERANT

This Air to Air Heat Exchanger with DX Coil Unit adopts a new refrigerant HFC (R410A) instead of the conventional refrigerant R22 in order to prevent destruction of the ozone layer.

This appliance is not intended for use by person (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 appliance by a person responsible for their safety.

Contents

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Precautions for Safety</td>
</tr>
<tr>
<td>2</td>
<td>Part Names</td>
</tr>
<tr>
<td>3</td>
<td>System Configuration</td>
</tr>
<tr>
<td>4</td>
<td>Part Names and Functions of the Remote Controller</td>
</tr>
<tr>
<td>5</td>
<td>How to Use</td>
</tr>
<tr>
<td>6</td>
<td>Timer Operation</td>
</tr>
<tr>
<td>7</td>
<td>Installation</td>
</tr>
<tr>
<td>8</td>
<td>Air Conditioner Operations and Performance</td>
</tr>
<tr>
<td>9</td>
<td>Maintenance</td>
</tr>
<tr>
<td>10</td>
<td>When the Following Symptoms are Found</td>
</tr>
<tr>
<td>11</td>
<td>Specifications</td>
</tr>
</tbody>
</table>

A qualified installer or qualified service person is an agent who has the qualifications and knowledge described in the table below.

<table>
<thead>
<tr>
<th>Agent</th>
<th>Qualifications and knowledge which the agent must have</th>
</tr>
</thead>
</table>
| • Qualified installer | The qualified installer is a person who installs, maintains, relocates and removes the Air to Air Heat Exchanger with DX Coil Unit made by Toshiba Carrier Corporation. He or she has been trained to install, maintain, relocate and remove the Air to Air Heat Exchanger with DX Coil Unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations.

The qualified installer who is allowed to do the electrical work involved in installation, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the Air to Air Heat Exchanger with DX Coil Unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.

The qualified installer who is allowed to do the refrigerant handling and piping work involved in installation, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the Air to Air Heat Exchanger with DX Coil Unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.

The qualified installer who is allowed to work at heights has been trained in matters relating to working at heights with the Air to Air Heat Exchanger with DX Coil Unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.

• Qualified service person | The qualified service person is a person who installs, repairs, maintains, relocates and removes the Air to Air Heat Exchanger with DX Coil Unit made by Toshiba Carrier Corporation. He or she has been trained to install, repair, maintain, relocate and remove the Air to Air Heat Exchanger with DX Coil Unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to these operations.

The qualified service person who is allowed to do the electrical work involved in installation, repair, relocation and removal has the qualifications pertaining to this electrical work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to electrical work on the Air to Air Heat Exchanger with DX Coil Unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.

The qualified service person who is allowed to do the refrigerant handling and piping work involved in installation, repair, relocation and removal has the qualifications pertaining to this refrigerant handling and piping work as stipulated by the local laws and regulations, and he or she is a person who has been trained in matters relating to refrigerant handling and piping work on the Air to Air Heat Exchanger with DX Coil Unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such operations by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.

The qualified service person who is allowed to work at heights has been trained in matters relating to working at heights with the Air to Air Heat Exchanger with DX Coil Unit made by Toshiba Carrier Corporation or, alternatively, he or she has been instructed in such matters by an individual or individuals who have been trained and is thus thoroughly acquainted with the knowledge related to this work.
## Warning Indications on the Air to Air Heat Exchanger with DX Coil Unit

<table>
<thead>
<tr>
<th>Warning indication</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WARNING ELECTRICAL SHOCK HAZARD</td>
<td>Disconnect all remote electric power supplies before servicing.</td>
</tr>
<tr>
<td>WARNING</td>
<td>Moving parts. Do not operate unit with inspection cover removed. Stop the unit before the servicing.</td>
</tr>
<tr>
<td>CAUTION</td>
<td>High temperature parts. You might get burned when removing this cover.</td>
</tr>
<tr>
<td>CAUTION</td>
<td>Do not touch the aluminum fins of the unit. Doing so may result in injury.</td>
</tr>
</tbody>
</table>

### Precautions for Safety

#### WARNING

**General**
- Carefully read Owner’s Manual before starting the Air to Air Heat Exchanger with DX Coil Unit. There are many important things to keep in mind for daily operation.
- Ask for installation to be performed by the dealer or a professional. Only a qualified installer (*1) is able to install an Air to Air Heat Exchanger with DX Coil Unit. If a non-qualified person installs an Air to Air Heat Exchanger with DX Coil Unit, it may result in problems such as fire, electric shock, injury, water leakage, noise and vibration.
- Do not expose your body to cool air directly for a long time and do not cool yourself excessively.
- Do not wash the Air to Air Heat Exchanger with DX Coil Unit. Doing so may result in electric shock.
- When the Air to Air Heat Exchanger with DX Coil Unit is operated with a combustion appliance in the same place, be careful of ventilation to let fresh air enter the room. Poor ventilation causes oxygen shortage.
- Be sure to stop running the air conditioner and turn off the breaker before cleaning.
- When stacking the packing cartons for storage or transportation, read the precautions written on the packing cartons. Failure to heed the precautions may cause the stack to collapse.
- You shall ensure that the Air to Air Heat Exchanger with DX Coil Unit is transported in stable condition. If you find any part of the product broken, contact your dealer.
- Only a qualified installer(*1) or qualified service person(*1) is allowed to carry out the electrical work of the Air to Air Heat Exchanger with DX Coil Unit. Under no circumstances must this work be done by an unqualified individual since failure to carry out the work properly may result in electric shocks and/or electrical leaks.
- After the installation work has been completed, have the installer explain about the circuit breaker positions. In the event that trouble has occurred in the Air to Air Heat Exchanger with DX Coil Unit, set the circuit breaker to the OFF position, and contact a service person, (*1)
- If you install the unit in a small room, take appropriate measures to prevent the refrigerant from exceeding the limit concentration even if it leaks. Consult the dealer from whom you purchased the air conditioner when you implement the measures. Accumulation of highly concentrated refrigerant may cause an oxygen deficiency accident.
- Do not install the Air to Air Heat Exchanger with DX Coil Unit in a location that may be subject to a risk of expire to a combustible gas. If a combustible gas leaks and becomes concentrated around the unit, a fire may occur.
- Be sure to use the company-specified products for the separately purchased parts. Use of non-specified products may result in fire, electric shock, water leakage, etc. Have the installation performed by a professional.
- Confirm that earthing is performed correctly.

