F615252

Panasonic

Required tools for Installation Works

1	Philips screw driver	4	Spanner	7	Megameter		39.2 N•m (3.9 kgf.m) 58.8 N•m (5.8 kgf.m)
2	Level gauge	5	Knife	8	Multimeter		
3	Electric drill	6	Measuring tape	9	Torque wrench	10	Gas leak detector

SAFETY PRECAUTIONS

- Read the following "SAFETY PRECAUTIONS" carefully before installation of (Mono bloc) Air-to-Water Heatpump system (hereafter referred to as "Mono bloc unit").
- Electrical works and water installation works must be done by licensed electrician and licensed water system installer respectively. Be sure to use the correct rating and main circuit for the model to be installed.
- The caution items stated here must be followed because these important contents are related to safety. The meaning of each indication used is as below. Incorrect installation due to ignorance or negligence of the instructions will cause harm or damage, and the seriousness is classified by the following indications.

⚠ WARNING	This indication shows the possibility of causing death or serious injury.
⚠ CAUTION	This indication shows the possibility of causing injury or damage to properties only.

The items to be followed are classified by the symbols:

⊘	Symbol with white background denotes item that is PROHIBITED from doing.
❗ ⏚	Symbol with dark background denotes item that must be carried out.

- Carry out test run to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.
- If there is any doubt about the installation procedure or operation, always contact the authorized dealer for advice and information.

⚠ WARNING

⊘	Do not install Mono bloc unit near handrail of veranda. When installing Mono bloc unit at veranda of high rise building, child may climb up to Mono bloc unit and cross over the handrail and causing accident.
⊘	Do not use unspecified cord, modified cord, join cord or extension cord for power supply cord. Do not share the single outlet with other electrical appliances. Poor contact, poor insulation or over current will cause electrical shock or fire.
⊘	Do not tie up the power supply cord into a bundle by band. Abnormal temperature rise on power supply cord may happen.
⊘	Do not insert your fingers or other objects into the unit, high speed rotating fan may cause injury.
⊘	Do not sit or step on the unit, you may fall down accidentally.
⊘	Keep plastic bag (packaging material) away from small children, it may cling to nose and mouth thus causing suffocation.
⊘	Do not use pipe wrench to install refrigerant pipe. Using pipe wrench may deform the pipes and cause unit malfunction.
⊘	Do not purchase unauthorized electrical parts for installation, service, maintenance and etc.. They might cause electrical shock or fire.
⊘	Do not modify the wiring of Mono bloc unit for installation of other components (i.e. heater, etc). Overloaded wiring or wire connection points may cause electrical shock or fire.
❗	For electrical work, follow the local national wiring standard, regulation and this installation instruction. An independent circuit and single outlet must be used. If electrical circuit capacity is not enough or defect found in electrical work, it will cause electrical shock or fire.
❗	For water circuit installation work, follow to relevant European and national regulations (including EN61770) and local plumbing and building regulation codes.
❗	Must engage an authorized dealer or specialist for installation. If installation is defective, it will cause water leakage, electrical shock or fire.
❗	Install according to this installation instructions strictly. If installation is defective, it will cause water leakage, electrical shock or fire.
❗	Only use the supplied or specified installation parts. Else, it may causes Mono bloc unit vibrate, fall, water leakage, electrical shock or fire.
❗	Install at a flat, strong and firm location which is able to withstand the Mono bloc unit's weight. If the location is slanting, or strength is not enough the set will fall and cause injury.
❗	This equipment is strongly recommended to be installed with Residual Current Device (RCD) on-site according to the respective national wiring rules or country-specific safety measures in terms of residual current.
❗	The unit is only for use in a closed water system. Utilization in an open water system may lead to excessive corrosion of the water piping and risk of incubating bacteria colonies, particularly Legionella, in water.
❗	If there is any doubt about the installation procedure or operation, always contact the authorized dealer for advice and information.
❗	Select a location where in case of water leakage, the leakage will not cause damage to other properties.
❗	When installing electrical equipment at wooden building of metal lath or wire lath, in accordance with electrical facility standard, no electrical contact between equipment and building is allowed. Insulator must be installed in between.
❗	This installation may be subjected to building regulation approval applicable to respective country that may require to notify the local authority before installation.
❗	Any work carried out on the Mono bloc unit after removing the front panel which is secured by screws, must be carried out under the supervision of authorized dealer and licensed installation contractor.
⏚	This unit must be properly earthed, the electrical earth must not be connected to a gas pipe, water pipe, the earth of a lightening rod or a telephone. Otherwise there is a danger of electrical shock in the event of an insulation breakdown or electrical earth fault in the Mono bloc unit.

