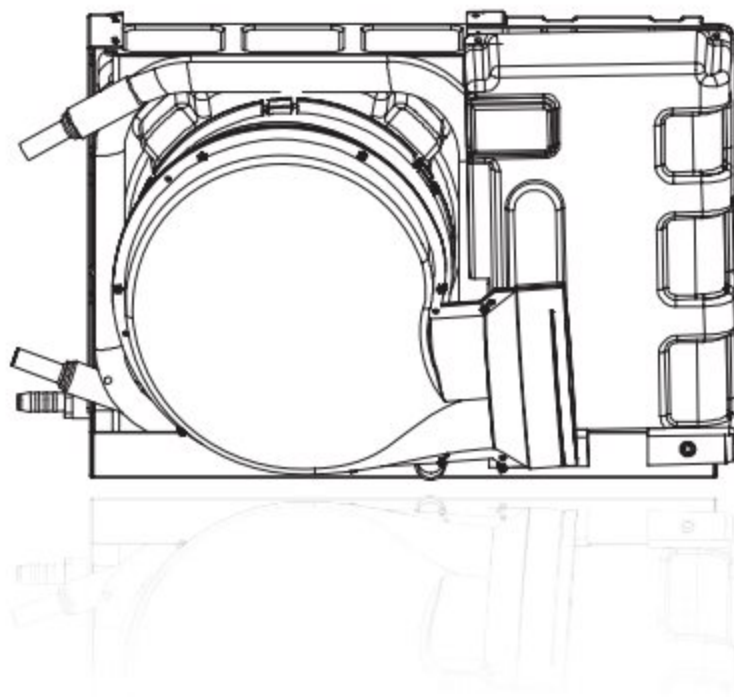


MarinAire[®]

Marine Air Conditioner User's and Installation Manual



Applies to all self contained models

- Please read this manual before use
- Keep this manual safe for future reference
- Installation and after sales services should be performed by marine AC mechanics

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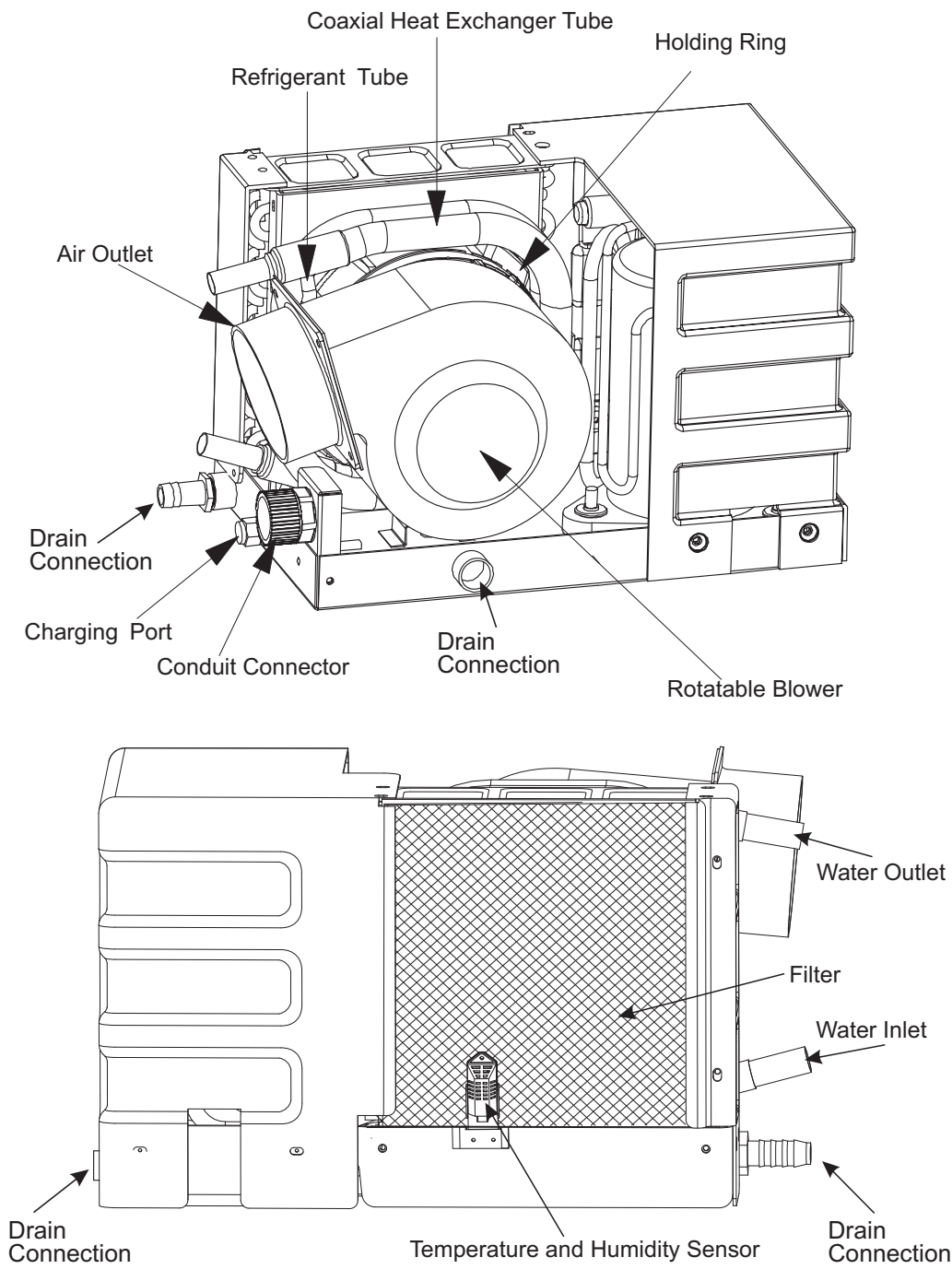
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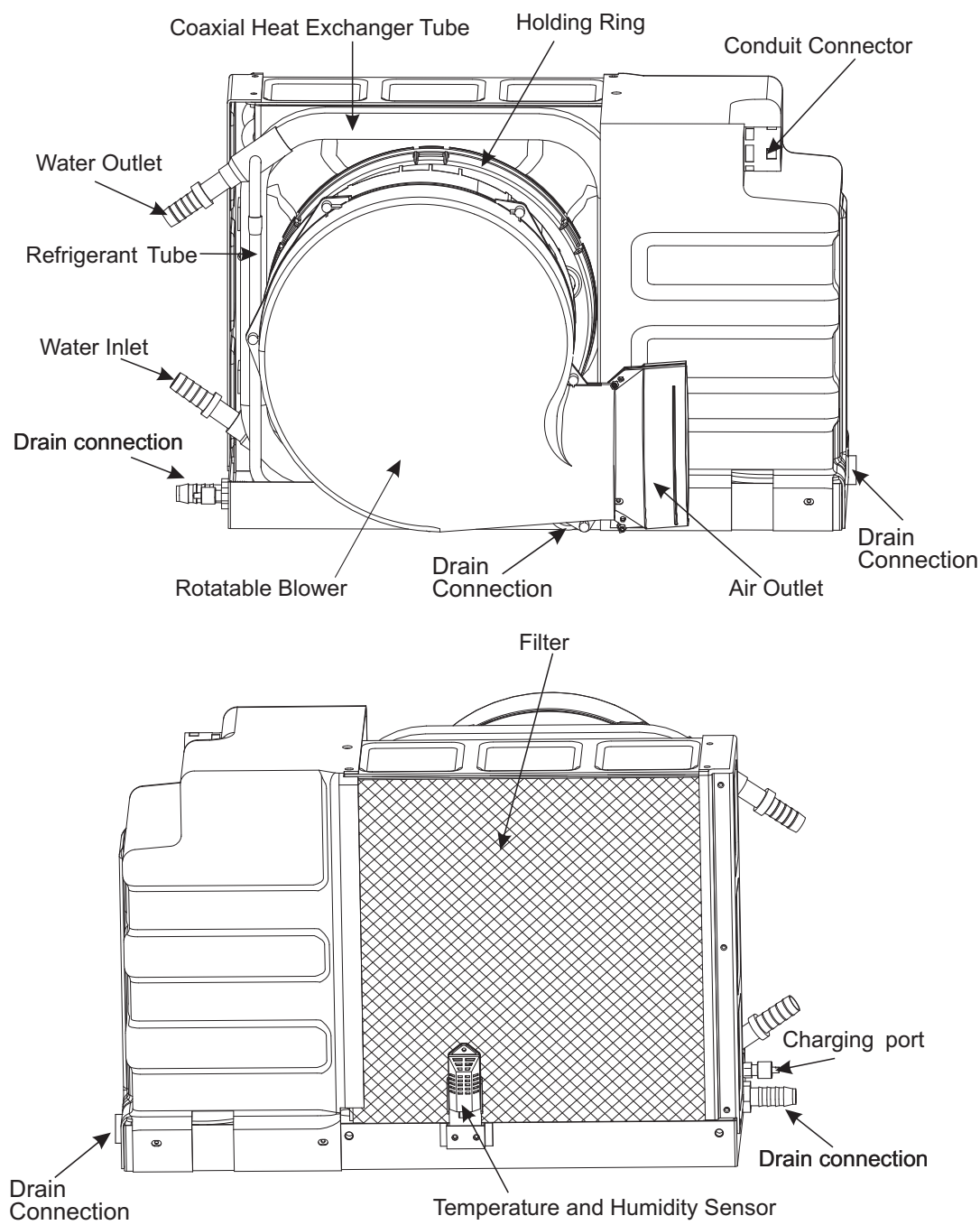
A/C DESCRIPTION

