



# Toshiba Carrier MMDMMD- AP0120VHG2UL Installation, Operation And Maintenance Manual

Vertical air handling unit



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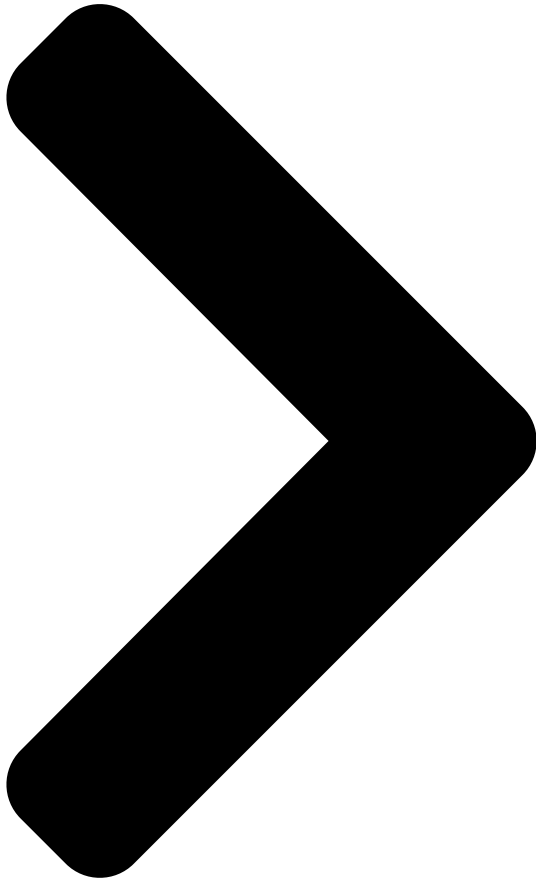
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Vertical Air Handling Unit  
**TOSHIBA**  
Installation, Operation and Maintenance Manual

Model name:

MMD-AP0120VHG2UL

MMD-AP0180VHG2UL

MMD-AP0240VHG2UL

MMD-AP0300VHG2UL

MMD-AP0360VHG2UL

MMD-AP0420VHG2UL

MMD-AP0480VHG2UL

*Carrier*

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# Related Manuals for Toshiba Carrier MMDMMD-AP0120VHG2UL

[Air Handlers Toshiba Carrier MMD-UP0121VHG-UL Installation, Operation And Maintenance Manual](#)

(62 pages)

[Air Handlers Toshiba Carrier TCB-IFDMR01UP-UL Design Manualline](#)

Vrf dx coil interface (60 pages)

## Summary of Contents for Toshiba Carrier MMDMMD-AP0120VHG2UL

[Page 1](#) Vertical Air Handling Unit Installation, Operation and Maintenance Manual Model name: For Commercial Use MMD-AP0120VHG2UL MMD-AP0180VHG2UL MMD-AP0240VHG2UL MMD-AP0300VHG2UL MMD-AP0360VHG2UL MMD-AP0420VHG2UL MMD-AP0480VHG2UL MMD-AP0600VHG2UL 035-000051-001 Page 1 of 60 MMD IOM 1.2 11-10-2020...

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[Page 3](#) MMD Series Air Handling Unit Installation, Operation and Maintenance Manual Installation, Start-Up and Service Instructions 035-000051-001 Page 3 of 60 MMD IOM 1.2 11-10-2020...

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### [Page 5: General Information](#)

GENERAL INFORMATION DANGER NEVER enter an enclosed fan cabinet or reach into a unit while the fan is running. LOCK OPEN AND TAG the fan motor power disconnect switch before working on a fan. Take fuses with you and note removal on tag. Electric shock GENERAL can cause personal injury or death.

### [Page 6: Product Nomenclature](#)

PRODUCT NOMENCLATURE 035-000051-001 Page 6 of 60 MMD IOM 1.2 11-10-2020...

[Page 7](#) PRODUCT NOMENCLATURE—ACCESSORIES 035-000051-001 Page 7 of 60 MMD IOM 1.2 11-10-2020...