⚠ CAUTION

⊘	Do not install the Mono bloc unit in areas where there is a risk of flammable gas leakage. There is a risk of fire if flammable gas accumulates near or around the Mono bloc unit.
⊘	Do not release refrigerant during piping work for installation, re-installation and during repairing a refrigeration parts. Take care of the liquid refrigerant, it may cause frostbite.
⊘	Make sure the power supply cord does not contact with hot part (i.e. water piping). High temperature may cause insulator of power supply cord damage hence electrical shock or fire.
⊘	Do not touch the sharp aluminium fin, sharp parts may cause injury.
⊘	Do not apply excessive force to water pipes that may damage the pipes. If water leakage occurs, it will cause flooding and damage to other properties.
❗	Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, water leakage may happen and may cause damage to properties of the user.
❗	The piping installation work must be flushed before the Mono bloc unit is connected to remove contaminants. Contaminants may damage the Mono bloc unit components.
❗	Select an installation location where it is accessible for maintenance.
❗	Power supply connection to Mono bloc unit. ● Power supply point should be in easily accessible place for power disconnection in case of emergency. ● Must follow local national wiring standard, regulation and this installation instruction. ● Strongly recommended to make permanent connection to a circuit breaker. For WH-MHF09D3E8: - Power Supply 1: Use approved 20A 4-poles circuit breaker with a minimum contact gap of 3.0mm. - Power Supply 2: Use approved 15/16A 2-poles circuit breaker with a minimum contact gap of 3.0mm. For WH-MHF12D9E8: - Power Supply 1: Use approved 20A 4-poles circuit breaker with a minimum contact gap of 3.0mm. - Power Supply 2: Use approved 15/16A 2-poles circuit breaker with a minimum contact gap of 3.0mm. - Power Supply 3: Use approved 15/16A 4-poles circuit breaker with a minimum contact gap of 3.0mm.
❗	Ensure the correct polarity is maintained throughout all wiring. Otherwise, it will cause electrical shock or fire.
❗	After installation, the installer is obliged to verify correct operation of the Mono bloc unit. Check the connection point for water leakage during test run. If leakage occurs, it will cause damage to other properties.
❗	Installation work. Four or more people are required to carry out the installation work. The weight of Mono bloc unit might cause injury if carried by less than four people.

Attached Accessories

No.	Accessories part	Qty.	No.	Accessories part	Qty.
1	Drain elbow	1	3	Wired remote control	1
2	Rubber cap	8			

Optional Accessory

No.	Accessories part	Qty.
4	Solar Connection PCB (CZ-NS2P)	1
5	Base Pan Heater (CZ-NE1P)	1

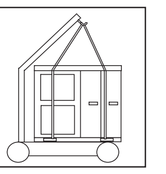
Field Supply Accessories

No.	Part	Qty.		Model	Specifications	Maker
i	3-way Valve Kit	2	Electromotoric Actuator	SFA21/18	AC230V	Siemens
			3-port Valve	VXI46/25	--	Siemens
ii	Room Thermostat	1	Analog Type	RAA20	AC230V	Siemens
			Programmable Type	REV200		

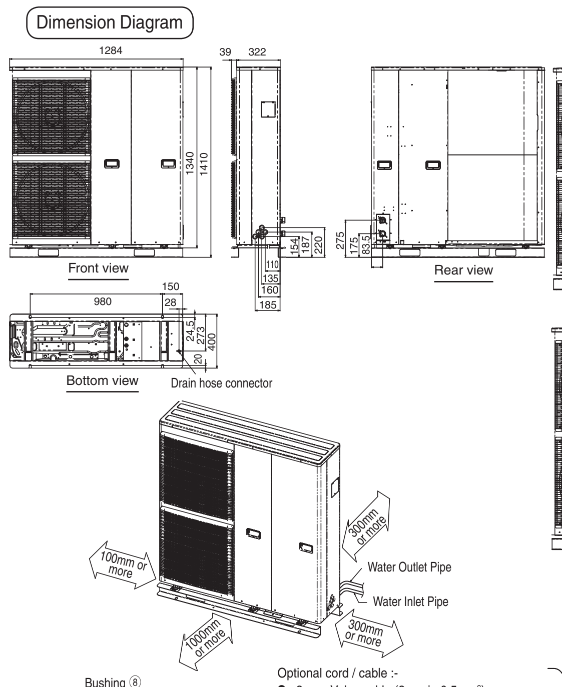
■ It is recommended to purchase the field supply accessories from the specific maker whom listed in above table.

Handling of Mono bloc unit

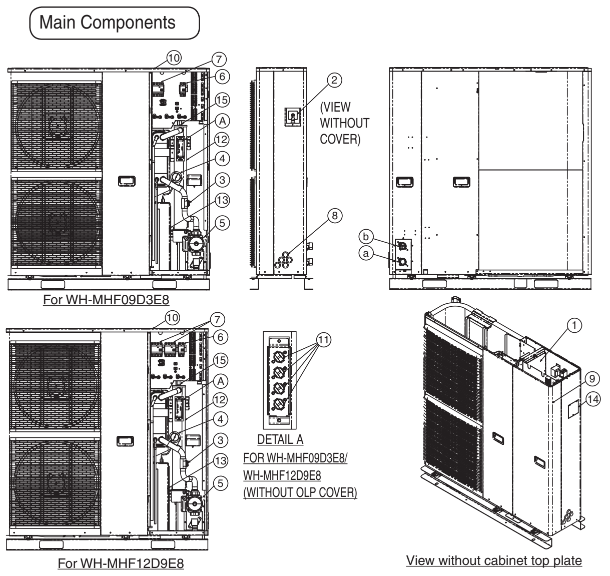
Mono bloc unit is a large and heavy apparatus. The handling of the unit only to be done by lifting tools with slings. These slings can be fitted into sleeves at the unit's base frame.