**Transportation and storage**
- Transport it by the truck or the forklift. Transport it by six people or more when the person transports it temporarily. The waist etc. might be hurt when not following it.
- When transporting the Air to Air Heat Exchanger with DX Coil Unit, wear shoes with protective toe caps, protective gloves, and other protective clothing.
- When transporting the Air to Air Heat Exchanger with DX Coil Unit, do not take hold of the bands around the packing cartons. You may injure yourself if the bands should break.
- When stacking the packing cartons for storage or transportation, read the precautions written on the packing cartons. Failure to heed the precautions may cause the stack to collapse.
- You shall ensure that the Air to Air Heat Exchanger with DX Coil Unit is transported in stable condition. If you find any part of the product broken, contact your dealer.

**Installation**
- Only a qualified installer(*1) or qualified service person(*1) is allowed to carry out the electrical work of the Air to Air Heat Exchanger with DX Coil Unit. Under no circumstances must this work be done by an unqualified individual since failure to carry out the work properly may result in electric shocks and/or electrical leaks.
- After the installation work has been completed, have the installer explain about the circuit breaker positions. In the event that trouble has occurred in the Air to Air Heat Exchanger with DX Coil Unit, set the circuit breaker to the OFF position, and contact a service person, (*1)
- If you install the unit in a small room, take appropriate measures to prevent the refrigerant from exceeding the limit concentration even if it leaks. Consult the dealer from whom you purchased the air conditioner when you implement the measures. Accumulation of highly concentrated refrigerant may cause an oxygen deficiency accident.
- Do not install the Air to Air Heat Exchanger with DX Coil Unit in a location that may be subject to a risk of expire to a combustible gas. If a combustible gas leaks and becomes concentrated around the unit, a fire may occur.
- Be sure to use the company-specified products for the separately purchased parts. Use of non-specified products may result in fire, electric shock, water leakage, etc. Have the installation performed by a professional.
- Confirm that earthing is performed correctly.
Operation
- Before opening the electrical control cover or inspection cover or maintenance cover of the Air to Air Heat Exchanger with DX Coil Unit, set the circuit breaker to the OFF position. Failure to set the circuit breaker to the OFF position may result in electric shocks through contact with the interior parts. Only a qualified installer(*)1 or qualified service person(*)1 is allowed to remove the electrical control cover or inspection cover or maintenance cover of the Air to Air Heat Exchanger with DX Coil Unit and do the work required.
- Inside the Air to Air Heat Exchanger with DX Coil Unit are high-voltage areas and rotating parts. Due to the danger of electric shocks or of your fingers or physical objects becoming trapped in the rotating parts, do not remove the electrical control cover, inspection cover or maintenance cover of the Air to Air Heat Exchanger with DX Coil Unit. When work involving the removal of these parts is required, contact a qualified installer or a qualified service person.
- Do not modify the products. Do not also disassemble or modify the parts. It may cause a fire, electric shock or injury.
- Use of a stand more than 50 cm high to clean the filter or heat exchange element of the Air to Air Heat Exchanger with DX Coil Unit or to carry out other such jobs constitutes working at heights. Due to the danger of falling off the stand and injuring yourself while working at heights, this kind of work should not be done by unqualified individuals. When this kind of work must be carried out, do not do it yourself but ask a qualified installer(*)1 or a qualified service person(*)1 to do it for you.
- Do not touch the aluminum fin of the Air to Air Heat Exchanger with DX Coil Unit or outdoor unit. You may injure yourself if you do so. If the fin must be touched, do not touch it yourself but contact a qualified installer(*)1 or a qualified service person(*)1.
- Never insert your finger or a stick into the air intake or outlet. Doing so may result injury as the fan is rotating at high speed inside the unit.
- Be sure to stop running the Air to Air Heat Exchanger with DX Coil Unit and turn off the breaker before cleaning. Otherwise, Injury may result as the fan is rotating at high speed inside the unit.
- Do not run or stop running the unit when flammable gas is leaking. A gas explosion may occur. Open the window to ventilate the room if flammable gas is leaking.

Repairs
- When you have noticed that some kind of trouble (such as when an error display has appeared, there is a smell of burning, abnormal sounds are heard, the Air to Air Heat Exchanger with DX Coil Unit falls to cool, heat or water is leaking) has occurred in the Air to Air Heat Exchanger with DX Coil Unit, do not touch the Air to Air Heat Exchanger with DX Coil Unit yourself but set the circuit breaker to the OFF position, and contact a qualified service person(*)1. Take steps to ensure that the power will not be turned on (by marking “out of service” near the circuit breaker, for instance) until qualified service person arrives. Continuing to use the Air to Air Heat Exchanger with DX Coil Unit in the trouble status may cause mechanical problems to escalate or result in electric shocks, or other failure.
- If you have discovered that there is a danger of the Air to Air Heat Exchanger with DX Coil Unit’s falling, do not approach the Air to Air Heat Exchanger with DX Coil Unit but set the circuit breaker to the OFF position, and contact a qualified installer(*)1 or a qualified service person(*)1 to refit the unit. Do not set the circuit breaker to the ON position until the unit has been refitted.
- Do not move or repair any unit by yourself. Since there is high voltage inside the unit, you may get electric shock when removing the cover and main unit.
- Do not modify the products. Do not also disassemble or modify the parts. It may cause a fire, electric shock or injury.
- Do not touch any switches with wet finger, otherwise you may get an electric shock.