Components MSBA6



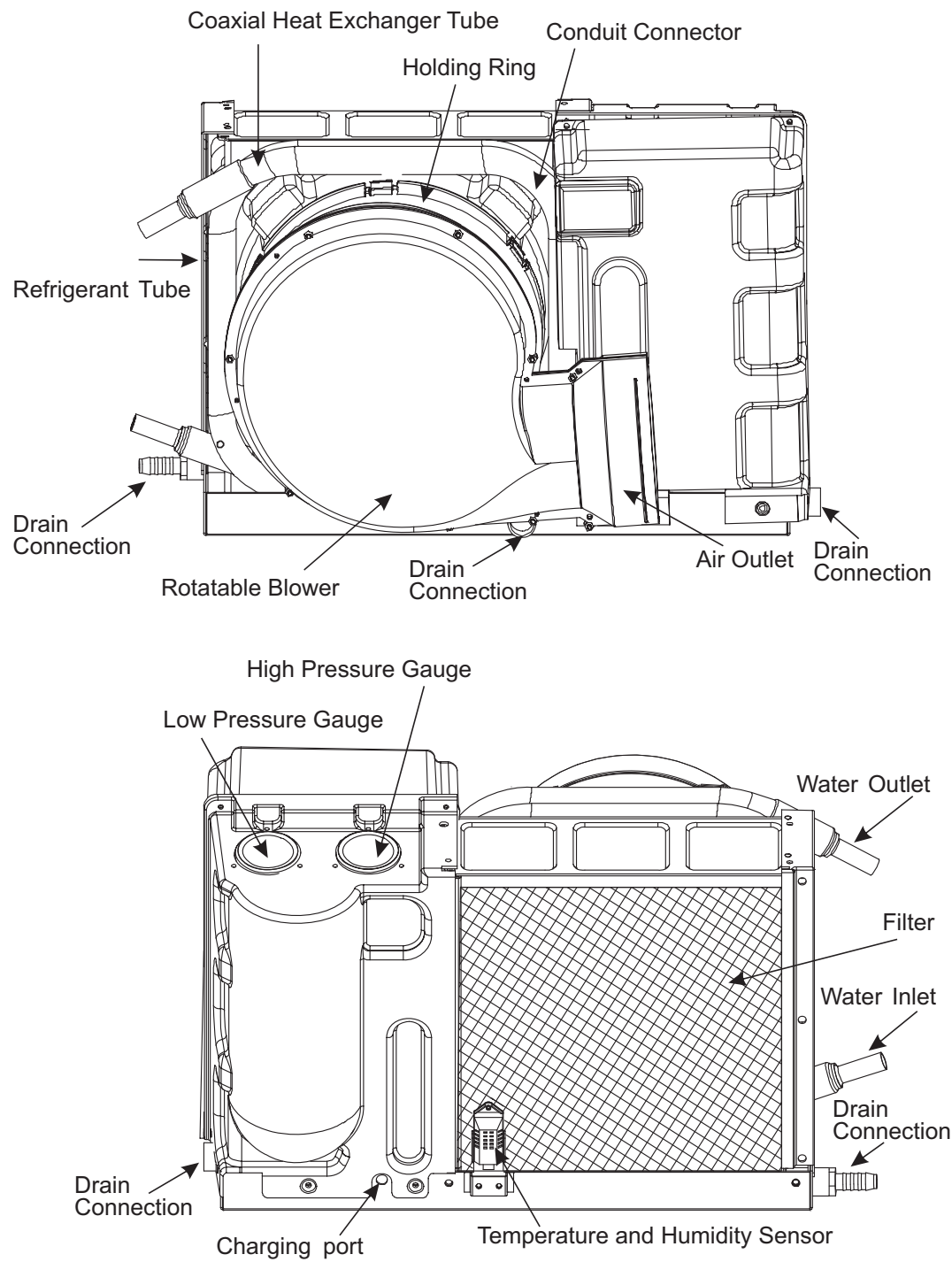
A/C DESCRIPTION

Components MSBA9



A/C DESCRIPTION

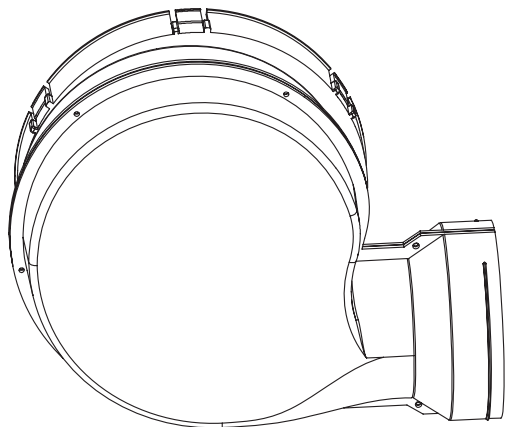
Components MSBA11、MSBA14、MSBA16



A/C DESCRIPTION

A/C Features

MSBA9, MSBA11, MSBA14, MSBA16. 360 Degree Rotatable Blower



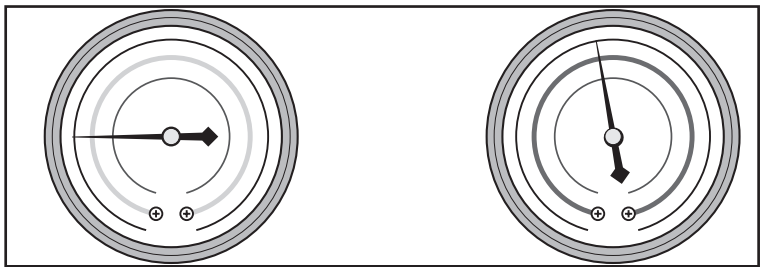
Fan

※ 360 Degree Rotatable Blower.
The unique design makes it very easy to rotate the blower outlet.
The blower can be rotated in any angle within minutes.

※ MSBA6 can be rotated only up to 90° angle.

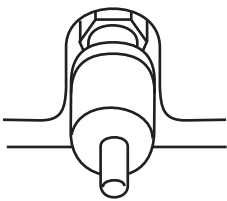
(To change air direction, just loosen the metal clamp, then adjust it to the desired angle and re-tighten the metal clamp)

High, low pressure gauge and charging port



Low pressure gauge (Blue)

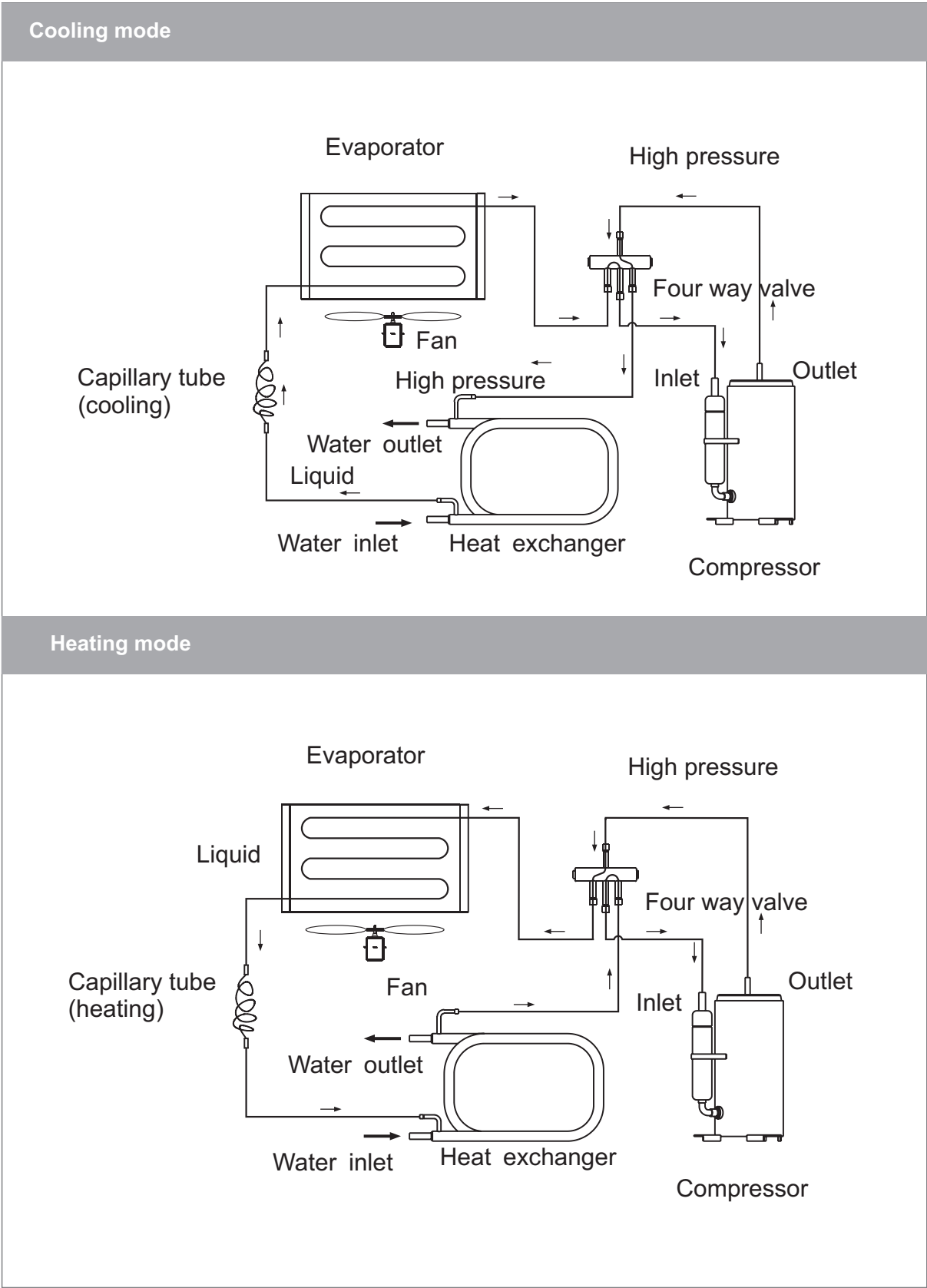
High pressure gauge (Red)



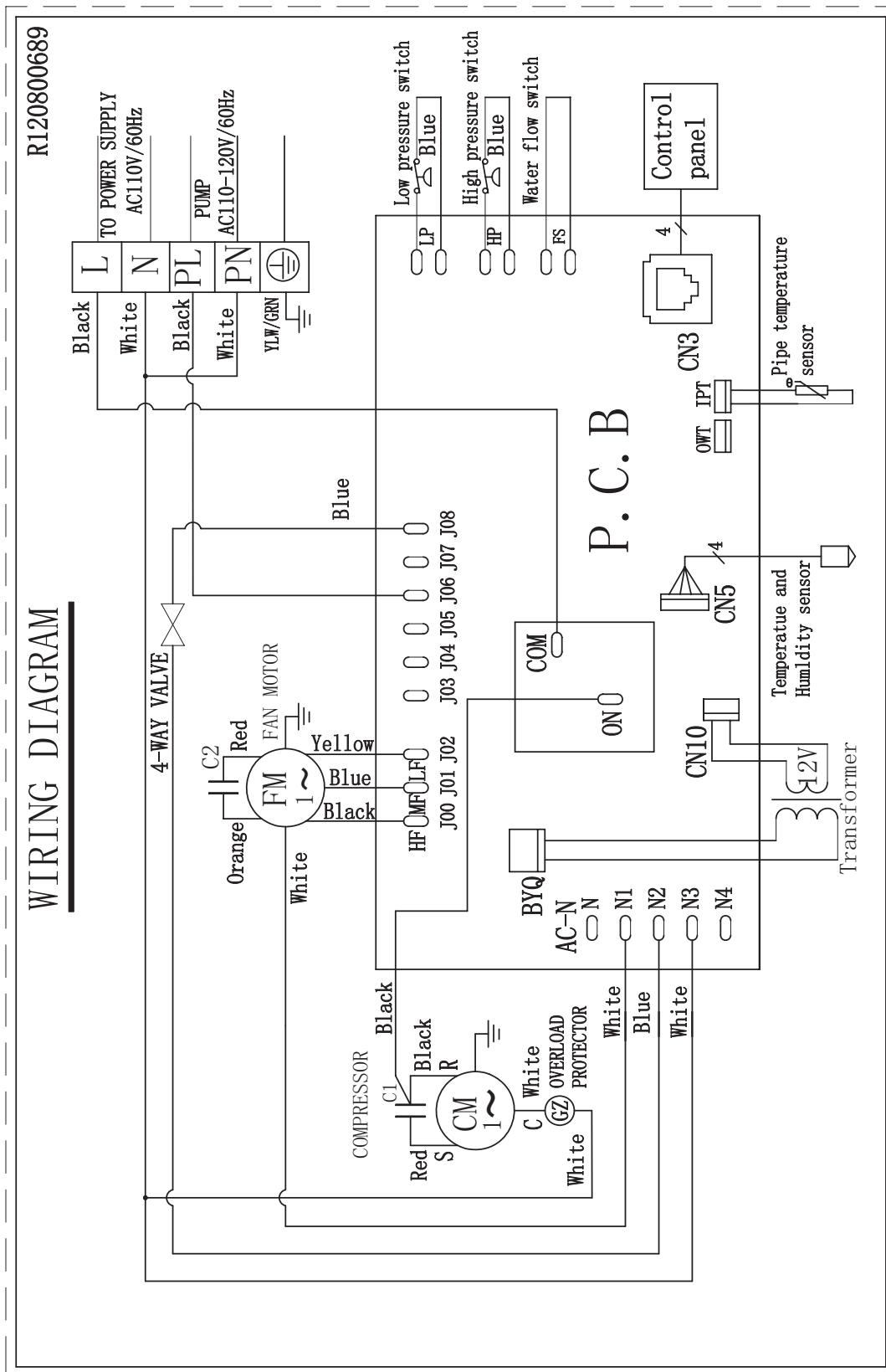
Charging Port

Entering Water Temperature	40	50	60	70	80	90	95	— °F
Low Pressure at Cooling operation	No operation	No operation	116	121.8	127.6	130.5	159.5	— PSI
High Pressure at Cooling operation	No operation	No operation	290	333.6	355.3	442.4	464.1	— PSI
Low Pressure at Heating operation	101.5	123.3	137.8	159.5	No operation	No operation	No operation	— PSI
High Pressure at Heating operation	391.6	435.1	493.1	551.1	No operation	No operation	No operation	— PSI

