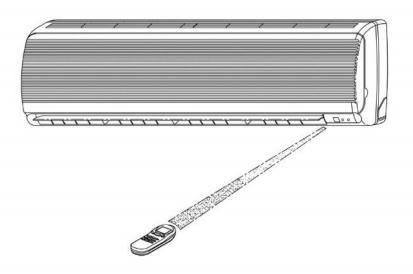


SPLIT TYPE AIR CONDITIONER (CHILLED WATER COIL UNIT)



Installation & Operation Instruction Manual

Please read this manual carefully before operating the unit.



CONTENTS

Warning and Caution
Preparations Before Installation
Installation Procedure
Wiring Diagram
Remote Control Operation Guide
Wired Control Operation Guide
LED Mode Indicators
Start-up Notices
Adjusting Air Flow Direction
Care & Maintenance
Operation Tips
Trouble Shooting Guide
Important Information

WARNING AND CAUTION

- Do not store or unpack the unit in a wet area or expose to rain or water.
- it may cause the unit to short circuit and may result in electrical shock or fire.
 - 2. Do not install the unit in rooms where any hazards are present which include, but are not limited to, flammable gas, alkaline or acid substances, or where hazardous or corrosive atmosphere exists.
- * it may cause fire.

(1)

3. This unit is designed for domestic and commercial use only.

 if used in certain environments, such as manufacturing workplace, the air conditioner may not function efficiently.



P/N: AC110006





Revision 130801

REV

A



PREPARATIONS BEFORE INSTALLATION

READ ALL SAFETY INFORMATION BEFORE INSTALLATION:

- Installations must performed by a qualified technician.
- * Before carrying out installation, ensure you wear the appropriate protection.
- * This air conditioner must be properly installed in accordance with the Installation Manual.
- * Check all local codes and ordinances that could affect the installation of this unit.
- * Refer to the data tag on each unit for the correct voltage, frequency and amperes.
- * Be sure that the power supply corresponds to the specified rating on the data tag.
- * Check site electrical service provided by utility to ensure the electrical. service capacity can handle the load imposed by this unit.
- * Refer to dimensional drawings for location of water piping, condensate drain, and electrical connections before setting the unit in place.

THIS PRODUCT MUST BE PROPERLY GROUNDED.

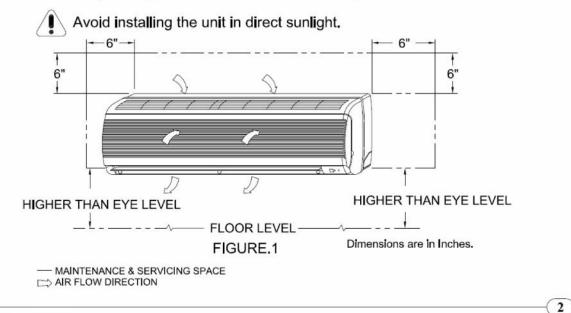
- Moving machinery and electrical power is hazardous and may cause severe injury or death. Disconnect and lock out the power during installation or when making any repair or performing service.
- Sharp edges and coil surfaces are potential injury hazards, avoid contact with the coil if at all possible.

INSTALLATION PROCEDURE

* LOCATION FOR FAN COIL UNIT

Select the location of the fan coil unit with following considerations:

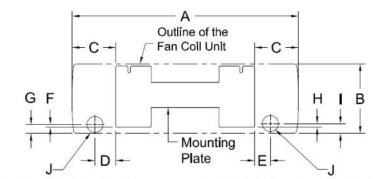
- 1. The front of the air inlet and outlet shall be free from any obstruction. The outlet air should flow out freely.
- 2. The wall where the unit is to be mounted should be strong enough to bear the weight and not produce noise while the unit is running.
- 3. Ensure the clearance on every side of the indoor unit conforms to figure 1.
- 4. From floor, the height of the unit should be above eye level.





- * MOUNTING PLATE INSTALLATION
- 1. After a suitable place for installation has been selected, place the mounting plate horizontally on the wall. Use a level to ensure the unit is level.
- 2. Referring to the figure below, mark the locations for the wall anchors and the hole for the piping.

PLAN DIMENSIONS FOR MOUNTING PLATE INSTALLATION



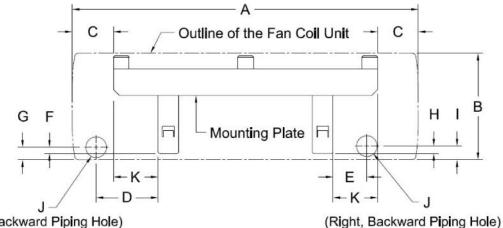
(Left, Backward Piping Hole)

(Right, Backward Piping Hole)

FIGURE 2

MODEL	А	В	С	D	Е	F	G	Н	I	J
MHWW-09-H-3	34.6	11.7	7.5	3.5	2.7	0.8	1.4	1.0	1.6	Ø2.76
MHWW-12-H-3	39.0	12.0	7.5	3.6	2.7	0.9	1.8	1.1	2.0	Ø2.76

Dimensions are in inches.