Dimension Diagram



Main Components



For WH-MHF09D3E8

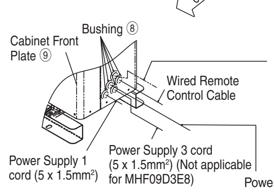
For WH-MHF12D9E8

View without cabinet top plate

Component name
① PCB
② Pressure relief valve
③ Flow switch
④ Pressure gauge
⑤ Water pump
⑥ 1 phase RCCB
⑦ 3 phase RCCB
⑧ Bushing
⑨ Cabinet front plate
⑩ Cabinet top plate
⑪ Overload protector
⑫ Heater assembly
⑬ Expansion vessel
⑭ Cover
⑮ Air purge valve

Connector name
ⓐ Water inlet
ⓑ Water outlet

It is advisable to avoid more than 2 blockage directions. For better ventilation & multiple-outdoor installation, please consult authorized dealer/specialist.



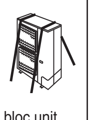
Optional cord / cable :-
- 3-way Valve cable (3 x min 0.5mm²)
- Booster Heater cord (3 x min 1.5mm²)
- Room Thermostat cable (4 or 3 x min 0.5mm²)
- Tank OLP cable (2 x min 0.5mm²)
- Tank Sensor cable (2 x min 0.3mm²)
- External Controller cable (2 x min 0.5mm²)
- Solar Three-way Valve cable (3 x min 0.5mm²)
- Solar Pump Station cable (2 x min 0.5mm²)

Type designation 60245 IEC 57 or heavier cord/ cable

(MONO BLOC) AIR-TO-WATER HEATPUMP

1 SELECT THE BEST LOCATION

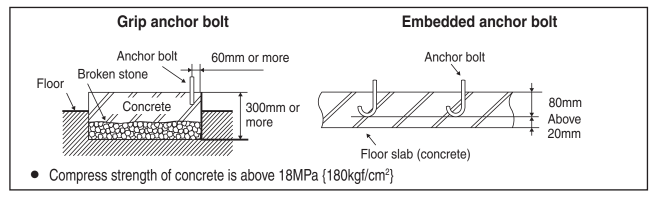
- ☐ Install the Mono bloc unit in outdoor locations only.
- ☐ Avoid installations in areas where the ambient temperature may drop below -20°C.
- ☐ The Mono bloc unit must be installed on a flat, solid surface.
- ☐ A place removed from any heat source or steam which may affect the operation of the mono bloc unit.
- ☐ A place where air circulation is good.
- ☐ A place where drainage can be easily done.
- ☐ A place where Mono bloc unit's operation noise will not cause discomfort to the user.
- ☐ A place which is accessible for maintenance.
- ☐ Ensure to keep minimum distance of spaces as illustrated below from wall, ceiling, or other obstacles.
- ☐ A place where flammable gas leaking might not occur.
- ☐ A place where the Mono bloc unit's piping and wiring lengths come within reasonable ranges.
- ☐ If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.
- ☐ Do not place any obstacles which may cause a short circuit of the discharged air.
- ☐ Avoid installing the Mono bloc unit at a location where suction side may be exposed directly to wind.
- ☐ If Mono bloc unit installed near sea, region with high content of sulphur or oily location (e.g. machinery oil, etc.), it lifespan maybe shorten.
- ☐ When installing the product in a place where it will be affected by typhoon or strong wind such as wind blowing between buildings, including the rooftop of a building and a place where there is no building in surroundings, fix the product with an overturn prevention wire, etc. (Overturn prevention fitting model number: K-KYZP15C)
- ☐ When connecting solar pump station cable between Mono bloc unit and solar pump station, the distance between both apparatuses shall be 2 ~ 8 meters and the length of the said cable must be shorter than 10 meter.
  Failure to do so may lead to abnormal operation to the system.



2 MONO BLOC UNIT INSTALLATION

Mono bloc unit will become heavy when filled with water. Please install the unit on a strong concrete floor and consider the weight of the unit and water.

- Fix Mono bloc unit on the concrete floor with M12 anchor bolt at 4 locations.
- Pull-out strength of these anchor bolts must be above 15000N.



- Compress strength of concrete is above 18MPa {180kgf/cm²}

Illustration of grip type and embedded type anchor bolt

3 PIPING INSTALLATION

⚠ WARNING

This section is for authorized and licensed electrician / water system installer only. Work behind the front plate secured by screws must only be carried out under supervision of qualified contractor, installation engineer or service person.

Please engage a licensed water circuit installer to install this water circuit.
- The minimum requirement of water in the system is 50 litres. If this value could not be achieved, please install additional buffer tank (field supply).
- This water circuit must comply with relevant European and national regulations (including EN61770), and local building regulation codes.
- Ensure the components installed in the water circuit could withstand water pressure during operation.
- Do not apply excessive force to piping that may damage the pipes.
- Use Rp 1 ¼" nut for both water inlet and water outlet connection and clean all piping with tap water before connecting to the Mono bloc unit.
- Cover the pipe end to prevent dirt and dust when inserting it through a wall.
- If an existing tank is to be connected to this Mono bloc unit, ensure the pipes are clean before water pipe installation is carried out.
- An external filter (30 mesh or more field supplied) must be installed before the water inlet of the Mono bloc unit (with "WATER IN" indication).
- Refer to Diagram 3.1 for pipe connection of Radiator, Floor Heater, Tank Unit, Solar Pump Station, 3-way Valve Kit and etc. Fail to connect the pipes appropriately might cause the unit malfunction.