Principles of Refrigeration and Heating



WIRING DIAGRAM



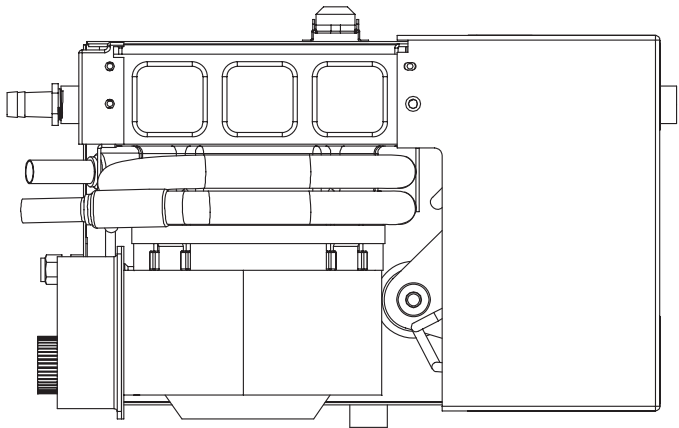
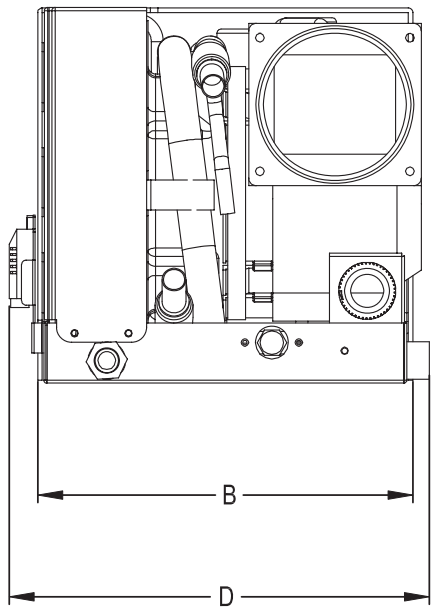
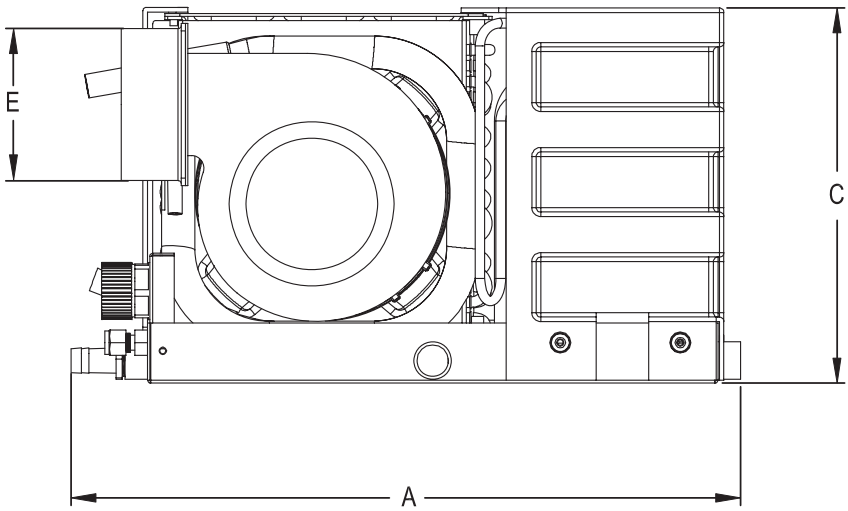
※ Some models may have single speed motor please refer to the wiring diagram in the electric box.

DIMENSIONS

Dimensions

MSBA6K2

Dimensions	(in/mm)
A	17.5/445
B	9.5/242
C	10/251
D	11/280
E	4/101

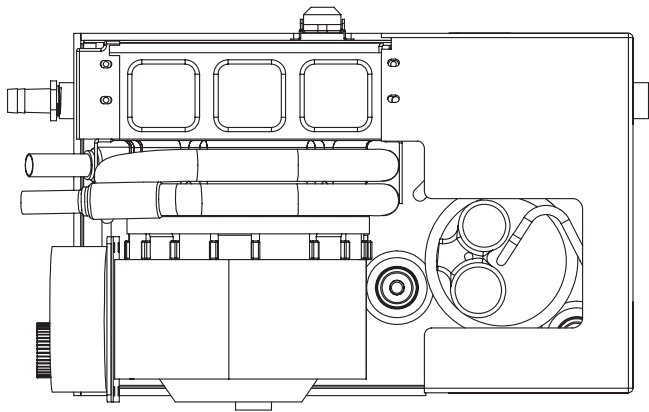
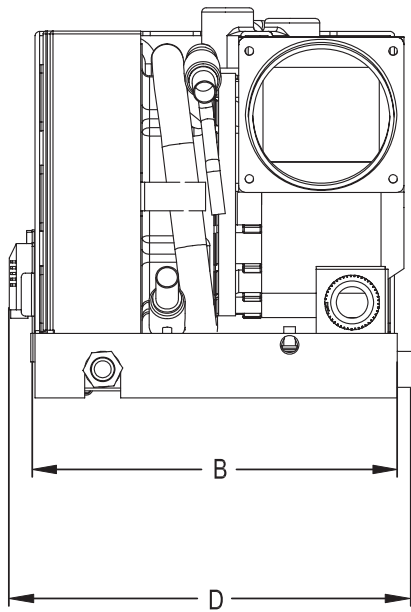
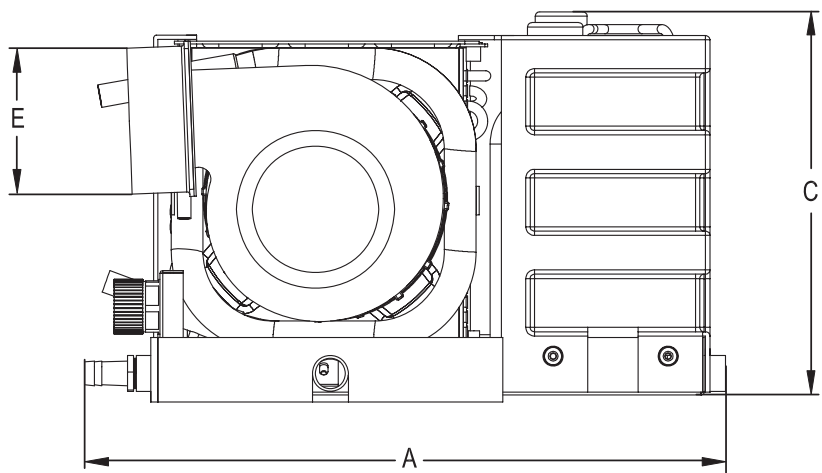


DIMENSIONS

Dimensions

MSBA6C2

Dimensions	(in/mm)
A	17.5/445
B	9.5/242
C	11/280
D	11/280
E	4/101

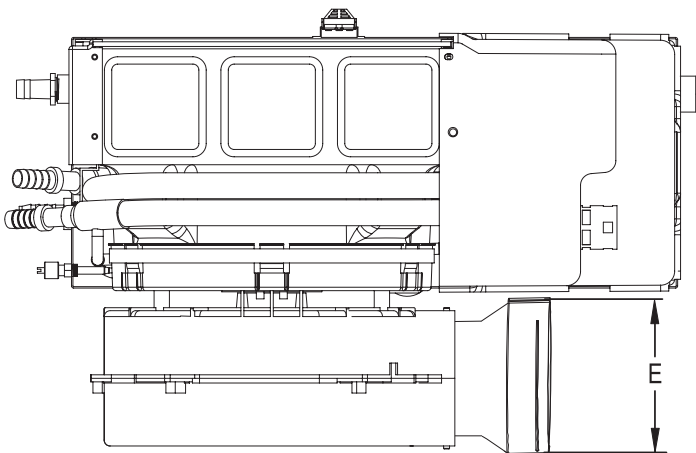
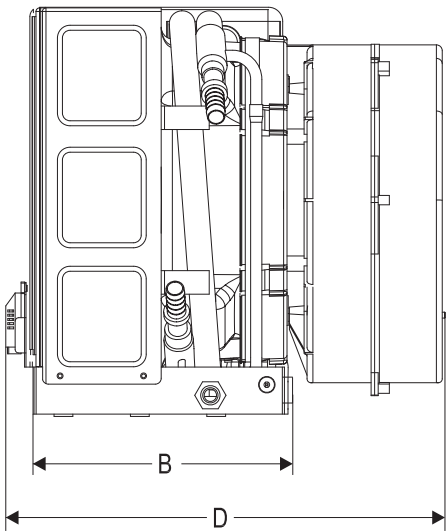
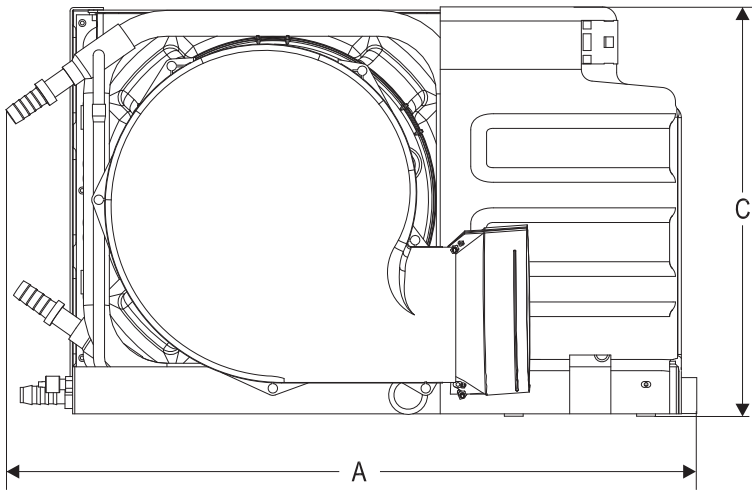