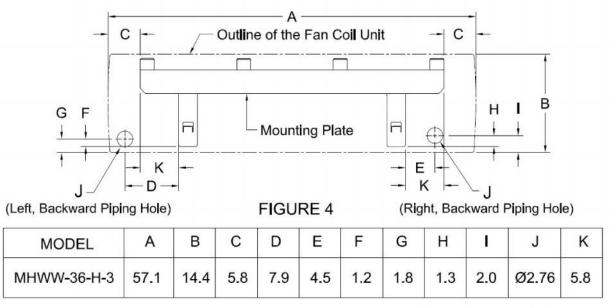


(Left, Backward Piping Hole)

Gl	ID		2
GU	חנ	100	

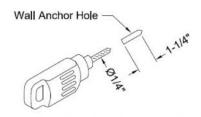
MODEL	А	В	С	D	Е	F	G	н	I	J	К
MHWW-18-H-3	40.0	14.0		0.0	4.5	0.0	47	4	4.0	00.70	5.0
MHWW-24-H-3	46.0	14.2	5.5	8.3	4.5	0.8	1.7	1	1.8	Ø2.76	5.9

Dimensions are in inches.

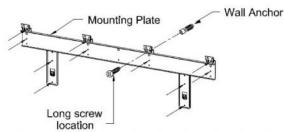


Dimensions are in inches.

- 3. Drill 1/4" diameter, 1-1/4" depth holes in the wall for mounting plate wall anchors.
- Insert the wall anchors, then screw the mounting plate to the wall.
- 5. Secure the mounting plate and check for stiffness.
- 6. Drill a piping hole 2-3/4" diameter hole either from the right or to the left of fan coil side (Refer to Figure 2, 3, & 4 on applicable Models) and make sure that the hole is slightly slanted downward.
- 7. If the wall is hollow please provide a sleeve for tube assembly to protect the drain line, water piping and field connection.

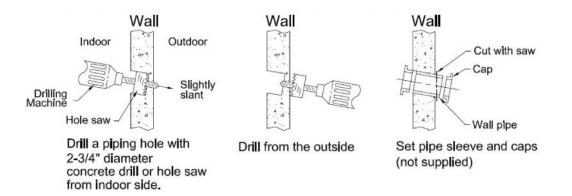


Drill diameter 1/4" depth 1-1/4" holes



Secure mounting plate and check the stiffness.

4





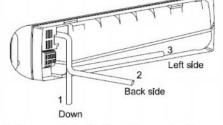
5

INSTALLATION PROCEDURE

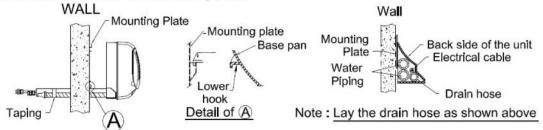
PIPING AND DRAINAGE OF FAN COIL UNIT

 Route fan coil liquid solution lines to the wall hole via one of the 3 routes shown below. For route1 and 3 use the provided fan coil knock outs. Be sure to take care and remove all sharp edges.

TUBING ROUTE:

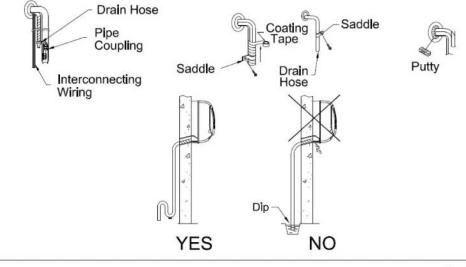


- 2. Insert the fan coil unit piping and drain line through the wall hole.
- 3. Tape the tubing, drain hose, and connecting cable.
- 4. For the horizontal piping, make sure all lines are laid in and along the cavity on the back of the unit. Secure the piping using the 2 piping holders provided on the rear of unit before affixing the fan coil to the mounting plate.
- 5. Secure the unit to the mounting plate.



- 6. Connect the piping and make sure that the seals are fitted tightly.
- 7. Connect the drain hose and tape over the connecting parts.
- 8. Ensure that the drain hose has sufficient slope for proper drainage.
- 9. Ensure drain line is not terminating into a depression.
- 10. Carefully seal any wall opening from weather to avoid any ingress of water.

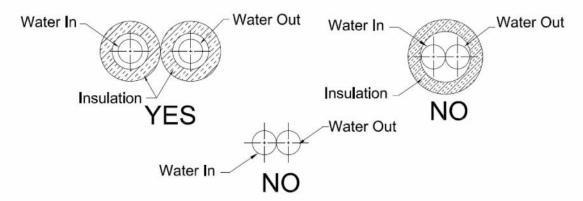
OUTSIDE OF WALL



	CONNECTOR				
MODEL	WATER INLET I.D. IN INCHES	WATER OUTLET I.D. IN INCHES			
MHWW-09-H-3	1/2" FLARE	1/2" FLARE			
MHWW-12-H-3					
MHWW-18-H-3	5/8" FLARE	5/8" FLARE			
MHWW-24-H-3		JIO TEARE			
MHWW-36-H-3	3/4" FLARE	3/4" FLARE			

INSULATION OF PIPES :

- 1. The pipe insulation should cover both INLET and OUTLET pipes as shown below.
- 2. Use polyethylene foam insulation with a minimum of 1/4" thickness for supply and return piping insulation.