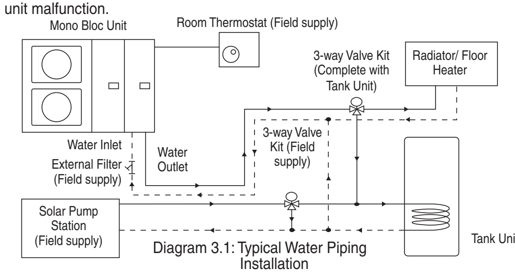
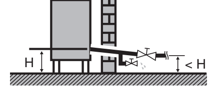


Diagram 3.1: Typical Water Piping Installation

- Choose proper sealer which can withstand the pressures and temperatures of the system.
- Make sure to use two spanners to tighten the connection. Further tighten the nuts with torque wrench in specified torque as stated in the table.

Model	Nut size (Torque)
	Water
WH-MHF09D3E8	Rp 1 1/4" [117.6 N•m]
WH-MHF12D9E8	

- If non-brass metallic piping is used for installation, make sure to insulate the piping to prevent galvanic corrosion.
- Do not use pipes that are crushed or deformed. If these inferior pipes are used, it may cause unit malfunction.
- Make sure to insulate the water circuit piping (insulator thickness : 20mm or more) to prevent reduction of heating capacity, as well as avoid freezing of the outdoor water circuit piping during winter season.
- After installation, check the water leakage condition in connection area during test run.
- In case of a power supply failure or pump operating failure, drain the system (as suggested in the figure below).



When water is idle inside the system, freezing up is very likely to happen which could damage the system.

Drainage piping installation
- Use a drain hose with inner diameter of 15 mm.
- The hose must be installed in a continuously downward direction and left open to the frost-free atmosphere.
- If drain hose is long, use a metal support fixture along the way to eliminate the wavy pattern of drain tube.
- Water will drip from this hose , therefore the outlet of this hose must be installed in an area where the outlet cannot become blocked.
- Do not insert this hose into sewage or drain pipe that may generate ammonia gas, sulfuric gas, etc.
- If necessary, use a hose clamp to tighten the hose at drain hose connector to prevent it from leaking.

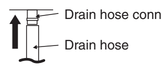
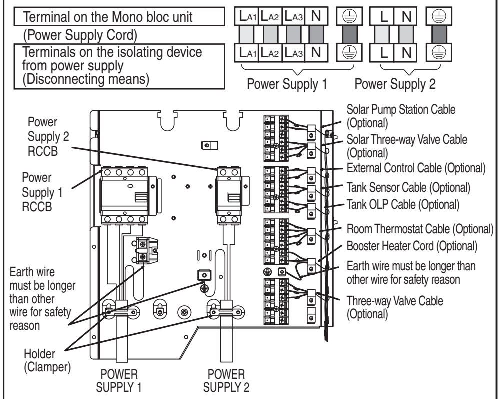


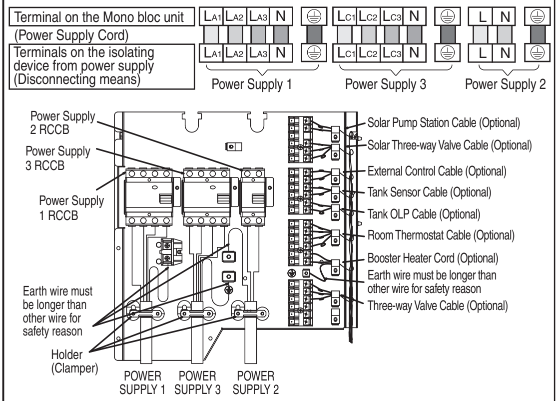
Illustration of how to fix drain hose to Mono bloc unit

4 CONNECT THE CORD AND CABLE TO MONO BLOC UNIT

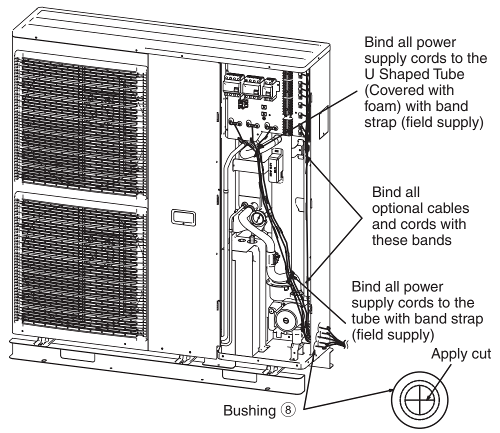
(REFER TO WIRING DIAGRAM AT UNIT FOR DETAIL)
1. An isolating device must be connected to the power supply cable (Disconnecting means).
   - Isolating device (Disconnecting means) should have minimum 3.0 mm contact gap.
   - Connect the approved polychloroprene sheathed power supply 1 cord (5 x min 1.5 mm²) and power supply 2 cord (3 x min 1.5 mm²) and power supply 3 cord (5 x min 1.5 mm²), type designation 60245 IEC 57 or heavier cord to the RCCB, and to the other end of the cord to isolating device (Disconnecting means).
2. To avoid the cable and cord being damaged by sharp edges, the cable and cord must be passed through a bushing (located at the right hand side of the mono bloc unit) before being connected to the terminal block. The bushing must be used and must not be removed.
3. Secure the cable onto the control board with the holder (clamper).