DIMENSIONS

Dimensions

MSBA9

Dimensions	(in/mm)
A	22. 7/577
B	8. 9/226
C	13. 7/348
D	14. 7/374
E	6/152

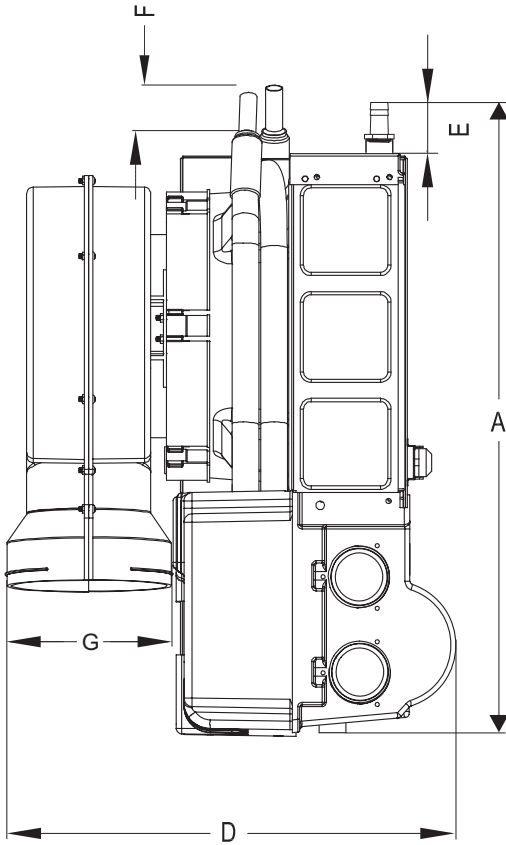
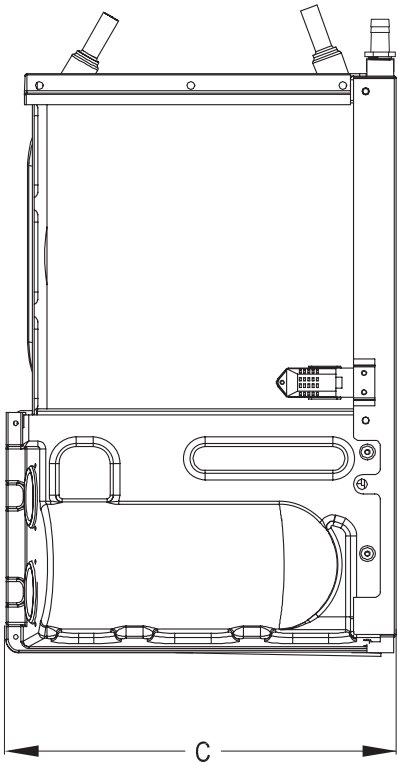
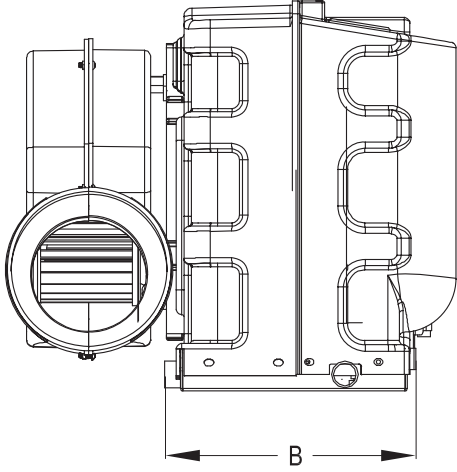


DIMENSIONS

Dimensions

MSBA11, MSBA14, MSBA16

Dimensions	(in/mm)
A	23. 2/590
B	8. 9/227
C	14. 4/365
D	16. 5/419
E	1. 9/50
F	1. 4/35
G	6/152



INSTALLATION

Clean Air Act

MarinAire MSBA series use environmentally friendly refrigerant R410A. Refer to www.epa.gov for rules & regulations on how to handle R410A.

Operation Limits

Cooling Operation: Incoming Water temperature (sea, river, lake water temperature) of 60 °F to 95 °F

Heating Operation: Incoming Water temperature (sea, river, lake water temperature) of 40 °F to 77 °F

Caution: Operating your air conditioner & heat pump out of above mention ranges might cause permanent damage to the compressor, heat exchangers, pump, and other plumbing components.

Warning

The location of the ac must be sealed from bilge and/or engine room vapors. Do not install your air conditioner in the bilge or engine room areas.. Condensate drain hose should not be terminated closed to any outlet of engine, generator exhaust systems, in a bilge. Air conditioner or electric box must not be placed in an explosive environment or exposed to an explosive environment or explosive materials, explosion could occur resulting in serious injury or death and/or destruction of the boat. This equipment does not meet requirements for ignition protection. Do not install in spaces containing gasoline engines, lpg/cpg cylinders, tanks, valves, regulators or fuel line fittings. Failure to comply may result in damages, serious injury or death. Drain line should be connected properly to a sealed condensate tank or shower sump pump.

Installation and servicing of this system can be hazardous. Similar to other air conditioning systems, this equipment involves electrical and high pressure components. Always disconnect power supply prior to perform installation, servicing or maintenance. To minimize the hazard of electrical shock and personal injury, this equipment must be grounded. All Instructions labels and safety codes must be followed when working with this unit. When running, the compressor, and heat exchangers may be hot. Do not touch the equipment when running.

Sizing

Make sure the selected capacity is not oversized for the applicable are. Over sizing might cause damage to the electrical components and/or to the power supply due to frequent start and stop. Over sized air conditioning will not effectively remove the humidity and this may cause high humidity and mold in the cabin. This may also cause high energy consumption. Slightly under sizing may be applicable but significantly under sizing your air conditioning will cause discomfort when you need it the most! The general rule of thumb for sizing a pleasure boat is 14BTU's/cubic foot Use the formula of 16 to 19 BTU's/cubic foot for areas that are used during the heat of the day that have a lot of sunlight coming in such as a pilothouse, especially if the roof is not shaded or well insulated. For areas below deck that are primarily used after sunset such as a stateroom, you can use the formula of 10 - 12 BTU's/cubic foot

Location of the system

Typical spots are under the V-berth, in hanging lockers, under dinette seats, in cabinets or in outside dry lazarets and bottom of lockers. The equipment and peripheral components must fit in and/or be accessible to the selected spot. The unit should be positioned on a firm, level, horizontal (flat) surface and the condensate drain line should run down slope from the unit to a suitable drain location. Drain works with gravity. If you can not find a location for the size of the air conditioner base plate, a mounting shelf or platform must be built. Typically the shelf may be made from 3/4 inch marine grade plywood which can be either fiber glassed or mechanically attached to the boat's sole or superstructure. Do not screw directly into the hull. Never place the electrical box below the air conditioning unit. It is strongly recommended that you locate the return grille as low as possible and the supply air grilles as high as possible in the cabin. This will provide better air circulation. You should plan all connections including ducting, splitter, grilles, condensate drain, water in and out, water filter, water circulation pump, electrical power connections and location of the wall control unit,

INSTALLATION

Mounting legs & Vibration Absorbers

The a/c unit is supplied with a base pan that also serves as a condensate pan. Mounting legs and vibration absorbers are provided to secure the base pan onto a flat surface.

AIR DISTRIBUTION

Blower Assembly

The ultimate engineering design allows the blower to be easily rotated 360° for best angle or removed for servicing. Simply loosen the metal clamp and rotate the blower outlet to the desired angle and tight the metal clamp again. Do not leave the clamp loose and do not over tight it since it may apply tension to the shroud and may cause crack.

Ducting

Install at least one vent within 4 to 5 feet of the unit. Make sure that the airflow is not directed back towards the return air grill. Below rule should be followed as a rule of thumb;

6,000 btu unit: 2 or 3 X 4" supply grills.

9,000–11,000 btu unit: 3 or 4 X 4" supply grills

14,000 btu unit: 3 or more X 4" supply grills or 1 X 6" supply grill and 2 or more X 4" supply grills

16,000 btu unit: 1 X 6" supply grill and 2 or more X 4" supply grills

24,000 btu unit: 3 or more X 6" supply grills

An air splitter is required if more than one supply air grill is used. Splitters may be mounted directly on the unit output, or placed in line a short distance from the unit incase of space restrictions. Use insulated duct if the ducting passes through hot and humid areas. If the ducting is completely inside the air conditioned area, you may use non-insulated duct. Using non insulated duct may cause water condensation. Usually power boats use non-insulated duct and sail boats insulated. Sail boats generally sit lower in the water and have less glass than power boats, they tend to produce more duct condensation than the power boat. All duct runs should be as short and straight as possible. Each 90° bends can reduce airflow by 15% to 20%. Ducting should be tied to a permanent structure properly to eliminate sagging.

Four inch round grills require a 4.5 inch hole. A four inch rectangular grill usually measures 4x8" for the hole size but also requires a booth or transition box behind the grill, also measuring 4x8". These booths extend approximately four inches behind the wall. Booths (transition box) are needed to attach the air duct to the grill.

Return Air

5000 btuh to 9000btuh needs 80-100 square inches (8X10" to 10X10")

12000 btuh to 24000btuh needs 120-150 square inches (10X12" to 10X15")

Always use return grilles with filter. Make sure that the air returns to the a/c unit is properly filtered.

Insure that there is no air passing to the return of the unit from elsewhere. Unfiltered air with dust, dirt and debris will cause poor performance and potentially malfunction. Do not put any object to obstruct the return air grill. For best performance the evaporator side of the unit should face the return air grill. The evaporator should be at least 3" away from the wall if installed sideways.

Where it is not possible to have a single return grill multiple grills may be used. Do not stow items such as life preservers, bedding or other items of this nature between the evaporator and the return air grill.