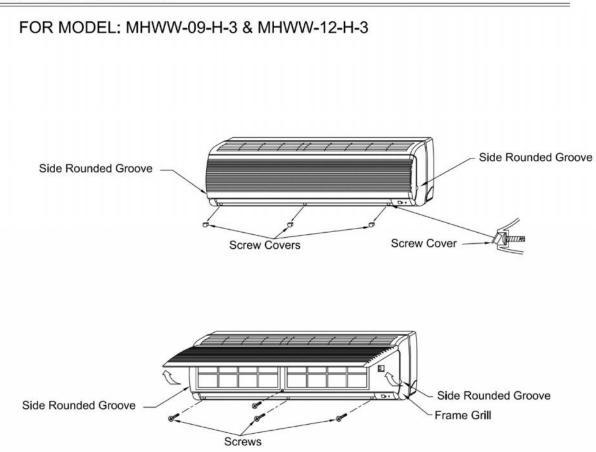


- * HOW TO REMOVE THE FRAME GRILL
- 1. Set the horizontal louver to the open position.

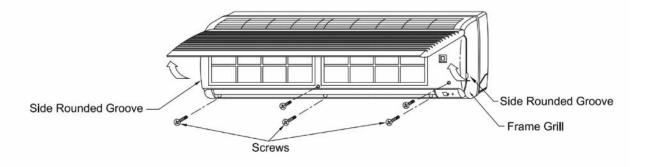
When performing this, please turn louver upward gently to avoid damaging of the step motor.

- 2. Remove the 3 or 4 plastic screw covers (this depends on the model) of the frame grill as shown in the illustration below. Then remove mounting screws.
- 3. Open the front panel by grasping the panel at the left and right side rounded grooves.
- 4. Grasp the lower part of the frame grill and pull it out.





FOR MODEL: MHWW-18-H-3 & MHWW-24-H-3

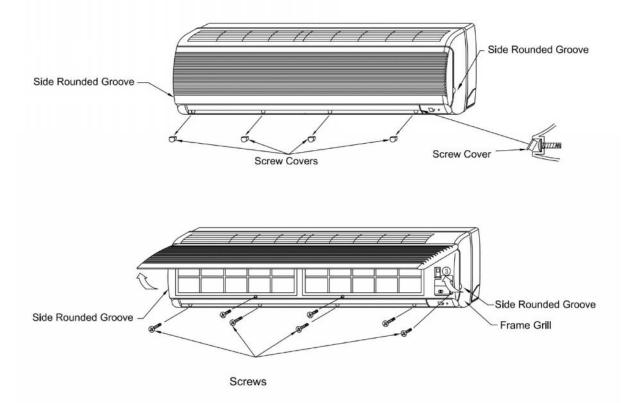


7



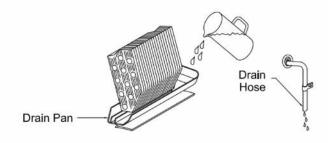
8)

FOR MODEL: MHWW-36-H-3



* CHECKING THE DRAINAGE

- 1. Turn off power to the unit.
- 2. Pour a glass of water into the drain pan.
- 3. Ensure that the water flows out from the drain hose of fan coil unit.





WIRING CONNECTIONS

* Be sure to turn off the main power supply before opening the

- frame grille for servicing.
- * Always refer to the wiring diagrams supplied with this manual.
- * Check local electrical codes and also any specific wiring codes.

Connect the unit to adequate power outlet. (Rating voltage ±5% during operation) Adequate Power Outlet

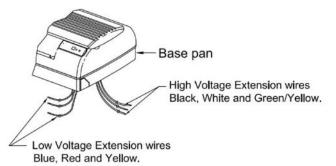
Time delay fuse or circuit	Amp.	Model Used	
Breaker	5A	MHWW-09-H-3, MHWW-12-H-3 MHWW-18-H-3, MHWW-24-H-3 MHWW-36-H-3	



9

* Check the Main Power Supply is " Switch Off " before the power connection for the unit is made.

- * The location of Outlet Box (Panel Compartment) must be easy to access during inspection and servicing the unit.
- * The Outlet Box (Panel Compartment) were the field wiring is to be done must be accessible only by removing the Service Cover / Panel Cover of Oulet Box (Panel Compartment).
- * For the three Low Voltage Extension Wires (Blue, Red and Yellow) connection and three High Voltage Extension Wires (Black, White and Green/Yellow) connection refer to wiring diagram at page 10~13.