Relocation
- When the Air to Air Heat Exchanger with DX Coil Unit is to be relocated, do not relocate it yourself but contact a qualified installer(*)1 or a qualified service person(*)1. Failure to relocate the Air to Air Heat Exchanger with DX Coil Unit properly may result in electric shocks and/or a fire.
- Do not touch any switches with wet finger, otherwise you may get an electric shock.

(*)1 Refer to the “Definition of Qualified Installer or Qualified Service Person.”
Information on the Transportation, Handling and Storage of the Carton

Examples of indication on the carton

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://example.com/symbol1" alt="Symbol" /></td>
<td>Keep dry</td>
<td><img src="https://example.com/symbol2" alt="Symbol" /></td>
<td>2 cartons</td>
</tr>
<tr>
<td><img src="https://example.com/symbol3" alt="Symbol" /></td>
<td>This side up</td>
<td><img src="https://example.com/symbol4" alt="Symbol" /></td>
<td>Do not step</td>
</tr>
<tr>
<td><img src="https://example.com/symbol5" alt="Symbol" /></td>
<td>Handle with care</td>
<td><img src="https://example.com/symbol6" alt="Symbol" /></td>
<td>Weight</td>
</tr>
<tr>
<td><img src="https://example.com/symbol7" alt="Symbol" /></td>
<td>Do not roll</td>
<td><img src="https://example.com/symbol8" alt="Symbol" /></td>
<td>Do not clamp</td>
</tr>
</tbody>
</table>

Other cautions

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://example.com/symbol9" alt="Symbol" /></td>
</tr>
</tbody>
</table>

CAUTION

Injury possibility. Do not handle with packing band, or may get injured in case of broken band.

2 Part Names

Air to Air Heat Exchanger with DX Coil Unit

Separately sold parts

Remote controller for the Air to Air Heat Exchanger with DX Coil Unit (NRC-01HE)
### 3 System Configuration

The control method of this product differs depending on the system configuration. Operate it following the methods explained in the system configuration examples below.

- For the actual system configuration, ask your dealer or the installer of the product for information.
- Refer also to the installation manuals and owner's manuals of the remote controllers.
- If a central remote controller is used, refer also to its installation manual and owner's Manual.

#### System Configuration Examples

<table>
<thead>
<tr>
<th>System example</th>
<th>Operation</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Air to Air Heat Exchanger with DX Coil Unit system</td>
<td>The remote controller can be used to ON/OFF running the Air to Air Heat Exchanger with DX Coil Unit.</td>
<td>If two remote controllers are used, the latter operation overrides the former and their indications always reflect the result of the latter operation.</td>
</tr>
<tr>
<td></td>
<td>Remote controller for the Air to Air Heat Exchanger with DX Coil Unit (NRC-01HE)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Main remote controller (RBC-AMT32E)</td>
<td>* The remote controller can be used to select the operation mode, start and stop the unit, and control the ventilation FAN speed and select ventilation mode.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* The remote controller cannot be used to change the ventilation FAN speed or select ventilation mode.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* The remote controller (NRC-01HE) can be used to start and stop only the Air to Air Heat Exchanger with DX Coil Unit. For this operation, it is necessary to change the settings. Consult the dealer for details.</td>
</tr>
</tbody>
</table>

| B. Air to Air Heat Exchanger with DX Coil Unit system linked with air conditioners | The remote controller can be used to ON/OFF running the Air to Air Heat Exchanger with DX Coil Unit. | If two remote controllers are used, the latter operation overrides the former and their indications always reflect the result of the latter operation. |
|   | Remote controller for the Air to Air Heat Exchanger with DX Coil Unit (NRC-01HE) |   |
|   | Main remote controller (RBC-AMT32E) | * The remote controller can be used to select the operation mode, start and stop the unit, and control the ventilation FAN speed and select ventilation mode. |
|   |   | * The remote controller cannot be used to change the ventilation FAN speed or select ventilation mode. |
|   |   | * The remote controller (NRC-01HE) can be used to start and stop only the Air to Air Heat Exchanger with DX Coil Unit. For this operation, it is necessary to change the settings. Consult the dealer for details. |

#### System Configuration Examples

<table>
<thead>
<tr>
<th>System example</th>
<th>Operation</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Central control system (When controlling the Air conditioner and the Air to Air Heat Exchanger with DX Coil Unit separately)</td>
<td>The central controller can be used to ON/OFF the whole system and control the operation mode of the Air conditioner and the Air to Air Heat Exchanger with DX Coil Units.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Central controller for 64/128 units/ groups</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remote controller (NRC-01HE/RBC-AMT32E)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>* When the Air to Air Heat Exchanger with DX Coil Unit system linked with indoor air conditioners is used, set the Air to Air Heat Exchanger with DX Coil Unit as &quot;Follower&quot;, referring to &quot;Setting the address manually using the remote controller&quot; in the Installation Manual of the outdoor unit.</td>
</tr>
</tbody>
</table>

| D. Central control system (When controlling the Air conditioner and the Air to Air Heat Exchanger with DX Coil Unit together) | The central controller can be used to ON/OFF the whole system and control the operation mode of the Air conditioner and the Air to Air Heat Exchanger with DX Coil Units. |
|   | Central controller for 64/128 units/ groups |   |
|   | Remote controller (NRC-01HE/RBC-AMT32E) |   |
|   |   | * If two control devices are used, the central controller controls the operation of the Air conditioner and the Air to Air Heat Exchanger with DX Coil Units. The Air to Air Heat Exchanger with DX Coil Unit and Air conditioner, the latter operation overrides the former regardless of which device is used. |