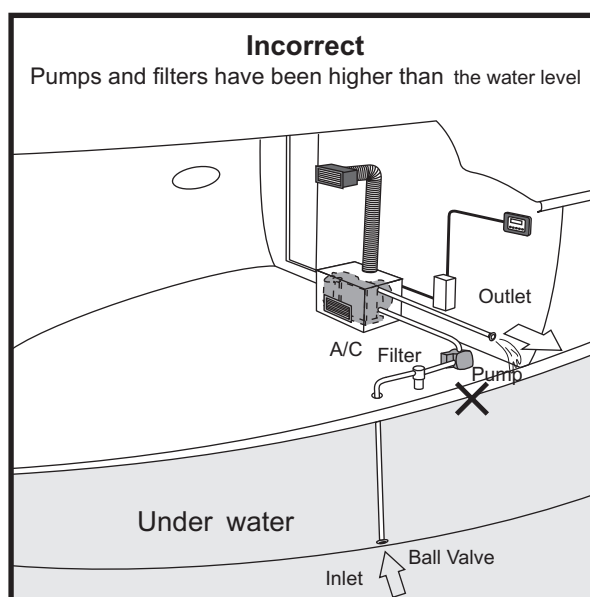
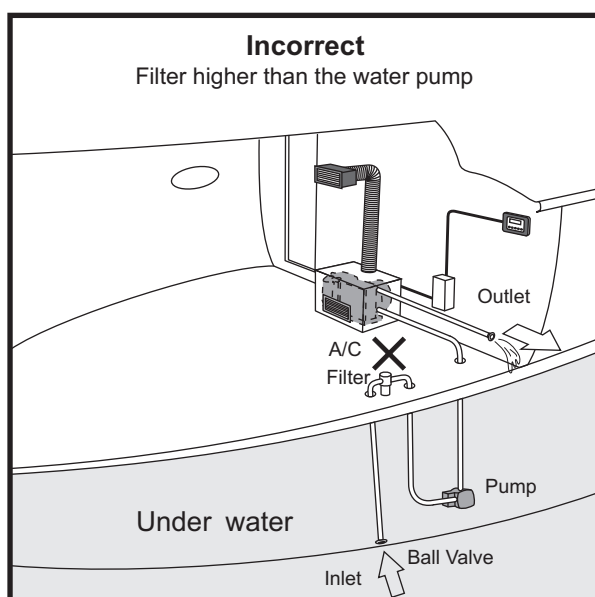
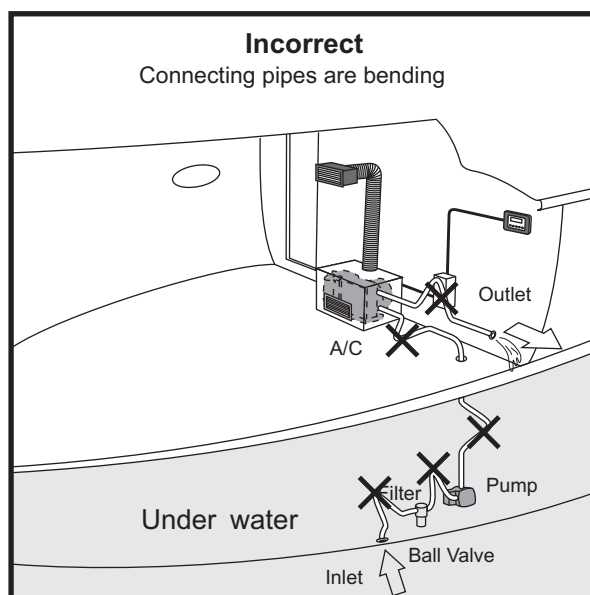
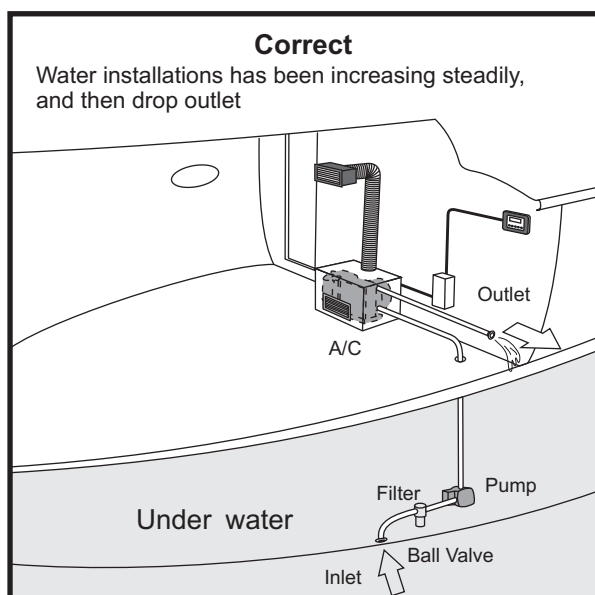
INSTALLATION WATER CIRCULATION

Condensate Drain Connection

During cooling or dehumidifying mode operations, the air conditioner may produce approximately 1/2 gallon per hour. It is important to run condensate drains hose downward to a sump pump. Do not run the condensate drains to the bilge. After the condensate drain connection is complete, test the installation by pouring 1/2 gallon of water within 1 minute into the drain pan and checking for good flow.

Water in & out

Cooling water is provided to the air conditioner via a foot scoop, sea cock, water strainer and pump assembly all of which are mounted at least 1 feet below the sea level. Use 5/8 inch marine water hose. Water in is always located at the lower position and Water out is located at higher position. (from the coaxial condenser heat exchanger). In case water connection is not straight, it is recommended to use a hose barb 90 degree fitting to eliminate any kinking. Insure that the hoses will never be kinked. Install a sea water strainer between the sea cock and the pump. Seawater strainer must be installed below the level of the pump with access to filter. Connect the water out directly to the Thru the hull fitting which is located above the sea level. Double clamp all hose connections with stainless steel clamps, reversing the clamps. Use Teflon tape on all threaded connections. Refer to below illustration for details.



INSTALLATION

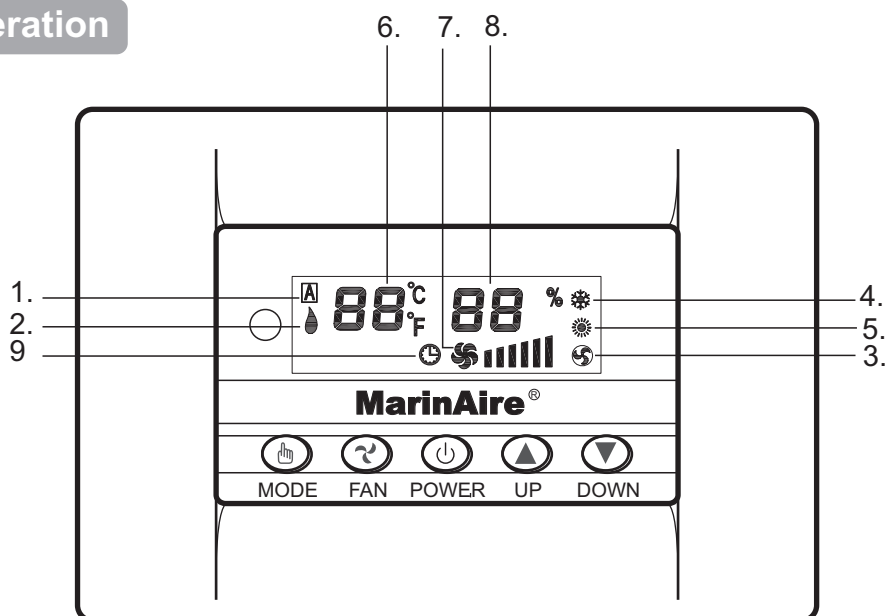
Electrical Power:

Both the air conditioner and pump require same voltage. Make sure the power source is correct for the equipment. (110-120V/60Hz, 208-230V/60Hz and 220-240V/50Hz models available) Power is obtained from the master Circuit Breaker Panel in the boat. Power cables run from this panel to the air conditioner. The air conditioner will then supply power to the pump as required. A terminal strip mounted inside the Electrical box. The terminal strip is labeled for proper connections of the electrical supply, ground wires and pump circuits. A wiring diagram is provided in the electrical box. Minimum of 12 AWG boat cable should be used to supply power to the a/c unit and the seawater pump. Proper grounding is mandatory. A ground connection is provided in the electrical box. All connections shall be made with ring or captive fork terminals. Pump will be connected directly to the terminal strip in the electrical box. Turn off a/c power supply circuit breaker before opening electric box. The a/c unit must be connected to the ship's bonding system to prevent corrosion due to stray electrical current or voltage. All pumps, metallic valves and fittings in the seawater circuit that are isolated from the a/c unit by PVC or rubber hoses must be individually bonded to the vessels bonding system too.

OPERATION

Control Panel Operation

1. Auto mode
2. Dehumidifying mode
3. Fan mode
4. Cooling mode
5. Heating mode
6. Temperature Display
7. Fan speed
8. Humidity Display
9. Timer



A>. When LCD display backlight is off, press any button to light up the backlight; the setting values on display will blink 5 times (one per second), then it will go back to display room temperature and humidity. Backlight will be off 10 seconds later.

B>. The button on controller: "MODE", "FAN", "POWER", "UP" and "DOWN".

C>. "UP" and "DOWN": set the temperature in auto, cooling and heating mode, or humidity level in dehumidifying mode by directly pressing "UP" and "DOWN" button. In cooling, heating and auto mode, press "UP" and "DOWN" to enter temperature setting. The temperature blinks (one per second); In humidity and auto dehumidifying mode, press "UP" and "DOWN" to enter humidity setting. The humidity blinks (one per second). Press "UP" and "DOWN" together for 5 seconds to switch temperature unit (°C to °F or °F to °C).

D>. "MODE": press "MODE" to set operation mode: Auto, Cooling, Dehumidifying, Heating, Auto Dehumidifying and Fan.

E>. "Fan mode": to set fan motor operation mode. Auto speed, high speed, medium speed, and low speed.

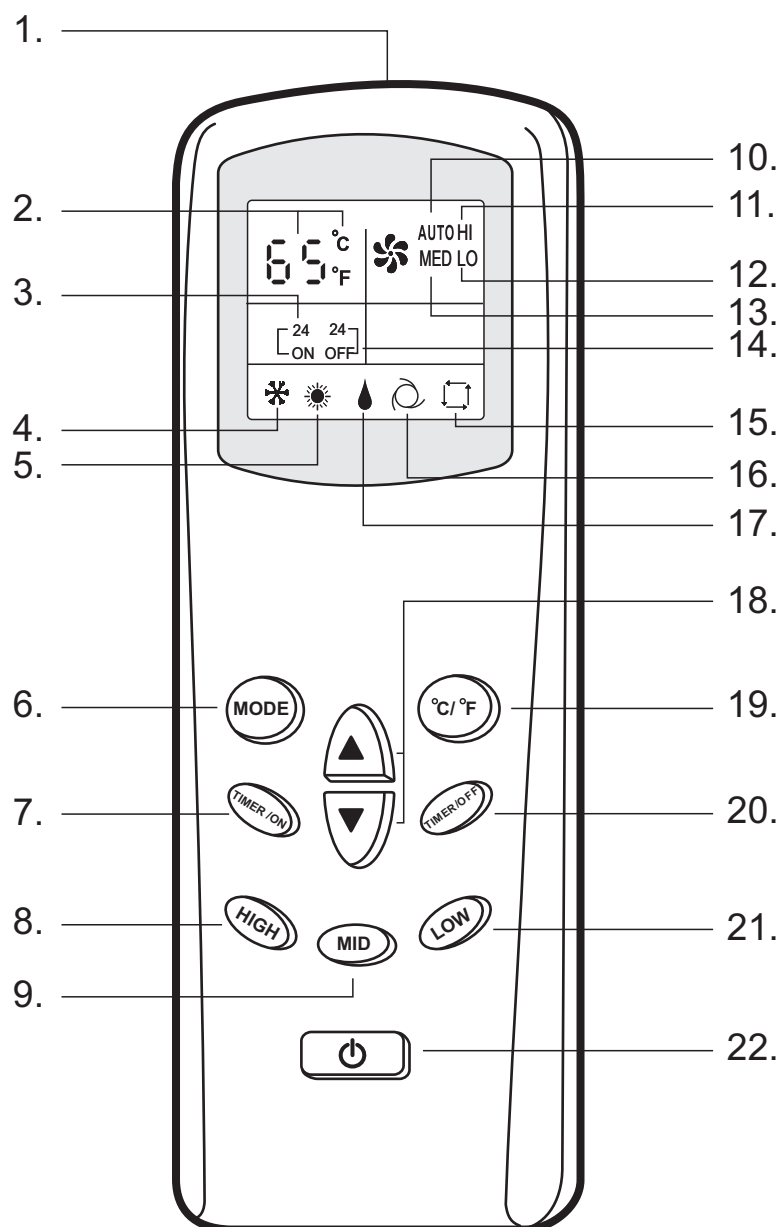
F>. "POWER": to turn on/turn off the a/c.