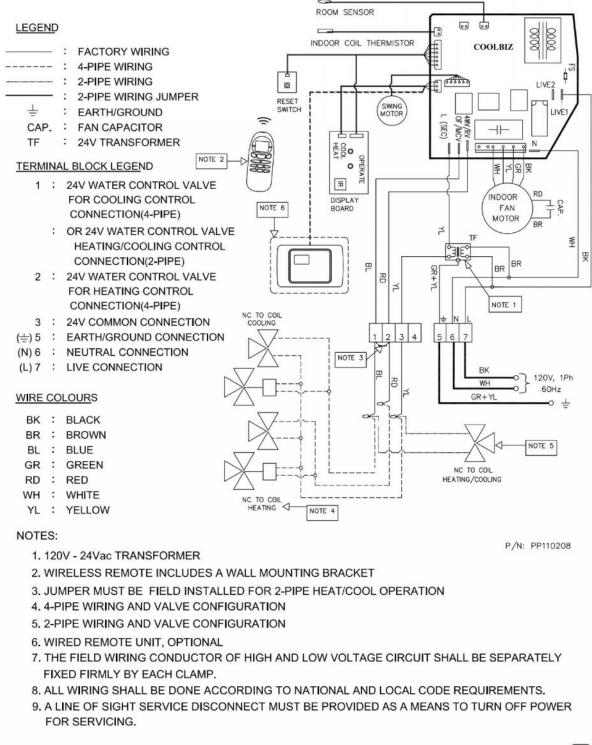


Connect the three low voltage wire extensions (Blue, Red and Yellow) to the hot water and chilled water control valves per wiring diagram page 10~13.



WIRING DIAGRAM

Model: MHWW-09-H-3 & MHWW-12-H-3



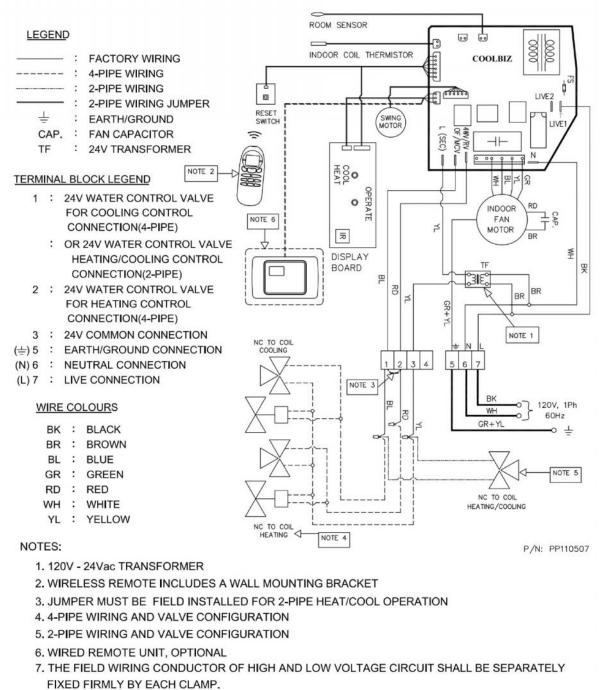




WIRING DIAGRAM

WIRING DIAGRAM

Model: MHWW-18-H-3

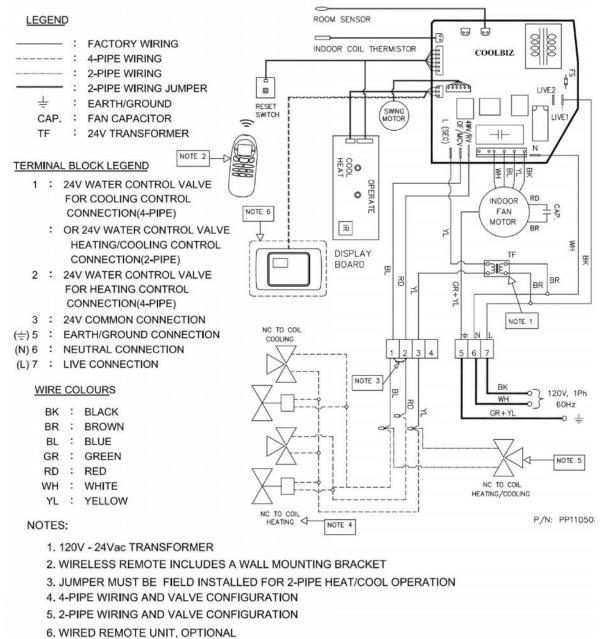


- 8. ALL WIRING SHALL BE DONE ACCORDING TO NATIONAL AND LOCAL CODE REQUIREMENTS.
- 9. A LINE OF SIGHT SERVICE DISCONNECT MUST BE PROVIDED AS A MEANS TO TURN OFF POWER FOR SERVICING.

12)

WIRING DIAGRAM

Model: MHWW-24-H-3



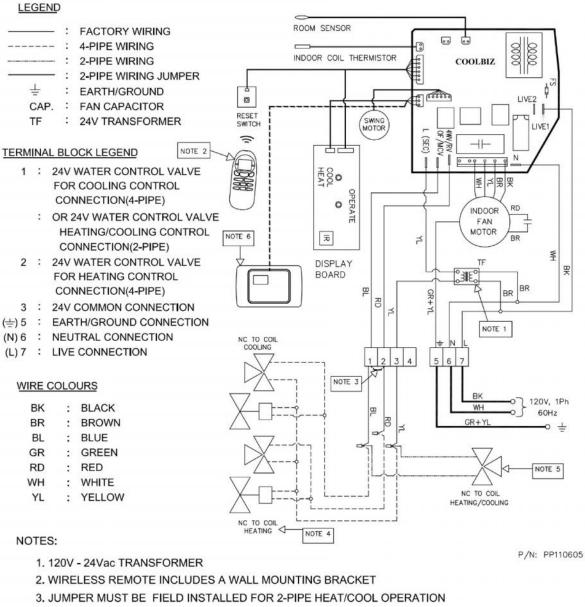
- 7. THE FIELD WIRING CONDUCTOR OF HIGH AND LOW VOLTAGE CIRCUIT SHALL BE SEPARATELY FIXED FIRMLY BY EACH CLAMP.
- 8. ALL WIRING SHALL BE DONE ACCORDING TO NATIONAL AND LOCAL CODE REQUIREMENTS.
- 9. A LINE OF SIGHT SERVICE DISCONNECT MUST BE PROVIDED AS A MEANS TO TURN OFF POWER FOR SERVICING.