* The remote controller can be used to ON/OFF running the Air to Air Heat Exchanger with DX Coil Unit. For this operation, it is necessary to change the settings. Consult the dealer for details. |

* The remote controller (NRC-01HE) can be used to start and stop only the Air to Air Heat Exchanger with DX Coil Unit. For this operation, it is necessary to change the settings. Consult the dealer for details. |

---

When the Air to Air Heat Exchanger with DX Coil Unit system linked with indoor air conditioners is used, set the Air to Air Heat Exchanger with DX Coil Unit as "Follower", referring to "Setting the address manually using the remote controller" in the Installation Manual of the outdoor unit.
4 Part Names and Functions of the Remote Controller

Remote controller for the Air to Air Heat Exchanger with DX Coil Unit (NRC-01HE)

Operation section
- One of these remote controllers can be used to control both indoor air conditioner units and Air to Air Heat Exchanger with DX Coil Units (up to 8 units in total).
- After setting the operation conditions, you can use the units by just pressing the ON/OFF button.
- Functions concerning controlling the Air to Air Heat Exchanger with DX Coil Unit are explained here. For controlling an air conditioner, refer to the owner’s manuals supplied with the remote controller and the air conditioner.

1 button (Fan speed select button) (*1)
2 button (Timer set button)
3 button (Test button)
4 button (*1) (Ventilation button)
5 button (Filter reset button)
6 button (Power save operation)

Display section

7 button (Swing/Louver direction button) (*1)
8 Operation lamp
9 button (Timer set button)
10 button (Operation mode select button)
11 button (Unit select button)
12 button (Temperature set button)
13 button (Ventilation fan speed button)
14 button (Ventilation mode button)
15 button (Filter elevating button) (*1)
16 button (Louver select button) (*1)

OPTION:
Remote controller sensor
Normally the temperature sensor of the indoor unit senses the temperature. The temperature around the remote controller can also be sensed. For details, contact your dealer.
* Do not use the function when the air conditioner is controlled in a group.

(*1): This function is not available for Air to Air Heat Exchanger with DX Coil Unit.” “ will be displayed for few seconds when the unit is running in a system equipped with only the Air to Air Heat Exchanger with DX Coil Unit.
Display section

All indicators are displayed on the display example below for explanation. In reality, only the selected options will be displayed. Indications concerning controlling the Air to Air Heat Exchanger with DX Coil Unit are explained here. For indications concerning an air conditioner, refer to the owner’s manuals supplied with the remote controller and the air conditioner.

- blinks on the display of the remote controller when the power switch is turned on for the first time. The initial settings progress while is blinking. Start to use the remote controller after has disappeared.

**NOTE**
The LCD may temporarily be blurred due to static electricity.

### Display Indicators

1. **SETTING indicator**
   - Displayed when setting the timer or other functions.

2. **Operation mode indicator**
   - Indicates the operation mode selected.

3. **Error indicator**
   - Displayed when the protective device activates or an error occurs.

4. **Time indicator**
   - Indicates the time. (Indicates a error code when an error occurs.)

5. **Timer mode indicator**
   - Each time you press the button, the indication changes as follows: , , , and no timer indication.

6. **Filter indicator**
   - Reminder to clean the air filter.

7. **Test run indicator**
   - Displayed during a test run.

8. **Louver position display (**1)**
9. **Swing indicator (**1)**
10. **Set temperature display**
    - The selected set temperature is displayed.
11. **Remote controller sensor indicator**
    - Displayed when the remote controller sensor is used.
12. **Pre-heat indicator**
    - Displayed when the pre-heat indicator is activated.
13. **No function indicator**
    - Displayed when the function requested is not available on that model.
14. **Fan speed indicator (**1)**
    - Indicates the selected fan speed:
      - (Auto)
      - (High)
      - (Medium)
      - (Low)
15. **Louver Number display (**1)**
16. **Power saving mode display**
    - Displayed during capacity saving mode.
17. **Louver lock indicator (**1)**
18. **UNIT No. indicator**
    - The number of the Air to Air Heat Exchanger with DX Coil Unit selected using the UNIT button or that of the unit in which an error has occurred.
19. **Central control indicator**
    - Displayed when a central control device such as a central controller is also used. If the central control device prohibits the use of local remote controllers, blinks when any of the or buttons are pressed and the operation is rejected.
20. **Operation mode controlled indicator**
    - Displayed when MODE button is pushed while operation mode is fixed to cool or heat by the air conditioner administrator.
21. **Operation ready display (**1)**
    - This display appears on some models.
22. **Service display**
    - Displayed while the protective device works or a trouble occurs.
23. **Ventilation fan speed indicator**
    - Indicates the ventilation fan's speed. , or is indicated.
24. **Ventilation mode indicator**
    - Indicates the selected ventilation mode, or is indicated.
25. **Nighttime heat purge indicator**
    - Displayed during the nighttime heat purge operation. **(2)**
26. **Humidification indicator**
    - Displayed during humidifying.
27. **Ventilation indicator**
    - If the remote is used to control the Air to Air Heat Exchanger with DX Coil Unit in a system linked with air conditioners, and separate operation of the unit is set to available, the indicator is displayed while the unit is running.

**(*1):**
- Not displayed. These functions are not available for Air to Air Heat Exchanger with DX Coil Unit.

**(*2):**
- Displayed when these operation modes are activated.)
5 How to Use

When using the remote controller for the Air to Air Heat Exchanger with DX Coil Unit (NRC-01HE)

When you use the Air to Air Heat Exchanger with DX Coil Unit for the first time or change the settings, operate the remote following the procedure below. From the next time, the unit starts running following the operation conditions you set by just pressing the button.