G>. Use the remote control to set timer; The timer symbol will be displayed on LCD.

OPERATION

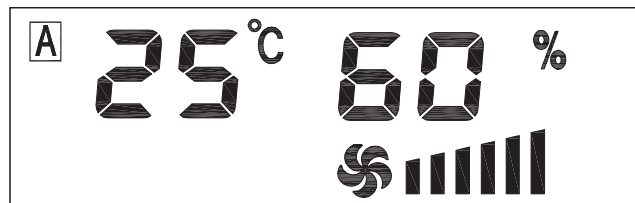
Name and Function

- 1.Signal Transmitter
- 2.Temperature and Humidity display
- 3.Timer ON display
- 4.Cooling mode symbol
- 5.Heating mode symbol
- 6.Mode button
- 7.Timer ON button
- 8.High speed button
- 9.Mid speed button
- 10.Auto speed display
- 11.High speed display
- 12.Low speed display
- 13.Mid speed display
- 14.Timer OFF display
- 15.Auto Mode symbol
- 16.Fan Mode symbol
- 17.Dehumidifying Mode symbol
- 18.UP/DOWN buttons
- 19.Unit change button
- 20.Timer OFF button
- 21.Low speed button
- 22.Power button

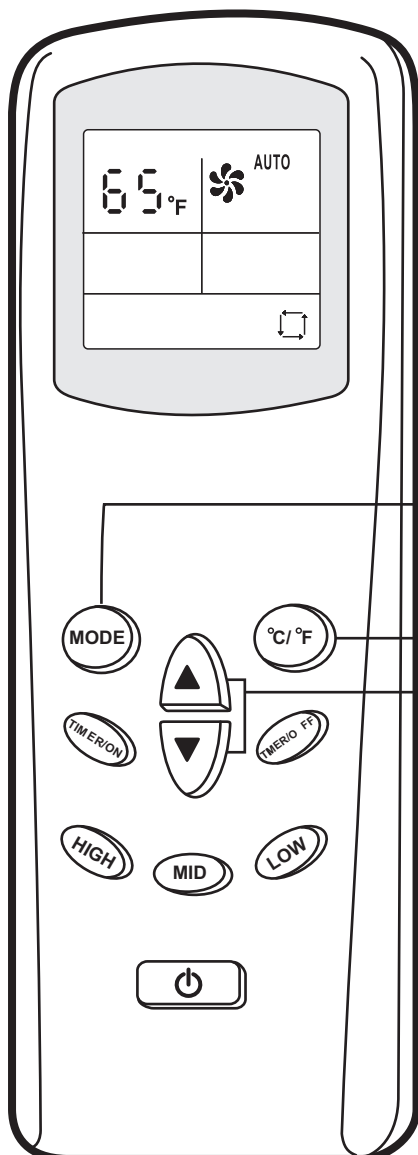


OPERATION

AUTO mode



Display



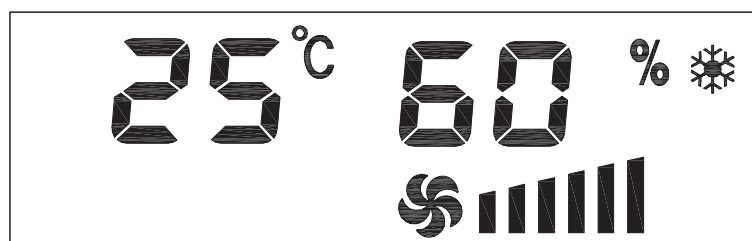
If the setting temperature is greater than the room temperature, the unit will automatically switch to heating mode.
If the setting temperature is lower than the room temperature, the unit will automatically switch to cooling mode.
If the setting temperature is equal to room temp the unit will run on low fan speed.

- 1 Press the **MODE** button to select the AUTO mode.
- 2 Press the **UNIT CHANGE** button to set the temperature unit
- 3 Press the **UP/DOWN** button to set the temperature.

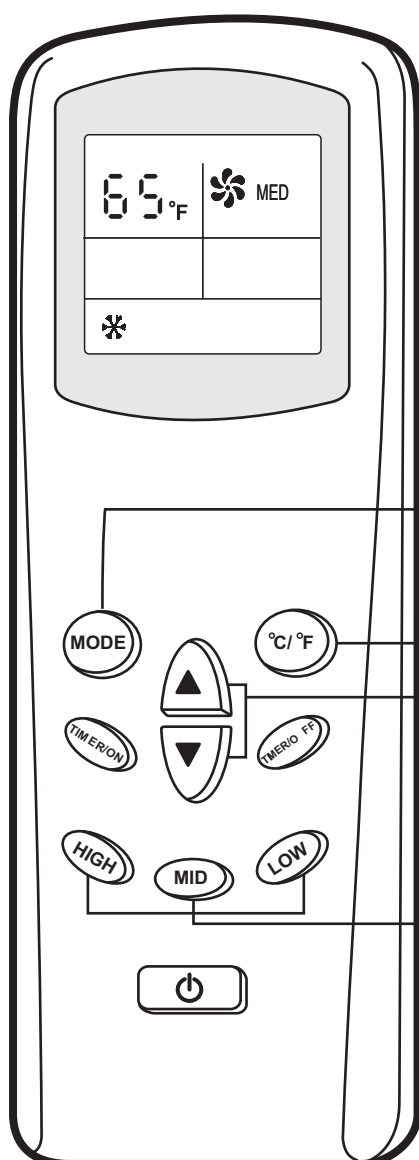
OPERATION

Remote Control Operation

Cooling mode



Display



Use cooling function only when the sea water temperature is between 60F to 95F. Do not operate the unit under cooling mode when the sea water temperature is out of this range.

1 Press the **MODE** button to select the cooling mode.

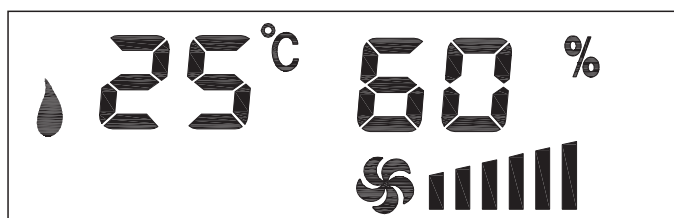
2 Press the **UNIT CHANGE** button to set the temperature unit

3 Press the **UP/DOWN** button to set the temperature.

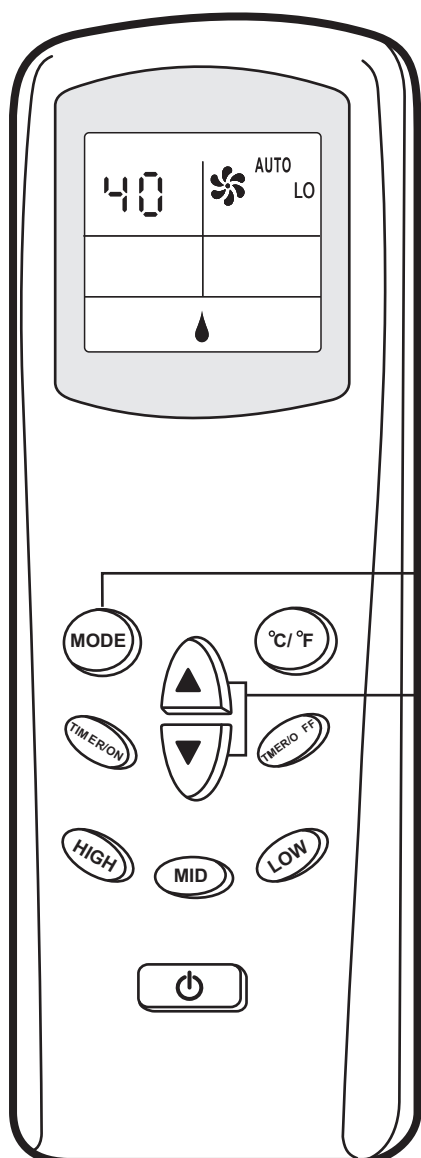
4 Press the **HIGH/MID/LOW** button to set the fan speed.

※ Auto fan function can only be set on LCD wall panel. Once the auto fan is set, the fan will stop after a while when the compressor stops.

Dehumidifying mode



Display



Please note that there is a humidity sensor installed in the system. Therefore desired humidity level can be set between 40% and 85%. Once the setting level is achieved the unit will stop. Fan will run every 10 minutes for 3 minutes to detect the current humidity level. Use dehumidifying mode only when the sea water temperature is between 60 °F and 95 °F. Do not operate the unit under this mode when the sea water temperature is out of this range.

1

Press the **MODE** button to select the dehumidifier; The fan speed will be automatically locked for low-speed position.

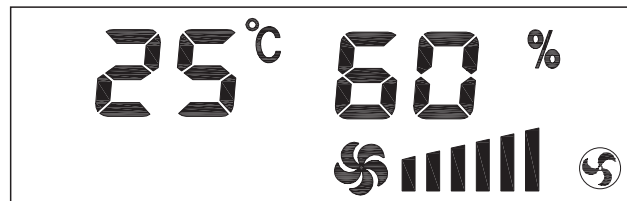
2

Press the **UP/DOWN** button to set the humidity level.

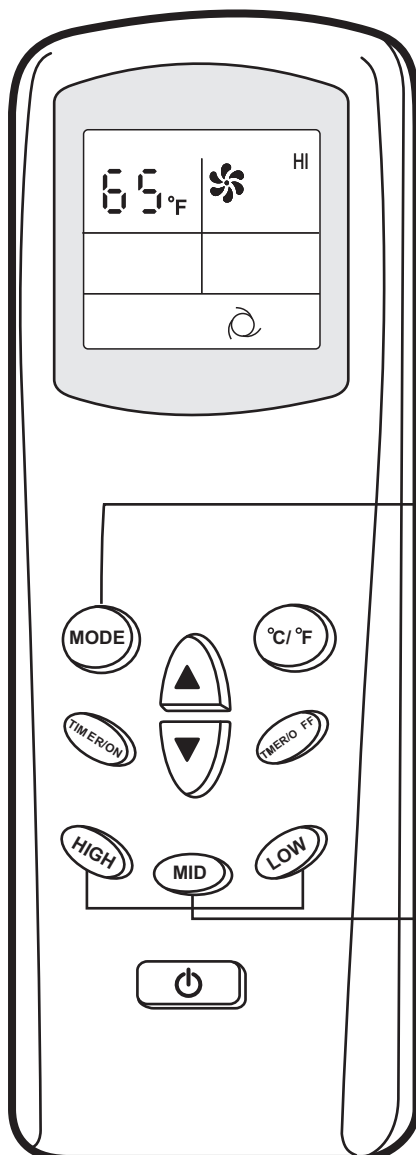
※ This mode is recommended
When the users are on the boat

OPERATION

Fan mode



Display



This mode is used to circulate the air in the cabin there won't be any cooling or heating effect.