WIRING DIAGRAM

WIRING DIAGRAM

Model: MHWW-36-H-3



- 4. 4-PIPE WIRING AND VALVE CONFIGURATION
- 5. 2-PIPE WIRING AND VALVE CONFIGURATION
- 6. WIRED REMOTE UNIT, OPTIONAL
- 7. THE FIELD WIRING CONDUCTOR OF HIGH AND LOW VOLTAGE CIRCUIT SHALL BE SEPARATELY FIXED FIRMLY BY EACH CLAMP.
- 8. ALL WIRING SHALL BE DONE ACCORDING TO NATIONAL AND LOCAL CODE REQUIREMENTS.
- 9. A LINE OF SIGHT SERVICE DISCONNECT MUST BE PROVIDED AS A MEANS TO TURN OFF POWER FOR SERVICING.

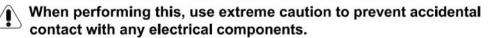
(13)



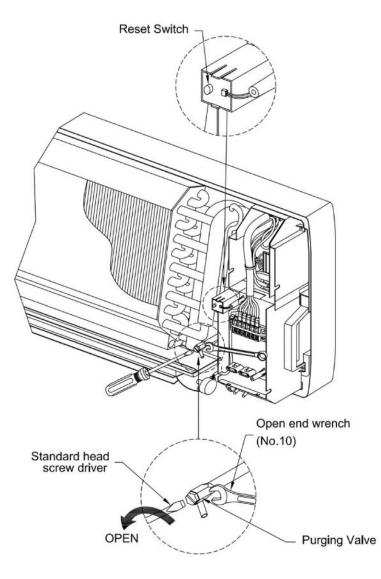
14

* AIR PURGING

- 1. After connecting the water inlet and outlet pipes to the main water supply lines, turn on the power and operate the unit by pressing the Reset Switch.
- 2. Open the water inlet valve and flood the coil.
- 3. Check all connections for water leaks. If no leaks are found loosen (one turn counter clockwise) the purging valve using a screw driver. You must support the valve with a wrench while loosening or tightening. Purge trapped air from inside the coil.



- 4. Once no air bubbles are present, close the purging valve (Clockwise).
- 5. Open all water valves to allow water to flow into the fan coil.



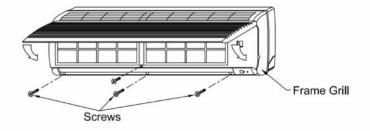


* HOW TO INSTALL THE FRAME GRILL ON THE FAN COIL UNIT

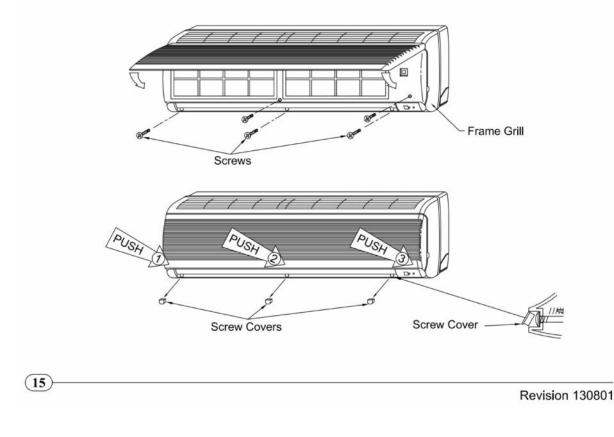
1. Install the frame grill in the opposite order of "HOW TO REMOVE THE FRAME GRILL". When the frame grill is removed and mounted again, take the following actions: Before fastening the screws (depend on the model), be sure to hook the top inside 3 locks of the frame grill. Close the front panel and close the gap left between the frame grill by pushing the location (1, 2, 3) and (4) until a "click" sound is heard.

If cooling or dry mode is activated without closing the front panel properly, dew can be deposited on the front grill surface. In addition, the unit appearance will suffer if the gap between front panel and the frame grill is too wide.

FOR MODEL: MHWW-09-H-3 & MHWW-12-H-3

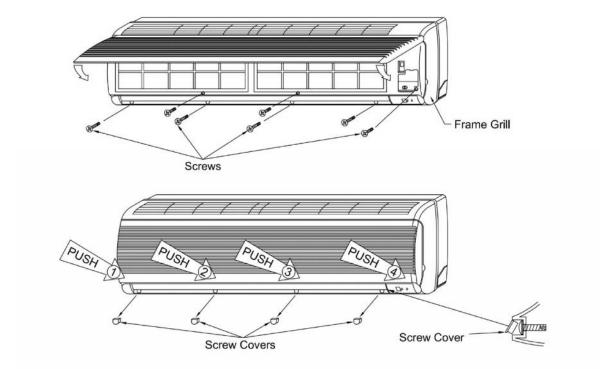


FOR MODEL: MHWW-18-H-3 & MHWW-24-H-3





FOR MODEL: MHWW-36-H-3



REMOTE CONTROL OPERATION GUIDE

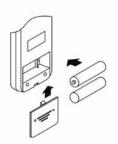
PREPARATION OF THE REMOTE CONTROL

- Open the battery cover by pressing slightly in the direction of arrow.
- Insert two 1.5 Volt high performance alkaline batteries (AAA), be careful not to invert the polarity.
- Close the battery cover.