How to guide power supply cords and optional cable / cord for WH-MHF09D3E8 (View without internal wiring)

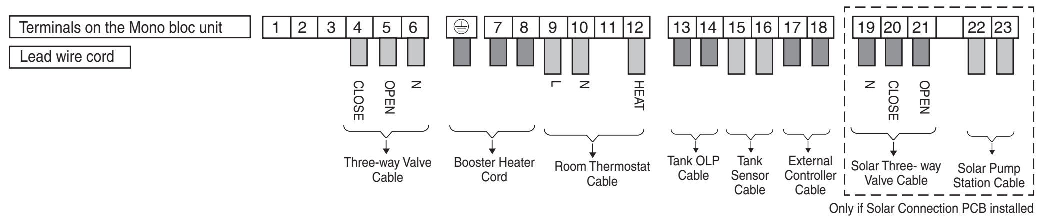


How to guide power supply cords and optional cable / cord for WH-MHF12D9E8 (View without internal wiring)

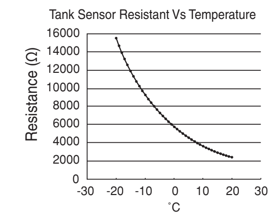


How to guide cable / cord to bushing

Connecting with external device (optional)
1. All connections shall follow to the local national wiring standard.
2. It is strongly recommended to use manufacturer-recommended parts and accessories for installation.
3. Maximum output power of booster heater shall be ≤ 3 kW. Booster Heater cord must be (3 x min 1.5 mm²), of type designation 60245 IEC 57 or heavier.
4. Three-way Valve shall be spring and electronic type. Valve cable shall be (3 x min 0.5 mm²), of type designation 60245 IEC 57 or heavier, or similarly double insulation sheathed cable.
   * note: - Shall be CE marking compliance component.
   - It shall be directed to heating mode when it is OFF.
   - Maximum load for the valve is 9.8VA.
5. Room Thermostat cable must be (4 or 3 x min 0.5 mm²), double insulation layer of PVC-sheathed or polychloroprene sheathed cable.
6. Tank OLP cable must be (2 x min 0.5 mm²), double insulation layer of PVC-sheathed or polychloroprene sheathed cable.
   * note: if such connection deemed NO necessary for tank OLP, please connect jumper between terminal no. 13 and 14.
7. Tank Sensor shall be resistance type, please refer to Graph 4.1 for the characteristic and details of sensor. Its cable shall be (2 x min 0.3 mm²), double insulation layer (with insulation strength of min 30V) of PVC-sheathed or polychloroprene sheathed cable.
8. External Controller shall be connected to 1-pole switch with min 3.0mm contact gap. (connection refer to Diagram 4.2). Its cable must be (2 x min 0.5 mm²), double insulation layer of PVC-sheathed or polychloroprene sheathed cable.
   * note: - When making such connection, kindly remove the jumper between terminal no. 17 and 18.
   - Switch used shall be CE compliance component.
   - Maximum operating current shall be less than $3A_{rms}$.
9. Must install Solar Connection PCB 4 (optional) to Mono bloc unit when Solar Pump Station is utilized. Refer Solar Connection PCB's installation instruction for detail of installation.
10. Solar Three-way Valve cable shall be (3 x min 0.5 mm²), double insulation layer PVC-sheathed or polychloroprene sheathed cable.
11. Solar Pump Station cable shall be (2 x min 0.5 mm²), of double insulation PVC-sheathed or polychloroprene sheathed cable. Strongly recommended install with maximum length of 10 meter only.

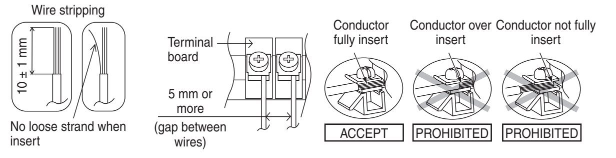


Terminal screw	Tightening torque N•cm {kgf•cm}
M4	157~196 {16~20}
M5	196~245 {20~25}



Graph 4.1: Tank sensor characteristic

WIRE STRIPPING AND CONNECTING REQUIREMENT



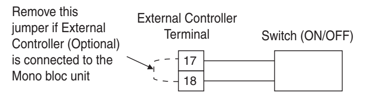


Diagram 4.2: External Controller connecting diagram

CONNECTING REQUIREMENT

For WH-MHF09D3E8:
- The equipment's power supply 1 complies with IEC/EN 61000-3-2.
- The equipment's power supply 2 complies with IEC/EN 61000-3-2.

For WH-MHF12D9E8:
- The equipment's power supply 1 complies with IEC/EN 61000-3-2.
- The equipment's power supply 2 complies with IEC/EN 61000-3-2.
- The equipment's power supply 3 complies with IEC/EN 61000-3-2.
- The equipment's power supply 3 shall be connected to a suitable supply network, with the following maximum permissible system impedance Z_{max} at the interface of the point for model:
  WH-MHF12D9E8 : 0.449 Ω
  Please liaise with supply authority to ensure that the power supply 3 is connected to a supply of the impedance or less.