1

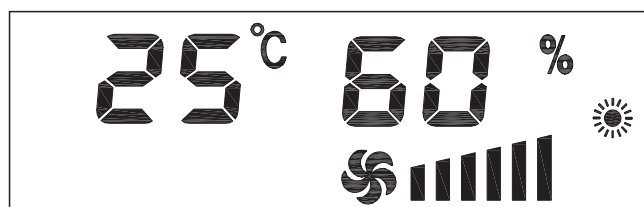
Press the **MODE** button to select the fan mode.

2

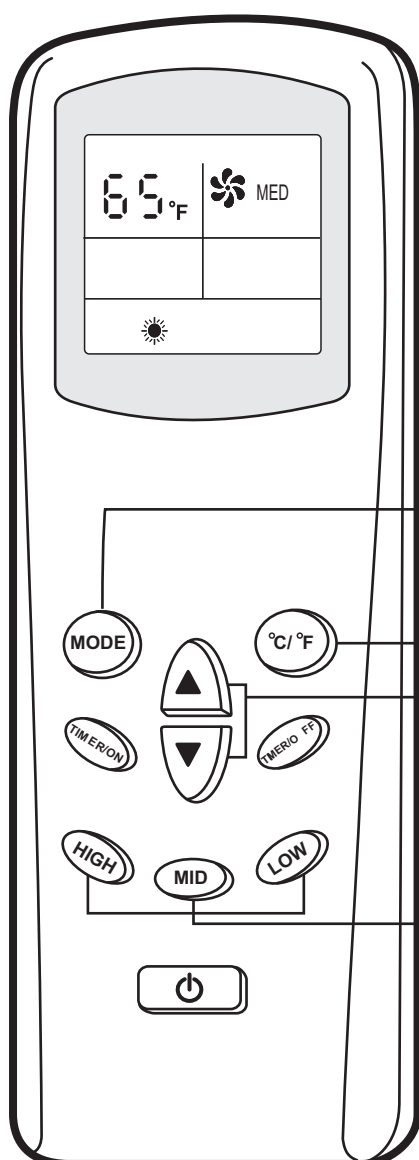
Press the **HIGH/MID/LOW** button to preset the fan speed.

OPERATION

Heating mode



Display



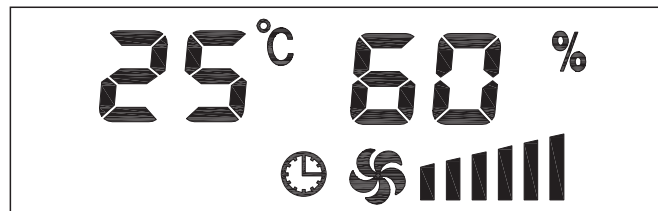
Heating function is provided by reverse cycle of the Refrigerant circuit (Heat Pump). There is no electric heating element installed in this system. Use heating function only when the sea water temperature is between 40F to 77F. Do not operate the unit under heating mode when the sea water temperature is out of this range

- 1 Press the **MODE** button to select the heating mode.
- 2 Press the **UNIT CHANGE** button to set the temperature unit
- 3 Press the **UP/DOWN** button to set the temperature.
- 4 Press the **HIGH/MID/LOW** button to set the fan speed.

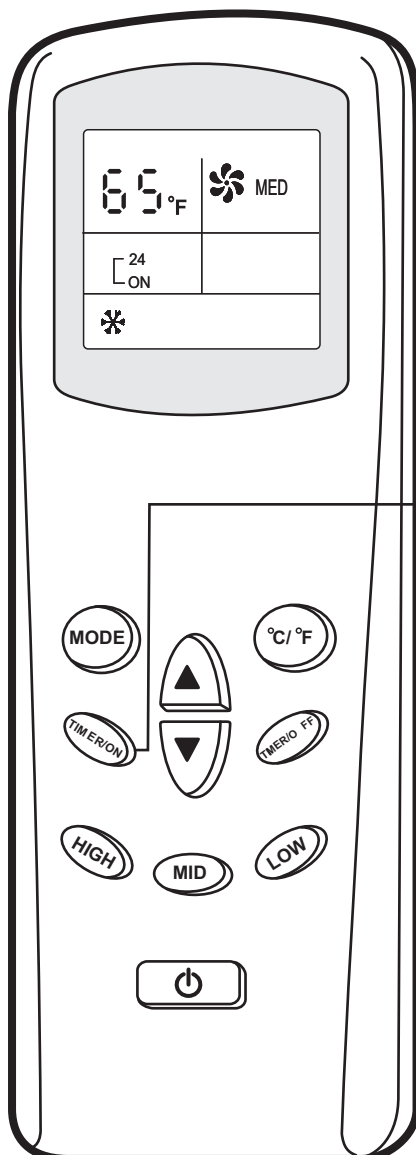
※ Auto fan function can only be set on LCD wall panel. Once the auto fan is set, the fan will stop after a while when the compressor stops.

OPERATION

Timer on



Display



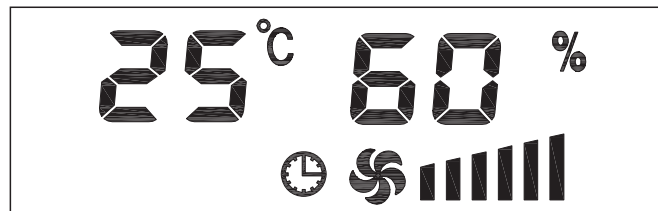
Use Timer On function to start the unit at any time within the next 24 hour.

1

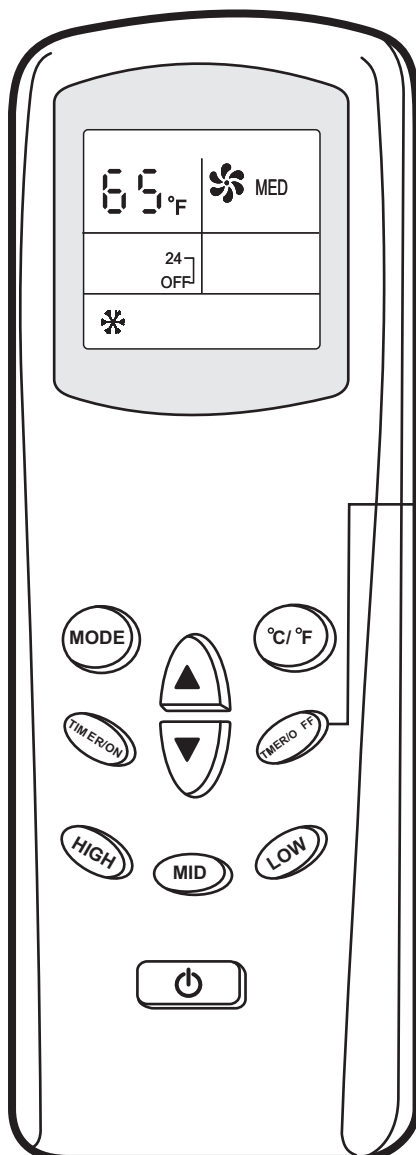
Press the **TIMER ON** button to activate timer on function when the unit is switched off. And Press one time to add one hour.

OPERATION

Timer off



Display



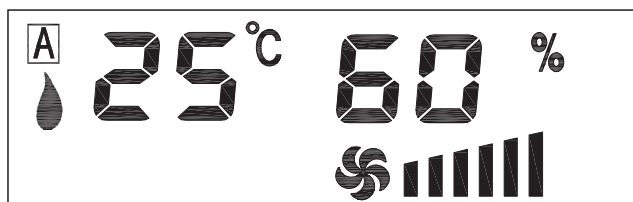
Use Timer Off function to turn off the unit at any time within the next 24 hour.

1

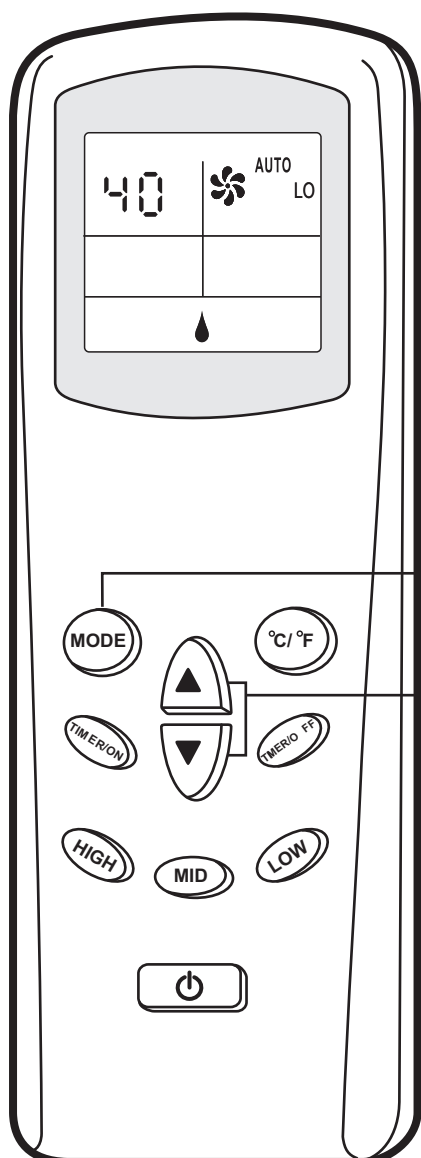
Press the **TIMER OFF** button to activate timer off function when the unit is switched on. And Press one time to add one hour.

OPERATION

Auto Dehumidifying mode



Display



Please note that there is a humidity sensor installed in the system. Therefore desired humidity level can be set between 40% and 85%. Once the setting level is achieved the unit will stop. Fan will run every 60 minutes for 3 minutes to detect the current humidity level. Use humidifying mode only when the sea water temperature is between 60 0F and 95 0F. Do not operate the unit under this mode when the sea water temperature is out of this range.

1

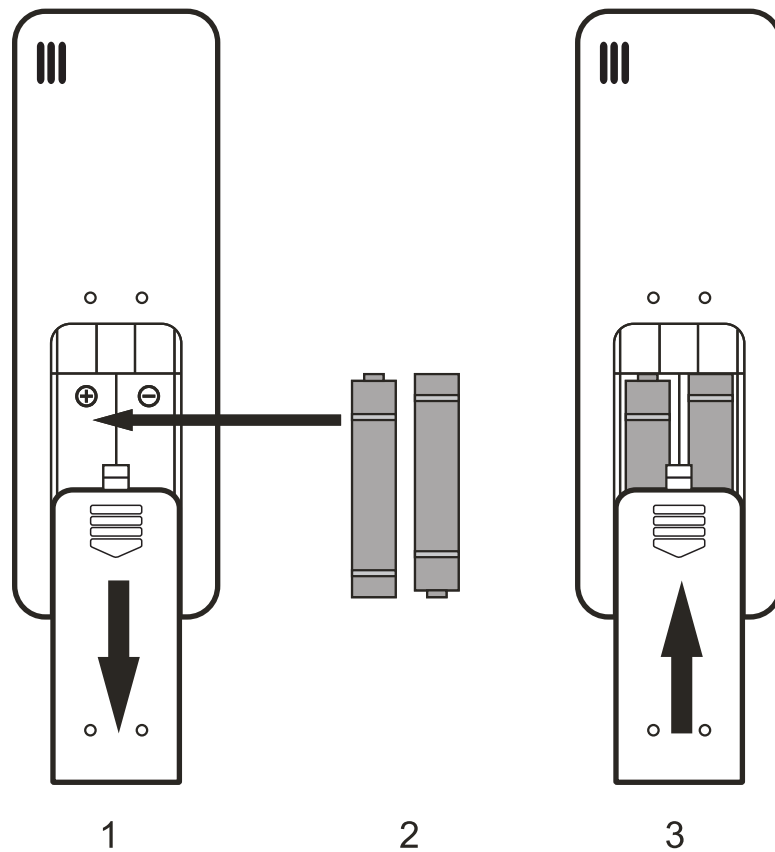
Press the **MODE** button to select the dehumidifier; The fan speed will be automatically locked for low-speed position.