USE OF THE REMOTE CONTROL

- Ensure there are no obstructions between receiver and remote control.
- The remote control signal can be received at the distance of up to 15Ft.
- Point the remote control unit transmitter towards the air conditioner receiver while the setting is being stabilise.
- To be able to carry out any operations or setting changes using the remote, the fan coil must be powered on.
- When a signal is receives correctly by the unit, a beep sound will be emitted. If you do not hear the sound, press the remote control button again.

Revision 130801



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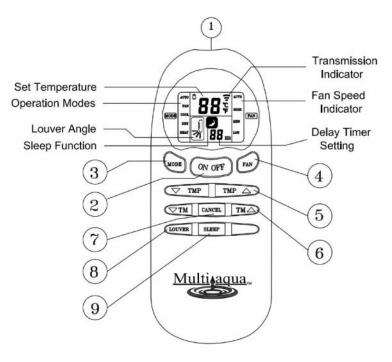


REMOTE CONTROL OPERATION GUIDE

IMPORTANT

- Don't drop or throw the remote control.
- Do not allow remote control to come into contact with any liquids.
- Keep control out of direct sunlight and hot places.
- Remove batteries when the remote control is not in use for a long time.
- The two batteries must be identical and must changed at the same time.
- The remote control should be place 3Ft. or more away from TV or any other electric appliances.

DESCRIPTIONS AND FUNCTION OF REMOTE CONTROL



* FUNCTION

1 TRANSMISSION SOURCE

-Infrared transmission source.

2 POWER

 Press to turn the air conditioner from OFF to ON or vice versa.
 (Red LED at left is lit to indicate the control is on)





REMOTE CONTROL OPERATION GUIDE

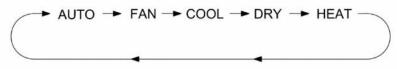
3 MODE

- To select desired operation mode.

- COOL Cooling operation
- DRY Humidity control
- HEAT Heating operation
- FAN Fan only, No cooling or heating capability.
- AUTO Operation mode will be selected automatically between HEAT and COOL mode, depending on the room temperature and SET temperature.

FAN - COOL - DRY -

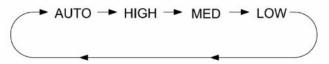
Mode selection sequence (COOL)



Mode selection sequence (HEAT/COOL)

4 FAN SPEED SELECTION:

- Fan mode may be selected from one setting to another as shown below.
- Press the fan speed button to select the desired fan speed. The fan speeds can be toggled through Auto, High, Medium and Low. When the unit is switched from auto fan to fan mode while in cool, heat or auto modes the fan will automatically be selected in low speed. When unit is returned to either cool, heat or auto mode, then auto fan will be restored.



(b) Fan speed sequence

5 TEMPERATURE SETTING

- Press 'A' to increase set temperature.
- Press '▼' to decrease set temperature.
- Press '▲' and '▼' simultaneously to toggle between °C and °F display mode.
- Temperature range : 16°C to 30°C in °C display mode, or 60°F to 86°F in °F display mode.

Hh.

18)

(a) °C display mode

(b) °F display mode



REMOTE CONTROL OPERATION GUIDE

6 DELAY TIMER SETTING

- To set the Delay Timer, press '▲' or '▼' button.
- Press '▲' to increase delay time by 1.
- Press '▼' to decrease delay time by 1.
- Maximum delay timer setting is 18 hours.
- To cancel the timer, press cancel button or set back the timer to zero or press the POWER button.

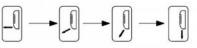
7 CANCEL

- To cancel the delay timer setting.

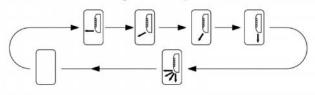
8 LOUVER

Two different functions available :

 To set the Louver stop position. Four angle are available. The sequence is as below:



2) To set the Louver swing. The sequence is as below:



9 SLEEP

- To toggle the sleep mode ON to OFF or vice versa.
- This Sleep mode is not available under DRY or FAN mode.
- The set temperature is automatically adjusted to provide comfortable sleep.

SLEEP FUNCTION DISPLAY

TRANSMISSION INDICATOR

- Blinks twice to indicate that transmission is taking place.
- Unit beeps to acknowledge receiving information.