### [Page 8: Installation](#)

INSTALLATION WARNING-AUXILIARY DRAIN RECOMMENDED: Pre-installation This product has an auxiliary condensate drain 1. Check items received against packing list, which should be piped to a condensate overflow 2. Do not stack unit components or accessories or safe drain location or both to protect riefes during storage.

[Page 9](#) INSTALLATION Figure 1 Return Configurations and Unit Orientations 035-000051-001 Page 9 of 60 MMD IOM 1.2 11-10-2020...

[Page 10](#) INSTALLATION—SERVICE CLEARANCES NOTES: 1. BLOWER SERVICE REQUIRES FRONT ACCESS ONLY. 2. RECOMMENDED BUT NOT NECESSARY: ALLOW 12" ON RIGHT AND LEFT SIDES FOR SIGNIFICANT BUT INFREQUENT SERVICE PROCEDURES SUCH DRAIN PAN OR COIL REPLACEMENT. 3. WHEN UNIT IS INSTALLED HORIZONTALLY (LYING ON RIGHT SIDE), CLEARANCES REMAIN THE SAME AS INDICATED ABOVE, EXCEPT TRAP CLEARANCE EXTENDS BELOW THE UNIT.

[Page 11](#) INSTALLATION Ceiling Suspension: Mount the unit in ceiling- suspended horizontal orientation per suspen- sion details (Figure 4a). Unit is NOT intended to be wall mounted. Consult a qualified struc- tural engineer for special mounting considera- tions. Install the unit so that it pitches slightly -(1/8 inch) -...

[Page 12](#) Figure 4a CEILING SUSPENSION DETAILS 035-000051-001 Page 12 of 60 MMD IOM 1.2 11-10-2020...

[Page 13](#) INSTALLATION CAUTION Direct-expansion coils are shipped pressurized with dry nitrogen. Release pressure from the coil through valves in protective caps before remov- ing caps. Do not leave piping open to the atmosphere un- necessarily. Water and water vapor are detri- mental to the refrigerant system.

[Page 14](#) INSTALLATION—ELECTRIC HEAT Electric Heater Accessory The electric heater may be factory-installed or DANGER field-installed. See Figures 5 through 8. WARNING: Hazardous voltage. Only qualified Removal Procedure: personnel must install the electrical service. Dis- To remove the electric heater, connect and Lock Out all incoming power sources 1.

[Page 15](#) INSTALLATION—ELECTRIC HEAT DANGER WARNING: Hazardous voltage. Only qualified Electric Heater Accessory-MMD size 12, 18 personnel must install the electrical service. Dis- and 24 connect and Lock Out all incoming power sources The electric heater must be adjusted to fit unit before connecting to electrical service.

[Page 16](#) INSTALLATION-ELECTRIC HEAT DANGER Install Procedure: WARNING: Hazardous voltage. Only qualified To install the electric heater, personnel must install the electrical service. Dis- 1. Disconnect and lock out electrical power from connect and Lock Out all incoming power sources the unit. Remove heater access panel. Discon- before connecting to electrical service.

### [Page 17: Installation-Electrical](#)

INSTALLATION-ELECTRICAL DANGER DANGER NEVER enter an enclosed fan cabinet or reach into a unit while the fan is running. WARNING: Hazardous voltage. Only qualified LOCK OPEN AND TAG the fan motor power dis- personnel must install the electrical service. Dis- connect switch before working on a fan.

[Page 18](#) DANGER INSTALLATION-ELECTRICAL WARNING: Hazardous voltage. Only qualified Provide strain relief where field wiring passes personnel must install the electrical service. Dis- through cabinet. Wiring within the cabinet has connect and Lock Out all incoming power sources been positively located and supported so that it before connecting to electrical service.

### [Page 19: Typical Wiring Diagram](#)

INSTALLATION-ELECTRICAL (cont'd) TYPICAL WIRING DIAGRAM 035-000051-001 Page 19 of 60 MMD IOM 1.2 11-10-2020...

### [Page 20: Typical Wiring Diagrams](#)

INSTALLATION-ELECTRICAL (cont'd) TYPICAL WIRING DIAGRAMS— Electric Heat: 1-6kW and 8-9.5kW TYPICAL WIRING—ELECTRIC HEAT TYPICAL WIRING—ELECTRIC HEAT 035-000051-001 Page 20 of 60 MMD IOM 1.2 11-10-2020...