Preparation

Turning on the circuit breaker

When turned on, the separation lines appear and blinks on the display of the remote controller.

• The remote controller will not work for about 1 minute after turning on the power. This is not a malfunction.

• To use a Air to Air Heat Exchanger with DX Coil Unit system linked with air conditioners, turn on the circuit breaker for the air conditioners too.

Operations

Changing ventilation mode

1. Push the button to select a ventilation mode.

Each time the button is pushed, the ventilation mode and indication change as follows:

- Automatic mode
- Heat exchange mode
- Bypass mode (unavailable)
- Fan mode

About air volume imbalance (sx, sy)


For normal ventilation (High or Low):
The volumes of the indoor air supply and outdoor air exhaustion are set to the same level.

For volume ventilation imbalance:
• When [SA+EA] is selected: the volume of the indoor air supply is larger than that of the outdoor air exhaustion. (Inflow of humidity and smells from the toilet and kitchen is reduced.)
• When [SA+EA] is selected: the volume of the outdoor air exhaustion is larger than that of the indoor air supply. (Outflow of smells and floating bacteria into a corridor or other places is reduced.)

Consult your dealer if the setting of the air volume imbalance seems incorrect.

Changing the set temperature

Push the “TEMP. +” buttons.

To increase the temperature, and “−” to decrease the temperature. (The set temperature cannot be changed in the fan mode.)

About ventilation modes

The unit has two ventilation modes.

- Automatic mode
- Heat exchange mode

About ventilation fan speed

Push the button to select the ventilation fan speed.

Each time the button is pushed, the speed and indication changes as follows:

- High (Fast)
- Low (Slow)
- Heat exchange mode
- Bypass mode (unavailable)
- Fan mode

As factory default, the air volume imbalance setting is deactivated only [High] and [Low] are available for selection. Consult your dealer to activate the setting.

About the separate operation of the Air to Air Heat Exchanger with DX Coil Unit in a system linked with air conditioners

The procedure below is not effective in a system equipped with the Air to Air Heat Exchanger with DX Coil Unit only.

1. Press the button while the system is running.

Only the Air to Air Heat Exchanger with DX Coil Unit stops and the indicator turns off.

2. Press the button while the system is stopped.

The indicator lights up and the Air to Air Heat Exchanger with DX Coil Unit starts running separately.

Note

• Normally, the Air to Air Heat Exchanger with DX Coil Unit ON/OFF as the air conditioner is ON/OFF when it is in a system linked with air conditioners.
• If “0” is displayed when the button is pushed, change the settings. Consult your dealer to change the settings.
About nighttime heat purge operation

- Nighttime heat purge is a function to reduce the room air conditioning load in the morning in summer by exhausting the air indoor which has become warm while the air conditioner is stopped in the night automatically in the Bypass mode.

- The nighttime heat purge operation functions if night purge is activated and the last operation mode of the air conditioner before stopping is or in an Air to Air Heat Exchanger with DX Coil Unit system linked with air conditioners.

If the button is pushed while the system is running, the operation lamp turns off, appears on the display, and the nighttime heat purge operation turns on-standby. After the operation becomes on-standby, the unit automatically starts ventilation in [Low] ventilation fan speed and [Bypass mode] when the conditions to start the nighttime heat purge operation below are fulfilled.

The nighttime heat purge operation is paused for one hour if any of the conditions to pause the operation are detected. If the conditions to start the nighttime heat purge operation are fulfilled one hour after the pause, the operation will start again. If not, the operation will remain paused for one more hour.

This cycle is repeated until the conditions to stop (end) the nighttime heat purge operation below are fulfilled.

The conditions to start the nighttime heat purge operation

The unit compares temperatures indoor and outdoor using the monitoring operation (for about 5 minutes) and will start the nighttime heat purge operation if the following conditions are fulfilled.

1. A certain amount of time has passed between the nighttime heat purge operation becoming on-standby and the monitoring operation starting. (The time is set between 1-48 hours in 1 hour steps.)
2. The indoor temperature is 3°C or more higher than the outdoor temperature and the indoor temperature is 2°C or more higher than the temperature set for the operation.

The conditions to pause the nighttime heat purge operation (the operation pauses for one hour.)

1. The indoor temperature is the same or lower than the outdoor temperature, the indoor temperature is the same or lower than the temperature set for the operation, or one hour has passed since the nighttime heat purge operation started.

The conditions to stop (end) the nighttime heat purge operation

The nighttime heat purge operation ends and the indicator disappears if any of the following conditions are fulfilled.

1. The air conditioner or Air to Air Heat Exchanger with DX Coil Unit is started.
2. 48 hours has passed since the monitoring operation started.

NOTE

- The setting of the nighttime heat purge operation is “OFF” as factory default.
- Consult your dealer to change the setting to “ON” or the setting of the time until the monitoring operation starts.
- The settings of or cannot be changed during the nighttime heat purge operation. Their indicators are not displayed.
- The indicator stays lit while the operation is on-standby or paused.
- The nighttime heat purge operation cannot be activated if 24-hour ventilation is activated.

CAUTION

- The nighttime heat purge operation is not executed if the outdoor temperature becomes about 10°C or less to prevent condensation in the Air to Air Heat Exchanger with DX Coil Unit, but the indicator is still lit.

About humidifying

Humidifying is available during heating.

REQUIREMENT

- When the humidifying season is over, perform the drying operation for the humidifier.
- During humidifying season, perform the drying operation if the unit is not used for a long period of time (over a couple of weeks).
- It is required to replace the humidifying element if it emits an unpleasant odor.
- Continue the humidifying operation, which is stopped while the other air-conditioners in the room are stopped, the change the heating mode to the ventilation mode, and stop the humidifying operation. Continuing the humidifying operation may increase the temperature and create condensation.