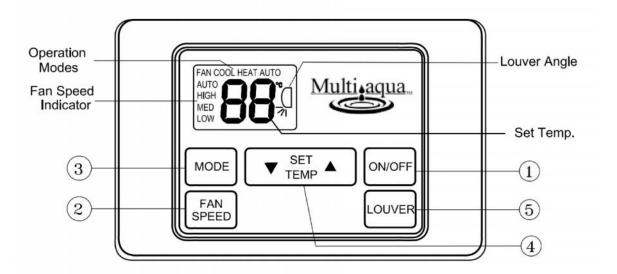






WIRED CONTROL OPERATION GUIDE

DESCRIPTIONS AND FUNCTION OF WIRED REMOTE CONTROL



* FUNCTION

1. POWER ON/OFF

Press the on/off button to turn the fan coil on and off.

2. FAN SPEED

Press the fan speed button to select the desired fan speed. The fan speeds can be toggle through: Auto, High, Medium and Low. In Auto Mode, High, Medium and Low speed cannot be selected.



Fan speed sequence

Note: The Auto fan speed will automatically select the fan speed (adjust the speed) depending on the room temperature and set temperature difference.

20)



WIRED CONTROL OPERATION GUIDE

3. MODE

Press mode button to select desired operation mode.

COOL - Cooling Operation

HEAT - Heating operation

- FAN Fan only, No cooling or heating capability.
- AUTO Operation Mode will be selected automatically between HEAT Mode and COOL Mode, depending on the room temperature and SET temperature.

FAN -> COOL

Mode selection sequence (COOL)

Mode selection sequence (HEAT/COOL)

4. TEMPERATURE SETTING

Press 'A' to increase set temperature.

Press $'\mathbf{\nabla}'$ to decrease set temperature.

Temperature range : 16°C to 30°C in °C display mode,

or 60°F to 86°F in °F display mode.

86.F

(a) °C display mode

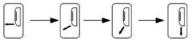
(b) °F display mode

5. LOUVER

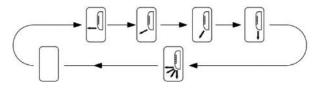
(21)

Press the louver button to toggle through the two options.

1) There are four louver angles. Toggle through each until desired angle is selected.



2) To select continuous louver swing, toggle through selections until desired continuous louver icon apperas.



LED MODE INDICATORS

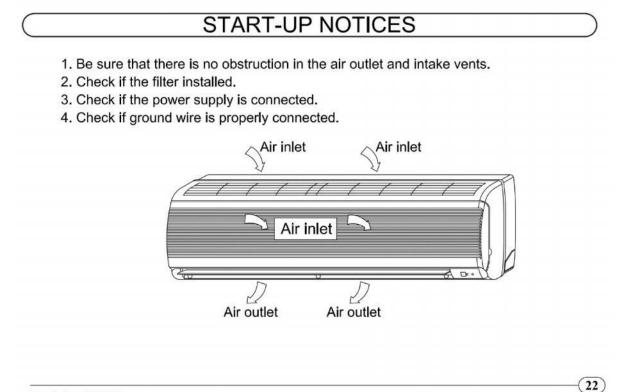
INDICATOR LIGHTS	REMOTE SETTING	FUNCTION
RED-GREEN	COOL	Cooling Operation Only
RED-OFF	DRY	Humidity Control, Water Flow, Low Fan
RED-RED	HEAT	Heating Operation Only
RED-OFF	FAN	Fan Operation Only
RED-BLINKING RED/ORANGE	AUTO	(See Below)

Auto selection between heat & cool dependent on room temperature & set temperature.

Blinking light indicates indoor unit is waiting for the coil to reach proper temperature in order to satisfy set point.

During a call for heating, the liquid solution temperature must reach at least 110 degrees F in order for the fan to start. If during a call for heating, the liquid solution temperature falls below 110 degrees F. the fan will stop until the coil temperature sensor reads the liquid solution temperature has risen above the 100 degree mark. Once the liquid solution temperature has reached the 110 degrees mark, the fan will start again.

For Additional information contact Multiagua at (864) 850-8990





ADJUSTING AIR FLOW DIRECTION

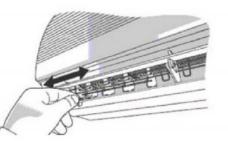
- The horizontal louver and air deflectors on the air delivery can be arranged in two directions:
 - * Air deflectors are to be oriented manually.
 - * Horizontal louver, can be oriented only by means of the remote control.

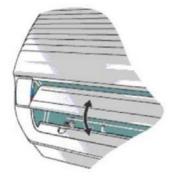
ORIENT THE AIR DEFLECTOR:

- Turn the air deflector as indicated in the figure
- Both in Heating and Cooling mode it is advisable for the air flow not to hit people directly.

MOTORIZED HORIZONTAL LOUVER:

- Never orient the motorized horizontal louver manually. Any manual operation on the louver may cause damage and/or the malfunction of the unit.
- Adjust the motorized horizontal louvers using only the remote control.





CARE & MAINTENANCE

WARNING

- * Disconnect and lock out the power before making any repair or any services.
- * Sharp edges and coil surfaces are a potential injury hazard avoid contact with these.

MAINTENANCE

- If you plan to leave the unit idle for a long time, perform the following:
 - 1. Disconnect Power.
 - 2. Ensure no water in moving through the unit.
 - 3. Remove the batteries from the remote control.

CHECK BEFORE OPERATION

- 1. Check if the air filter is installed and the air outlet is not blocked.
- 2. Connect Power.
- 3. Replace the remote control batteries.