[Page 21](#) START-UP Pre-Startup Building Envelope—All building windows and doors should be installed and closed before starting unit. During summer construction, avoid unit sweating by allowing for gradual pull down: use reduced capacity and use maximum available airflow. Temperature Controls-Check that unit is connected to the controls system and communicating properly.

[Page 22](#) DANGER NEVER enter an enclosed fan cabinet or reach into a unit while the fan is running. MOTOR LOCK OPEN AND TAG the fan motor power dis- HARNESS & connect switch before working on a fan. Take fus- CONNECTORS es with you and note removal on tag. Electric shock can cause personal injury or death.

[Page 23](#) DANGER NEVER enter an enclosed fan cabinet or reach into a unit while the fan is running. LOCK OPEN AND TAG the fan motor power dis- connect switch before working on a fan. Take fus- es with you and note removal on tag. Electric shock can cause personal injury or

death.

## [Page 24: Service-Filters](#)

SERVICE—Filters FILTER SECTIONS — Open or remove filter panel to replace old filter with a new filter. See physical data tables for filter data. See Figure 21. Figure 22 Access Panels The 3 sections of the unit can be reached using the front access panels, removable Figure 21 using 5/16”...

[Page 25](#) SERVICE-Coil Removal and Reinstallation Procedure 1. Perform procedure on the ground for safety. If tions for proper unit operation. working at heights USE EXTREME CAUTION ob- 10. Re-install wiring to PMV. serve all FALL SAFETY considerations. Under all 11. Re-install unit access panels. conditions, LOCK OUT all power supplies before 12.

## [Page 26: Airflow Performance](#)

AIRFLOW PERFORMANCE Figure 15 Increasing ESP setting As Shipped Higher Fan Setting (2ton) 035-000051-001 Page 26 of 60 MMD IOM 1.2 11-10-2020...

[Page 27](#) AIRFLOW PERFORMANCE 035-000051-001 Page 27 of 60 MMD IOM 1.2 11-10-2020...

[Page 28](#) UNIT ELECTRICAL RATINGS MMD Electrical Data 035-000051-001 Page 28 of 60 MMD IOM 1.2 11-10-2020...

[Page 29](#) UNIT DIMENSIONS MMD12-60 Elec Heat Ready RH Drain Connections, Bottom Return TOP VIEW .250 RIGHT VIEW FRONT VIEW 035-000051-001 Page 29 of 60 MMD IOM 1.2 11-10-2020...

## [Page 30: Left View](#)

UNIT DIMENSIONS MMD12-60 Elec Heat Ready RH Drain Connections, LH Return TOP VIEW .250 LEFT VIEW FRONT VIEW 035-000051-001 Page 30 of 60 MMD IOM 1.2 11-10-2020...

[Page 31](#) SPECIAL FACTORY OPTIONS 035-000051-001 Page 31 of 60 MMD IOM 1.2 11-10-2020...

## [Page 32: Electrical Work](#)

SPECIAL INSTRUCTIONS—ELECTRICAL WORK ELECTRICAL WORK WARNING •Securely connect the specified wires so that the external tension does not affect the termi- nal connectors. Improper connection may cause an electric shock or a fire. •Connect earth grounding wire. Incomplete grounding will cause an electric shock. Do not connect ground wires to gas pipes, water pipes, lightning rods, or the grounding wires of telephone lines.

[Page 33](#) SPECIAL INSTRUCTIONS—ELECTRICAL WORK ▼ Power supply Power supply 208 / 230V 1ph 60Hz Wire size Refer to “MMD electrical data” table Power supply wiring Up to 164’1” (50m) ▼Control wiring, Central control wiring □ 2-core shielded wires (non-polarity) are used for the control wiring between the indoor and outdoor units and central control wiring.

[Page 34](#) SPECIAL INSTRUCTIONS—ELECTRICAL WORK ■Connection wiring Connect power cables, earth wires, and communication cables to the specified terminals on the terminal block. ■Power supply wiring and ground wire 1. Strip the wire ends. Power supply wire : 0.4” (10mm) 2. Match the wire colors with the terminal numbers on the units’ and circuit breakers’ terminal blocks and firmly screw the wires to the corresponding terminals.