To use the Air to Air Heat Exchanger with DX Coil Unit effectively, observe the following conditions.

**Cooling operation**

- Outdoor temperature range: -5°C to +43°C
- Room temperature range: +21°C to +32°C
- Room humidity: 60% or less

If the Air to Air Heat Exchanger with DX Coil Unit continues running for a long time with the room humidity over 80%, water droplets may fall from the unit or may be emitted from the air outlet.

**Heating operation**

- Outdoor temperature range: -15°C to +21°C
- Room temperature: +28°C or less

* If the Air to Air Heat Exchanger with DX Coil Unit is continuously operated beyond the conditions above, the protective device will be activated and force the unit to stop.
6 Timer Operation

Select a timer type from the following three: (Max. 168 hours)

- **OFF timer**: Stops running after a specified period.
- **Repeat-OFF timer**: Stops running after a specified period every time you use the unit.
- **On timer**: Starts running after a specified period.

### Setting the timer

1. **Push the** button **to start operation.**
   - The operation lamp lights up.

2. **Push the** button. Each time the button is pushed, the timer mode and indication change in the following order:
   - **Off** (OFF timer) — **Repet-OFF** (Repeat-OFF timer) — **On** (ON timer)
   - The time setting increments by 0.5 hours (30 minutes) or 1 hour (24 hours) each time you press the button.

3. **Press the** buttons to set the period of time until the timer actions.
   - The time setting increases by 1-hour increments if it is over 1 day (24 hours).
   - For settings over 24 hours (*2), the days and hours are displayed.
   - The time setting decreases by 0.5 hours (30 minutes) or 1 hour (24 hours) each time you press the button.

   **Example of indication on the remote controller**
   - 23.5 hours (*1)

### Cancelling the timer

7. **Press the** button. The timer indicator disappears.

**NOTE**

When using the Repeat-OFF timer, pressing the button after the unit has been stopped by the timer starts it running again, and the unit will stop again after the specified period.

### Location

- **Be careful of operation sounds**
  - Locate the unit in a place secure enough so that the sounds and vibrations do not increase.
  - If something is placed near the air discharge of the outdoor unit, noise may increase.
  - Do not disturb your neighbors with cool/warm air or noise coming from the air discharge of the outdoor unit.

### Be careful of operation sounds

- **Installation**
  - Do not install the unit in places where the outside temperature falls below 5°C.
  - Avoid installing near machines emitting high frequency waves.
  - Not suitable for chemical plants such as liquefied carbon dioxide refrigerant plants.
  - A failure may occur in certain locations such as the following:
    - Areas with large amount of oil droplets (including machine oil) or vapors
    - Salty areas near oceans, etc.
    - Heavily acidic or alkaline places.
    - Special maintenance or parts are required for use in the above places. For details, contact the dealer where you purchased the product.
  - Leave an enough space around the air intake and outlet of the outdoor unit so that the ventilation is not restricted.
  - Avoid places where strong wind may blow against the air intake and discharge of the outdoor unit.
  - Attach a snow stand, snow hood, etc. to the outdoor unit for use in snowfall areas. For details, contact the dealer where you purchased the product.
  - Make sure drain water from the outdoor unit is emitted into places with good drainage.
  - Confirm that the filters for the heat transfer element and the medium efficiency particulate air filter are attached. If they are not attached, the heat transfer element or the heat exchanger will become clogged with dust, deteriorating the performance and possibly causing water leakage.
  - Keep a distance of at least 1 m between the Air to Air Heat Exchanger with DX Coil Unit and a TV or radio. Failure to observe this precaution may cause visual disturbance or noise.
  - Leave a distance of at least 1.5 m between the air outlet and a fire alarm. If this precaution is not observed, the alarm may not work properly or detect fire in case of fire.
8 Air Conditioner Operations and Performance

■ Check before operation
- Turn on the power switch at least 12 hours before starting operation.
- Connect the earth wire securely.
- Attach the air filter to the indoor unit.

■ Defrosting during heating
- If frost falls on the outdoor unit during heating, defrosting is automatically performed (for approximately 2 - 10 minutes) to increase the heating effect.

■ 3-minute protection
The outdoor unit will not operate for approximately 3 minutes after the air conditioner has been immediately restarted after stopping, or the power switch has been turned on. This is to protect the system.

■ Power failure
- In the case of a power failure, all operations stop.
- To resume operations, push the ON/OFF button.

■ Fan rotation of a stopped indoor unit
- While other indoor units operate, the fans on indoor units in stand-by mode rotate for several minutes approximately once per one hour to protect the machines.

■ Protective device (High pressure switch)
The high pressure switch stops the Air to Air Heat Exchanger with DX Coil Unit automatically when excessive load is applied to the Air to Air Heat Exchanger with DX Coil Unit. If the protective device activates, the unit’s running stops and the operation lamp blinks. When the protective device activates, the indicator and the check code are displayed on the remote controller.

The protective device may activate in the following cases:

During cooling
- When the air intake or air discharge of the outdoor unit is blocked.
- When strong wind blows continuously against the air outlet of the outdoor unit.

During heating (for heat-pump model only)
- When dust or dirt is excessively adhered to the air filter of the indoor unit.
- When the air outlet of the indoor unit is blocked.

NOTE
When the protective device activates, turn off the power switch, remove the cause, and then restart running.

■ Cooling/Heating operations
Each unit can be controlled individually. However, indoor units connected to the same outdoor unit cannot perform cooling and heating simultaneously.
When you attempt simultaneous operation, indoor units performing cooling are stopped, and the running preparation indicator is displayed on the remote controller.
An indoor unit performing heating continues running. When you attempt an operation without the configured settings, the running preparation indicator is displayed on the remote controller and operation stops. If operation is fixed to cooling or heating by the Air to Air Heat Exchanger with DX Coil Unit administrator, only the configured settings apply to the operation.