WIRED REMOTE CONTROL 3 INSTALLATION

⚠ WARNING

⊘	Do not modify the length of the remote control cable. Otherwise, it will cause fire or electrical shock.
❗	Be sure to turn off the main power before installing and connecting the remote control. Otherwise, it will cause the electrical shock.
❗	Use the attached accessories parts and specified parts for installation. Otherwise, it will cause the set to fall, fire or electrical shock.
❗	Wire routing must be properly arranged so that control board cover is fixed properly. If control board cover is not fixed properly, it will cause fire or electrical shock.
❗	If passing the remote control cable through a wall, be sure to install a water trap above the cable. Otherwise, it will cause the electrical shock.

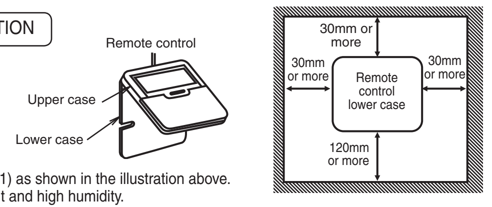
⚠ CAUTION

❗	Install in a flat surface to avoid warping of remote control, else damage to the LCD case or operation problems may result.
❗	Avoid installing the remote control cable near refrigerant pipes or water pipes, else will cause electrical shock or fire.
❗	Install the remote control cable at least 5cm away from electric wires of other appliances to avoid miss operation (electromagnetic noise).
❗	Be sure to use only the accessory screws to avoid damage of remote control PCB.

ATTACHED ACCESSORIES

No.	Name	Qty.	Diagram	Remark
(1)	Remote control	1		
(2)	Remote control cable	1		Length (15 m)
(3)	Screw (M4 machine pitched - 30mm)	3		Installing the remote control to an outlet box (embedded cable)
(4)	Screw (M4 self tapping - 14mm)	3		Installing the remote control to the wall (exposed cable)

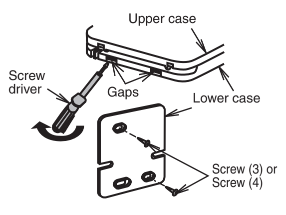
1. SELECTING THE INSTALLATION LOCATION



- Allow sufficient space around the remote control (1) as shown in the illustration above.
- Install in a place which is away from direct sunlight and high humidity.
- Install in a flat surface to avoid warping of the remote control. If installed to a wall with an uneven surface, damage to the LCD case or operation problems may result.
- Install in a place where the LCD can be easily seen for operation. (Standard height from the floor is 1.2 to 1.5 meters.)
- Avoid installing the remote control cable near refrigerant pipes or drain pipes, else it will cause electrical shock or fire.

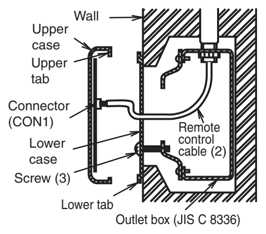
2. INSTALLING THE REMOTE CONTROL UNIT TO THE WALL

1. Remove the remote control (1) lower case.
   (Insert a flat-tipped screw driver or similar tool 2 to 3 mm into one of the gaps at the bottom of the case, and twist to open. Refer to the illustration at right.)
   Be careful not to damage the lower case.
2. Do not remove the protective tape which is affixed to the upper case circuit board when removing the remote control lower case.
3. Secure the lower case to an outlet box or wall. Refer to (A) or (B) instructions below depending on your choice of cable installation.
4. Be sure to use only the screws provided.
5. Do not over tighten the screws, as it may result in damage to the lower case.



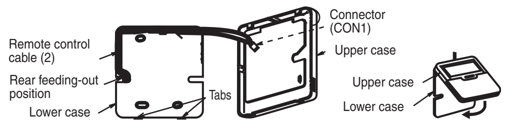
A. IF REMOTE CONTROL CABLE IS EMBEDDED

1. Embed an outlet box (JIS C 8336) into the wall. Outlet box may be purchased separately.
   Medium-sized square outlet box (obtain locally) Part No. DS3744 (Panasonic Co., Ltd.) or equivalent.
2. Secure the remote control lower case to the outlet box with the two accessory screws (3).
   Make sure that the lower case is flat against the wall at this time, with no bending.
3. Pass the remote control cable (2) into the box.
4. Route the remote control cable (2) inside the lower case through rear feeding-out direction.
5. Insert firmly the connector of remote control cable (2) to connector (CON1) in the upper case circuit board. [Refer to the illustration at below.]
6. Secure the remote control upper case to the lower case with the tabs provided.



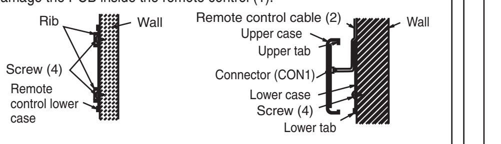
⚠ CAUTION

When the wall is hollow, please be sure to use the sleeve for remote control cable to prevent dangers caused by mice biting the cable.