[Page 35](#) SPECIAL INSTRUCTIONS—CONTROLS ■P.C. Board Optional Switch/Connector Specifications (MCC-1570) Function Connector Function Remarks Factory default setting : ON when indoor unit DC12V (COM) in operation and OFF when indoor unit at CN32 rest. \*Fan can be operated on its own by output (WHI) Fan Output...

## [Page 36: Advanced Control](#)

SPECIAL INSTRUCTIONS—CONTROLS ADVANCED CONTROL REQUIREMENT □ NOTE : Powering on the unit and interface for the first time, it takes time for the remote control to rec- ognize the operation input. This is not a malfunction. □ For details on the auto address setting of air conditioners when operating together with VRF system (adjust the auto address setting on the



circuit board of the outdoor interface).

[Page 37](#) SPECIAL INSTRUCTIONS—CONTROLS ■Function code (DN code) setting Items  
Description At shipment Code 0000 : None 0001 : 150H Filter display de- 0002 : 2500H 0003 :  
5000H 0000 : None lay timer 0004 : 10000H 0000 : Standard Dirty state of filter 0000 :  
Standard 0001 : High degree of dirt (Half of standard time)

[Page 38](#) SPECIAL INSTRUCTIONS—CONTROLS TEST RUN Preparation □ Before turning on the  
power supply, carry out the following procedure. 1. Using 500V-Megger, check the resistance  
between the terminal block of the power supply and the earth (grounding). The resistance must  
be by 1MΩ or more. 2.

[Page 39](#) SPECIAL INSTRUCTIONS—CONTROLS 4. Push the [ ON/OFF ] button to start the test  
mode. The screen (1) shown in the left appears. (The screen (2) appears when the operation is  
stops.) Perform the test mode in the “Cool” or “Heat” mode. 5.

## [Page 40: Troubleshooting](#)

SPECIAL INSTRUCTIONS—CONTROLS TROUBLESHOOTING Confirmation and Check When a  
malfunction occurs, please refer to the check Check code code on the remote controller. Unit  
number of malfunctioning \*The check code appears only while the unit is running. unit Cool  
Mode Fan Speed The check code is only displayed during the operation.

[Page 41](#) SPECIAL INSTRUCTIONS—CONTROLS Check Codes and Parts to be Checked Check  
method On the remote control (Wired remote control, Central control remote control) and the  
interface P.C. board of the outdoor unit (I/F), a check display LCD (Remote control) or 7-segment  
display (on the outdoor interface P.C.

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[Page 43](#) SPECIAL INSTRUCTIONS—CONTROLS 035-000051-001 Page 43 of 60 MMD IOM 1.2  
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[Page 44](#) SPECIAL INSTRUCTIONS—CONTROLS Error detected by TCC-LINK central control  
device TCC-LINK: TOSHIBA Carrier Communication Link 035-000051-001 Page 44 of 60 MMD  
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[Page 45](#) SPECIAL INSTRUCTIONS—WARNINGS ON REFRIGERANT LEAKAGE 035-000051-001  
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### [Page 57: Startup Report](#)

MMD Series Air Handling Unit Start-up Report Job Name City Sales Order # Unit Tag Model Number Serial Number Installer Quantity of Units STARTUP REPORT Group Checklist Item Does electrical service correspond to unit nameplate? -Nameplate Supply Voltage/Phase: Rated \_\_\_\_\_ Measured \_\_\_\_\_ -Nameplate Rated FLA motor current: Rated \_\_\_\_\_ Measured \_\_\_\_\_ Does all field wiring conform to unit wiring diagram? Is field-provided freeze protection present? (if required)

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This manual is also suitable for:

[Carrier mmd-ap0180vhg2ulCarrier mmd-ap0240vhg2ulCarrier mmd-ap0300vhg2ulCarrier mmd-ap0360vhg2ulCarrier mmd-ap0420vhg2ulCarrier mmd-ap0480vhg2ul](#) ... [Show all](#)