■ Heat exchange element
A smell may be emitted from the heat transfer element during the initial stages of use. This is neither a malfunction nor harmful.

9 Maintenance

■ Maintenance of the filter, heat exchange element, and humidifier

WARNING
Cleaning the filter, heat exchange element, humidifier element and other parts involves dangerous work in high places. Ask a qualified installer or service person to do it. Do not attempt it by yourself.

CAUTION
Do not push buttons with wet hands. Doing so may result in electric shock.

◆ Filter maintenance
1 Clean the filter if “ ” is indicated on the remote controller.
2 Press the “ ” button after cleaning the filter. The “FILTER RESET” indicator disappears.

CAUTION
Cleaning remote controller
- Use a dry cloth to wipe the remote controller.
- Do not use a damp cloth on the remote controller.
- Do not use a chemically-treated duster for wiping or leave such materials on the unit for long. It may damage or fade the surface of the unit.
- Do not use benzine, thinner, polishing powder, or similar solvents for cleaning. These may cause the plastic surface to crack or deform.
Maintenance of the humidifier element

The replacement cycle of the humidifier element varies greatly depending on the conditions of use. Refer to the cycles below as general replacement cycles. (They are not the terms of guarantee.)

- The humidifying performance deteriorates gradually as impurities in tap water are accumulated in the humidifying element.
- In general, replace the humidifying element when the humidifying performance of the element has deteriorated by 20 to 40% compared with that of a new one.
- Estimated operating hours: 10 hours per day × 20 days per month × 5 months per year = 1000 hours per year
- The amount of impurities accumulated in the humidifying element is largely dependent on the water quality (water hardness, the variety or amount of impurities, the pH of the water, water temperature, etc.) or conditions of use.

When the water hardness is 25 mg/L  Every 5 years
When the water hardness is 50 mg/L  Every 3 years
When the water hardness is 100 mg/L  Every 2 years

When the Following Symptoms are Found

Check the points described below before asking repair servicing.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>• &quot;Swish&quot; sound is heard sometimes.</td>
<td>• When the operation has started, during the operation, or immediately after the operation has stopped, a sound such as water flows may be heard, and the operation sound may become larger for 2 or 3 minutes immediately after the operation has started. They are flowing sound of refrigerant or draining sound of dehumidifier.</td>
</tr>
<tr>
<td>• Slight clacking sound is heard.</td>
<td>• This is sound generated when heat exchanger, etc. expand and contract slightly due to change of temperature.</td>
</tr>
<tr>
<td>• “ ” indication is lit.</td>
<td>• When cooling operation cannot be performed because another indoor unit performs heating operation.</td>
</tr>
<tr>
<td>• “ ” indication is lit.</td>
<td>• When the manager of the Air to Air Heat Exchanger with DX Coil Unit has fixed the operation to COOL or HEAT, and an operation contrary to the setup operation is performed.</td>
</tr>
<tr>
<td>• “ ” indication is lit.</td>
<td>• When stopping the fan to prevent cool air blow at starting heating.</td>
</tr>
<tr>
<td>• Sound or cool air is output from the stand by indoor unit.</td>
<td>• Since refrigerant is flowed temporarily to prevent stay of oil or refrigerant in the stand by indoor unit, sound of flowing refrigerant, may be heard or white steam when other indoor unit operates in HEAT mode, and cold air in COOL mode may be blow-out.</td>
</tr>
<tr>
<td>• When power of the Air to Air Heat Exchanger with DX Coil Unit is turned on, “Ticktock” sound is heard.</td>
<td>• Sound is generated when the expansion valve operates when power has been turned on.</td>
</tr>
<tr>
<td>• LCD blurs when it is touched.</td>
<td>• LCD may temporarily blur by static electricity.</td>
</tr>
</tbody>
</table>

When the unit runs in the ventilation mode only

- Is outdoor temperature out of operation temperature range? When the outdoor temperature is outside the range of cooling/heating operation, the unit runs in the ventilation mode automatically.
Air to Air Heat Exchanger with DX Coil Unit

Owner's Manual

11 Specifications

□ Model with a humidifier

<table>
<thead>
<tr>
<th>Type</th>
<th>Function</th>
<th>MMD-VN502HEXE</th>
<th>MMD-VN802HEXE</th>
<th>MMD-VN1002HEXE</th>
<th>MMD-VN1002HEXE2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>Cooling and heating dual purpose type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equivalent HP</td>
<td>1.0</td>
<td>1.7</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Refrigerant</td>
<td>R410A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outdoor air thermal load handling capacity (kw)</td>
<td>4.10(1.30)</td>
<td>6.56(2.06)</td>
<td>8.25(2.33)</td>
<td>8.25(2.33)</td>
<td>10.92(4.32)</td>
</tr>
<tr>
<td>Heating capacity (kw)</td>
<td>5.53(2.33)</td>
<td>8.61(3.61)</td>
<td>10.92(4.32)</td>
<td>10.92(4.32)</td>
<td></td>
</tr>
<tr>
<td>Fan Volume m³/h</td>
<td>500/500</td>
<td>800/800</td>
<td>950/950</td>
<td>950/950</td>
<td></td>
</tr>
<tr>
<td>Air Volume m³/s</td>
<td>355/355</td>
<td>465/465</td>
<td>575/575</td>
<td>575/575</td>
<td></td>
</tr>
<tr>
<td>Power consumption W</td>
<td>285/305</td>
<td>365/385</td>
<td>485/505</td>
<td>485/505</td>
<td></td>
</tr>
<tr>
<td>External Static Pressure Pa</td>
<td>95/175</td>
<td>85/150</td>
<td>95/135</td>
<td>105/165</td>
<td></td>
</tr>
<tr>
<td>Humidification level kg/h</td>
<td>3.0/3.0</td>
<td>5.0/5.0</td>
<td>6.0/6.0</td>
<td>6.0/6.0</td>
<td></td>
</tr>
<tr>
<td>Sound pressure level dB</td>
<td>35.5/35.5</td>
<td>37.0/37.0</td>
<td>40.0/40.0</td>
<td>40.0/40.0</td>
<td></td>
</tr>
<tr>
<td>External dimensions Width</td>
<td>1140</td>
<td>1189</td>
<td>1189</td>
<td>1189</td>
<td></td>
</tr>
<tr>
<td>Height mm</td>
<td>1650</td>
<td>1739</td>
<td>1739</td>
<td>1739</td>
<td></td>
</tr>
<tr>
<td>Weight kg</td>
<td>91</td>
<td>111</td>
<td>112</td>
<td>114</td>
<td></td>
</tr>
</tbody>
</table>