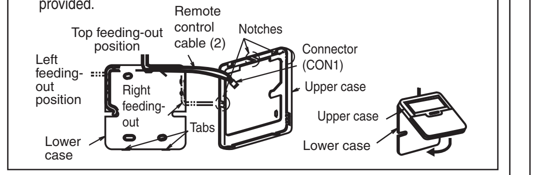


B. IF REMOTE CONTROL CABLE IS EXPOSED

1. Install the remote control lower case to the wall with the two accessory screws (4).
2. Fasten the screws properly until screw head is lower than the rib and reach the base of remote control lower case to ensure they do not damage the PCB inside the remote control (1).



3. The feeding-out direction for the remote control cable can be either via top, left or right side.
4. Use nipper to cut a notch at the upper case. (Select the intended feeding-out position)
5. Route the remote control cable (2) inside the lower case in accordance with the intended feeding-out direction. (Refer to the illustration at below)
6. Insert firmly the connector of remote control cable (2) to connector (CON1) in the upper case circuit board. (Refer to the illustration at below)
7. Secure the remote control upper case to the lower case with the tabs provided.

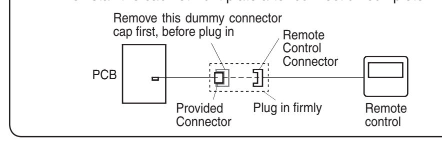


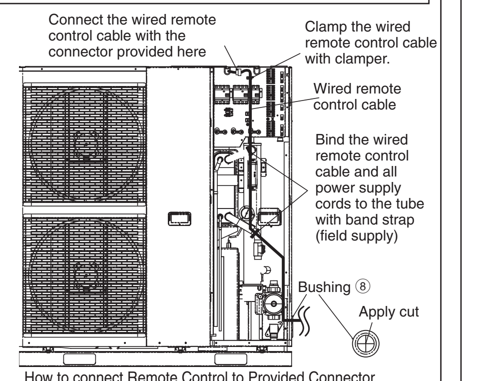
3. CONNECTING THE REMOTE CONTROL CABLE TO MONO BLOC UNIT

⚠ WARNING

Be sure to turn off the main power before installing and connecting the remote control. Otherwise, it will cause the electrical shock.

1. Remove the cabinet front plate.
2. Connect the remote control cable with the provided connector as shown in below illustration. (Refer wiring diagram for detail.)
3. Guide the remote control cable through the clamper and Bushing ⑧.
   (Refer illustration "How to connect Remote Control to Provided Connector" for detail.)
4. Reinstall the cabinet front plate after connection complete.





How to connect Remote Control to Provided Connector

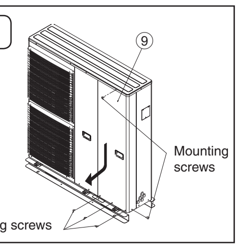
5 CHECKING AND TEST RUN PROCEDURES

⚠ WARNING

Be sure to switch off all the power supply before performing each of the below action.

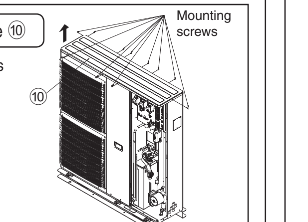
Remove The Cabinet Front Plate ⑨

(1) Remove the 5 mounting screws as shown in the illustration.
(2) Slide the cabinet front plate ⑨ downward to release the pawls. Then, pull it toward front to remove it.



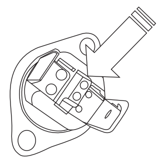
Remove The Cabinet Top Plate ⑩

(1) Remove the 11 mounting screws as shown in the illustration.
(2) Lift the cabinet top plate ⑩ upward to remove it.



RESET OVERLOAD PROTECTOR ⑪

Overload Protector ⑪ serves the safety purpose to prevent the water over heating. When the Overload Protector ⑪ trip at high water temperature, take below steps to reset it.
1. Take out OLP Cover.
2. Use a test pen to push the centre button gently in order to reset the Overload protector ⑪.
3. Fix the OLP Cover to the original fixing condition.



How to reset Overload protector ⑪

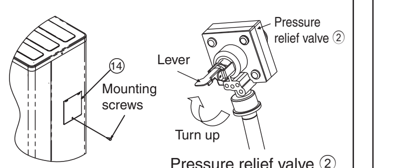
CHECK WATER PRESSURE

*(0.1 MPa = 1 bar)

Water pressure should not lower than 0.05 MPa (with inspects the pressure gauge). If necessary add tap water into tank unit. Refer to tank unit installation instruction for details on how to add water.

CHECK PRESSURE RELIEF VALVE ②

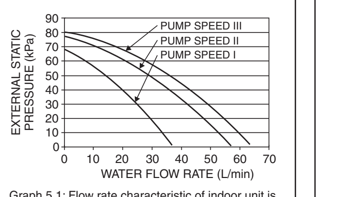
- Take out the cover ⑭ with remove the mounting screw for access to the pressure relief valve ②.
- Check for correction operation of pressure relief valve by turn up the lever to become horizontal. (Refer to figure of "Pressure relief valve ②")
- If you do not hear a clacking sound (due to water drainage), contact your local authorized dealer.
- Turn down the lever after checking finish.
- In case the water keeps drained out from the unit, switch off the system, and then contact your local authorized dealer.
- Reinstall the cover ⑭ with tighten the mounting screws properly, if the pressure relief valve ② is functioning normal.