CLEANING THE FAN COIL UNIT



- 1. External weekly cleaning is to be done with a dry cloth soaked with fresh water and mild soap, avoid using any other type of detergent.
- 2. The Frame grill with deco panel can be removed. Clean with warm water not over 120°F and wipe with dry cloth.
- Do not use a chemically treated cloth or duster to clean the unit.
- 4. Do not use benzene, thinner, polishing chemical or similar solvents for cleaning. These may cause surface discoloration, cracks or deformation.

CLEANING AIR FILTERS

* Dirty and clogged filters reduce the cooling efficiency of the unit. It is recommended to clean the filters once every 2 weeks.



- 1. Open the deco panel by grasping the rounded grooves and pulling towards you.
- 2. Hold the tabs of air filter and raise it slightly, then pull filter downwards.
- 3. Clean the air filters with vacuum cleaner or wash with water then dry.
- 4. Do not use benzene, thinner, polishing chemical or similar solvents for cleaning. These may cause the surfaces to crack or deform.
- 5. Install the air filter vise versa of dismantling procedure. The correct filter side is indicated by words "FRONT" marked on the filter. The "FRONT" side should be facing you.

OPERATION TIPS

The following events may occur during normal operation.







UNIT DOES NOT OPERATE IMMEDIATELY.

If you restart the fan coil within 3 minutes of turning it off, or change the mode during operation. A protective time delay device will work to shut off the unit for 3 minutes.

A PECULIAR SMELL COMING FROM THE UNIT. Odors present in the room, such as those from the carpet, furniture or smoke maybe emitted from the unit.

HEAR A HISSING SOUND DURING OPERATION. A soft, swishing noise can be heard during operation or

immediately after the unit is turned ON or OFF. This is the sound of circulating cooling/heat agent.





TROUBLE SHOOTING GUIDE

 If the unit appears to be malfunctioning, check the following points before calling for service.

PROBLEM	PROBLEM CAUSE	REMEDY
1. Air conditioner doesn't operate.	 Has power been shut down or has power failure occurred? Is the wiring connection loose? Is the power protection in operation? Is Fuse blown or Circuit breaker open? 	 Wait for power resume. Tighten the connection. Reset the power button. Replace fuse or reset the circuit breaker.
2. Insufficient Cooling or Heating.	 Is the set temperature suitable? Is air inlet or outlet obstructed? Are filters dirty? Is there any other heat source in the room? Is there a large number of people in the room? 	 Reset suitable set temperature. Remove objects that obstruct the air inlet and outlet. Clean filters.
3. Wireless remote control is not functioning.	 Is the remote control unit out of effective distance from the indoor unit ? Are there any obstruction bet- ween the remote control and signal receptor ? Are the batteries low ? 	 Use the remote control within sufficient distance of the unit. Remove or clean the obstruction. Replace with new batteries.

Problems that needs qualified personnel assistance.

PROBLEM	PROBLEM CAUSE	REMEDY		
1. Air conditioner doesn't run.	 Faulty contactor, relay and/or fan motor capacitor. Control board not functioning. Terminal loose. Is water valve or circulator functioning ? 	 Replace faulty components. Check the cause of malfunctioning and replace control board. if necessary. Check and retighten any loose terminals. Check to see if water valve or circulator is opening or actuating. 		
2. Power and Mode indicator is blinking.	1. Sensor error is activated.	1. Check all sensors for loose con- nection and replace defective sensors if necessary.		

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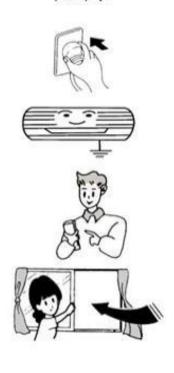
IMPORTANT INFORMATION

\Lambda WARNING

 The Unit is connected to the power supply. Operations performed by persons without the required technical skills can lead to personal injury or damage to the unit and surrounding objects.

MALFUNCTIONING

 In the case of malfunctioning, remove power to the unit then repower and start the unit again. If the problems persists, call sevices personnel promptly.

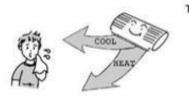


Ensure voltage, amperage and Hz comply with the fan coll name plate data. Fallure to do so, will cause permanent damage to the unit.

The ground must be connected, Do not connect the ground wire to water pipes, gas pipes, lighting rods or telephone ground wire.

Select the most appropriate temperature to provide maximum comfort in room. The room should be kept at least 9°F below outdoor ambient. Careful choice of the room temperature will lead to energy savings.

Do not leave windows and doors open while operating the air conditioner. During operation always leave the filters on the unit otherwise the dust in the air could soil the surface of the evaporator coll.



The air direction can be adjusted appropriately. The air coming out of the unit must not strike people directly. This could cause a cold sensation and resulting discomfort. Adjust the air deflector manually and use the remote control to adjust the horizontal louver.

Do not put anything in the air inlets or outlet slot. This could cause injury to people and damage to the unit.



Splashing water on the air conditioner can cause electrical shock and/or fan coll malfunction.

These specifications are subject to change without notice. Check <u>www.multiaqua.com</u> for the latest information. 26

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