□ Model without a humidifier

<table>
<thead>
<tr>
<th>Type</th>
<th>Function</th>
<th>MMD-VN502HEXE</th>
<th>MMD-VN802HEXE</th>
<th>MMD-VN1002HEXE</th>
<th>MMD-VN1002HEXE2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>Cooling and heating dual purpose type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equivalent HP</td>
<td>1.0</td>
<td>1.7</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Refrigerant</td>
<td>R410A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outdoor air thermal load handling capacity (kw)</td>
<td>4.10(1.30)</td>
<td>6.56(2.06)</td>
<td>8.25(2.33)</td>
<td>8.25(2.33)</td>
<td>10.92(4.32)</td>
</tr>
<tr>
<td>Heating capacity (kw)</td>
<td>5.53(2.33)</td>
<td>8.61(3.61)</td>
<td>10.92(4.32)</td>
<td>10.92(4.32)</td>
<td></td>
</tr>
<tr>
<td>Fan Volume m³/h</td>
<td>500/500</td>
<td>800/800</td>
<td>950/950</td>
<td>950/950</td>
<td></td>
</tr>
<tr>
<td>Air Volume m³/s</td>
<td>355/355</td>
<td>465/465</td>
<td>575/575</td>
<td>575/575</td>
<td></td>
</tr>
<tr>
<td>Power consumption W</td>
<td>285/305</td>
<td>365/385</td>
<td>485/505</td>
<td>485/505</td>
<td></td>
</tr>
<tr>
<td>External Static Pressure Pa</td>
<td>95/175</td>
<td>85/150</td>
<td>95/135</td>
<td>105/165</td>
<td></td>
</tr>
<tr>
<td>Humidification level kg/h</td>
<td>3.0/3.0</td>
<td>5.0/5.0</td>
<td>6.0/6.0</td>
<td>6.0/6.0</td>
<td></td>
</tr>
<tr>
<td>Sound pressure level dB</td>
<td>35.5/35.5</td>
<td>37.0/37.0</td>
<td>40.0/40.0</td>
<td>40.0/40.0</td>
<td></td>
</tr>
<tr>
<td>External dimensions Width</td>
<td>1140</td>
<td>1189</td>
<td>1189</td>
<td>1189</td>
<td></td>
</tr>
<tr>
<td>Height mm</td>
<td>1650</td>
<td>1739</td>
<td>1739</td>
<td>1739</td>
<td></td>
</tr>
<tr>
<td>Weight kg</td>
<td>84</td>
<td>101</td>
<td>101</td>
<td>103</td>
<td></td>
</tr>
</tbody>
</table>

* Sound Power Level is less than 70 dBA
Declaration of Incorporation of Partly Completed Machinery

Manufacturer: Toshiba Carrier Corporation
336 Tadehara, Fuji-shi, Shizuoka-ken 416-8521 JAPAN

Representative/TCF holder: Toshiba Carrier UK Ltd.
Porsham Close, Belliver Industrial Estate, PLYMOUTH, Devon, PL6 7DB.
United Kingdom

Hereby declares that the machinery described below:

Generic Denomination: Air conditioner (Air to Air Heat Exchanger with DX Coil Unit)

Model/type: MMD-VNK502HEXE
MMD-VNK502HEXE
MMD-VNK1002HEXE
MMD-VNK1002HEXE2
MMD-VN502HEXE
MMD-VN802HEXE
MMD-VN1002HEXE
MMD-VN1002HEXE2

Commercial name: TOSHIBA Air to Air Heat Exchanger with DX Coil Unit

Complies with the provisions of the “Machinery” Directive (Directive 2006/42/EC) and the regulations transposing into national law.

Must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Machinery Directive.

Complies with the provisions of the following harmonized standard:

NOTE
This declaration becomes invalid if technical or operational modifications are introduced without the manufacturer’s consent.
<table>
<thead>
<tr>
<th>Information according to EMC Directive 2004/108/EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Name of the manufacturer)</td>
</tr>
<tr>
<td>TOSHIBA CARRIER CORPORATION</td>
</tr>
<tr>
<td>(Address, city, country)</td>
</tr>
<tr>
<td>336 Tadehara, Fuji-shi, Shizuoka-ken</td>
</tr>
<tr>
<td>416-8521 Japan</td>
</tr>
<tr>
<td>(Name of the Importer/Distributor in EU)</td>
</tr>
<tr>
<td>Toshiba Carrier UK Ltd.</td>
</tr>
<tr>
<td>(Address, city, country)</td>
</tr>
<tr>
<td>Portham Clupp, Belliver Industrial Estate, PLYMOUTH, Devon, PL6 7DB, United Kingdom</td>
</tr>
</tbody>
</table>