Pressure relief valve ②

HOW TO ADJUST WATER FLOW RATE

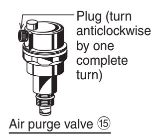
Before adjust the water flow rate, make sure that the total water volume in the installation is 50 litres minimum.
The water flow rate can be adjusted with select the water pump speed on the water pump ⑤. The default setting is medium speed (II). However, please ensure the minimum flow rate cannot be less than 18L/min.
Adjust it to high speed (III) or slow speed (I) if necessary (e.g. reduce the noise of running water).
Graph 5.1 shown the external static pressure (kPa) versus water flow rate (L/min).



Graph 5.1: Flow rate characteristic of indoor unit is as per above mentioned.

CHECK AIR PURGE VALVE ⑮

Air purge valve ⑮ must be installed at all high points in a closed water circuit system. An automatic air purge valve ⑮ is provided inside the indoor unit. To automatically purge the air from the system, turn the plug on the air outlet anticlockwise by one complete turn from fully closed position.
Excessive air is automatically purged if the plug is kept in this position.



Air purge valve ⑮

CHECK RCCB

Ensure the RCCB set to "ON" condition before check RCCB.
Turn on the power supply to the Mono bloc unit.
This testing could only be done when power is supplied to the Mono bloc unit.

⚠ WARNING

Be careful not to touch parts other than RCCB test button when the power is supplied to Mono bloc unit. Else, electrical shock may happen.

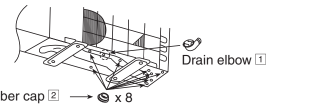
- Push the "TEST" button on the RCCB. The lever would turn down and indicate "0", if it functions normal.
- Contact authorized dealer if the RCCB malfunction.
- Turn off the power supply to the Mono bloc unit.
- If RCCB functions normal, set the lever to "ON" again after testing finish.

TEST RUN

1. Fill up the Tank Unit with water. For details refer to Tank Unit installation instruction and operation instruction.
2. Antifreeze agent must be added into water circuit to prevent freezing of water when outdoor ambient temperatures is low. Recommended antifreeze: Propylene glycol: 40% (equivalent to -20°C)
3. Set ON to the Mono bloc unit and RCCB. Then, for remote control operation please refers to (Mono bloc) Air-to-Water Heatpump's operation instruction.
4. For normal operation, pressure gauge reading should be in between 0.05 MPa and 0.3 MPa. If necessary, adjust the water pump speed accordingly to obtain normal water pressure operating range. If adjust water pump speed cannot solve the problem, contact your local authorized dealer.
5. After test run, please clean the external filter. Reinstall it after finish cleaning.

DISPOSAL OF MONO BLOC UNIT DRAIN WATER

- When a Drain elbow 1 is used, please ensure to follow below:
  - The unit should be placed on a stand which is taller than 50mm.
  - Cover the 8 holes (ø20mm) with Rubber cap 2 (refer to illustration below)
  - Use a tray (field supply) when necessary to dispose the Mono bloc unit drain water.



- If the unit is used in an area where temperature falls below 0°C for 2 or 3 consecutive days, it is recommended not to use the Drain elbow 1 and Rubber cap 2, for the drain water freezes and the fan will not rotate.

EXPANSION VESSEL ⑬ PRE PRESSURE CHECKING

- Expansion Vessel ⑬ with 10 L air capacity and initial pressure of 1 bar is installed in this Mono bloc unit.
- Total amount of water in system should be below 200 L.
  (Note: This amount of water is not include the tank unit volume)
- If total amount of water is more than 200L, please install additional expansion vessel (field supply).
- Please keep the installation height difference of system water circuit within 10 m.
  (Inner volume of same Mono bloc unit is about 5 L)

BASE PAN HEATER 5 (OPTIONAL)

- It is strongly recommended to install a Base Pan Heater 5 (optional) if the Mono bloc unit is installed in cold climate area. Refer the Base Pan Heater 5 (optional) installation instruction for details of installation.

MAINTENANCE

- In order to ensure optimal performance of the unit, seasonal inspections on the unit, external filter and field wiring have to be carried out at regular intervals. This maintenance should be carried out by authorized dealer.

⚠ WARNING

Do not add or replace other than R407C type. It may cause product damage, burst , injury and etc. Use compatible R410A tools for refrigerant piping work and refrigerant charging during installation or servicing.

CHECK ITEMS

- ☐ Is the connecting cable fixed to terminal board firmly?
- ☐ Is the connecting cable clamped firmly?
- ☐ Is the earth wire connection properly done?
- ☐ Is water pressure higher than 0.05 MPa?
- ☐ Is the pressure relief valve operation normal?
- ☐ Is the RCCB operation normal?
- ☐ Is the power supply voltage within the rated voltage range?
- ☐ Is there any abnormal sound?
- ☐ Is the heating operation normal?
- ☐ Is the thermostat operation normal?
- ☐ Is the remote control LCD operation normal?
- ☐ Is the Mono bloc unit water leak free on test run?

ENGLISH

F615252 1/13

PRINTED IN MALAYSIA