2

Press the **UP/DOWN** button to set the humidity level.

※ This mode is recommended
When the users are not on the boat.
(Left the boat for one or more days)

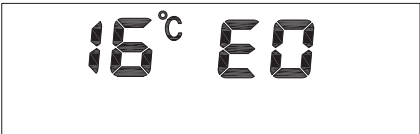
Install and Change the Battery



- 1) Open the cover of remote control, hold the hook and lightly pull up.
- 2) Insert the batteries, and check if the batteries are placed in the correct position.
- 3) Reinstall the cover.

MALFUNCTIONS INSTRUCTION

1 Humidity sensor error



The image shows a rectangular LCD display with a black background. On the left, the temperature '16°C' is displayed in white. On the right, the error code 'E0' is displayed in white.

When the humidity sensor is short-circuited or open-circuited, the control panel LCD will display E0. In this case, please call for service.

2 Freeze Protection



The image shows a rectangular LCD display with a black background. On the left, the temperature '16°C' is displayed in white. On the right, the error code 'E1' is displayed in white.

Display will show "E1", When coil tube temperature sensor < 30 °F and continuously maintains it for more than one minute. After few minutes, it should reset automatically if the coil temperature gets 46 °F or above. In case the display continuously shows "E1", Stop operation, turn off the power and call a technician for diagnosing the problem.

3 Indoor temperature sensor Error



The image shows a rectangular LCD display with a black background. On the left, the temperature '16°C' is displayed in white. On the right, the error code 'E2' is displayed in white.

Display will show "E2", when Indoor temperature sensor loose or broken, a qualified technician should be called

4 Coil temperature sensor Error



The image shows a rectangular LCD display with a black background. On the left, the temperature '16°C' is displayed in white. On the right, the error code 'E3' is displayed in white.

Display will show "E3", when coil temperature sensor loose or broken, a qualified electrician should be called

5 High Pressure protection

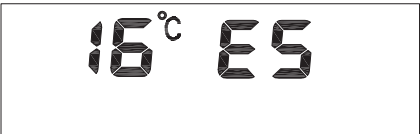


The image shows a rectangular LCD display with a black background. On the left, the temperature '16°C' is displayed in white. On the right, the error code 'E4' is displayed in white.

The control panel will display E4 error code when the high pressure switch cuts out. The high pressure switch may cut out temporarily and it may reset again. If there are multiple cut outs, the unit should be turned off and water flow should be inspected. There may be blockage on air flow during heating operation or the water temperature may be too high.

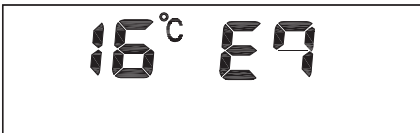
MALFUNCTIONS INSTRUCTION

6 Low Pressure protection

A digital display showing a temperature of 16°C and an error code of E5.

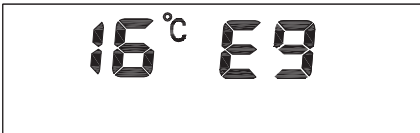
The control panel will display E5 error code when the low pressure switch cuts out. The low pressure switch may cut out temporarily and it may reset again. If there are multiple cut outs, the system may not resume normal operation. A qualified technician should be called.

7 Water Level Protection

A digital display showing a temperature of 16°C and an error code of E7.

The controller board is equipped with a function that an optional flow switch may be connected. In case a switch is used and water flow level is low the system will display E7 error code. Check the pump's operation.

8 Overheating protection

A digital display showing a temperature of 16°C and an error code of E9.

Display will show "E9", when coil tube temperature sensor $> 145^{\circ}\text{F}$ at heating mode. A qualified technician should be called to determine the reason of overheating.

9 Communication Error

A digital display showing a temperature of 16°C and an error code of EA.

Display showing "EA" means that the phone lines are not connected well with the control panel. We recommend to check and replace the cable.

MAINTENANCE

Reversing Valves

Heat Pump units bear a reversing valve; the valve must be energized periodically to keep the internal parts moving freely. To do this, switch the a/c unit into heat for a few seconds once a month.

Seawater Strainer

Clean the strainer periodically to a for a steady stream of water. Check seawater intake scoop for obstructions.

Hoses & fittings

Make sure there is no leak at the connection points and also make sure that hoses are not looped, kinked or crushed.

Flushing the Condenser Coil

1. Turn off at the circuit breaker. Disconnect the inlet and outlet connections of the condenser coil.
2. Use chemical resistant pump and hoses to connect the inlet and outlet of the condenser coil
3. Use 20-25 gallon container to circulate the solution.
4. Flush the coil about 30 minutes with a 5% solution of muriatic or hydrochloric acid and fresh water or use a premixed over-the-counter solution.
5. Circulate fresh water through the coil to flush any residual acid from the system.



WARNING: Dispose acid solutions in accordance with federal, state and/or local regulations.

Return Air Filters

Check and clean the return air filter as necessary.

Winterization

To avoid any freezing during winter winterization is necessary. Do not leave sea water, fresh water or air in the system . Fill antifreeze solution though the intake, strainer, pump and coil and water outlet (entire system)



Warning: Collect all discharged liquids and recycle or dispose of in a proper manner.

MANUFACTURERS LIMITED WARRANTY AGREEMENT

It is expressly understood that unless a statement is specifically identified as a warranty, statements made by Marinaire, Inc. a Florida Limited Liability Company, ("MARINAIRE") or its representatives, relating to MARINAIRE's products, whether oral, written or contained in any sales literature, catalog or agreement, are not express warranties and do not form a part of the basis of the bargain, but are merely MARINAIRE's opinion or commendation of MARINAIRE's products.

EXCEPT AS SPECIFICALLY SET FORTH HEREIN, THERE IS NO EXPRESS WARRANTY AS TO ANY OF MARINAIRE'S PRODUCTS. MARINAIRE MAKES NO WARRANTY AGAINST LATENT DEFECTS. MARINAIRE MAKES NO WARRANTY OF MERCHANTABILITY OF THE GOODS OR OF THE FITNESS OF THE GOODS FOR ANY PARTICULAR PURPOSE.

GRANT OF LIMITED WARRANTY

MARINAIRE warrants its products, purchased and retained in the United States of America and Canada, to be free from defects in material and workmanship under normal use and maintenance as follows: Air conditioning, heating and/or heat pump units built by MARINAIRE ("MARINAIRE labelled Units") for One (1) year from the date of sale (as defined below); (2) Thermostats and control systems made by MARINAIRE, when installed with MARINAIRE Units, for one (1) year from the Date of sale (as defined below); (3) Sealed refrigerant circuit components of MARINAIRE Units (which components only include the compressor, refrigerant to air/water heat exchangers, reversing valve body and refrigerant metering device) for one (1) years from the date of sale (as defined below); Date of Sale is the date of invoice created.

To make a claim under this warranty, Warranty Claim Form must be filed to MARINAIRE, and parts must be returned to MARINAIRE in Miami, FL, freight prepaid, no later than thirty (30) days after the date of the failure of the part; if MARINAIRE determines the part to be defective and within MARINAIRE's Limited Warranty, MARINAIRE shall, when such part has been either replaced or repaired, return such to a factory recognized distributor, dealer or service organization, F.O.B. MARINAIRE, Miami, FL., freight collect. The warranty on any part repaired or replaced under warranty expires at the end of the original warranty period.

This warranty does not cover and does not apply to: (1) Air filters, grilles, fittings, hoses, air ducts, circulation pumps, refrigerant, fluids, oil; (2) Products relocated after initial installation; (3) Any portion or component of any system that is not supplied by MARINAIRE, regardless of the cause of the failure of such portion or component; (4) Products on which the unit identification tags or labels have been removed or defaced; (5) Products on which payment to MARINAIRE, or to the owner's seller, is in default; (6) Products subjected to improper or inadequate installation, maintenance, repair, wiring or voltage conditions; (7) Products subjected to accident, misuse, negligence, abuse, fire, flood, lightning, unauthorized alteration, misapplication, contaminated or corrosive air or liquid supply, operation at out of range air or water temperatures or flow rates, or opening of the refrigerant circuit by unqualified personnel; (8) Mold, fungus, sand, mud, seaweed or bacteria damages; (9) Corrosion or abrasion of the product; (10) Products, parts and components supplied by others; (11) Products which have been operated in a manner contrary to MARINAIRE's printed instructions; (12) Products which have insufficient performance as a result of improper duct or plumbing system design or improper application, installation, or use of MARINAIRE's products; or (13) Electricity or fuel costs, or any increases or unrealized savings in same, for any reason whatsoever.

MARINAIRE is not responsible for: (1) The costs of any system components supplied by others, oil, refrigerant or, associated labor to repair or replace the same, which is incurred as a result of a defective part covered by MARINAIRE's Limited Warranty; (2) The costs of labor, refrigerant, materials or service incurred in diagnosis and removal of the defective part, or in obtaining and replacing the new or repaired part; (3) Transportation costs (4) The costs of normal maintenance.

MANUFACTURERS LIMITED WARRANTY AGREEMENT

LIMITATION OF REMEDIES

In the event of a breach of the Limited Warranty, MARINAIRE will only be obligated at MARINAIRE's option to repair the failed part or unit, or to furnish a new or rebuilt part or unit in exchange for the part or unit which has failed. If after written notice to MARINAIRE in Miami, FL. of each defect, malfunction or other failure, and a reasonable number of attempts by MARINAIRE to correct the defect, malfunction or other failure, and the remedy fails of its essential purpose, MARINAIRE shall refund the purchase price paid to MARINAIRE in exchange for the return of the sold good(s). Said refund shall be the maximum liability of MARINAIRE.

THIS REMEDY IS THE SOLE ANDEXCLUSIVE REMEDY OF THE BUYER OR PURCHASER AGAINST MARINAIRE FOR BREACH OF CONTRACT, FOR THE BREACH OF ANY WARRANTY OR FOR MARINAIRE'S NEGLIGENCE OR IN STRICT LIABILITY.

LIMITATION OF LIABILITY

MARINAIRE shall have no liability for any damages if MARINAIRE's performance is delayed for any reason or is prevented to any extent by any event such as, but not limited to: any war, civil unrest, government restrictions or restraints, strikes, or work stoppages, fire, flood, accident, shortages of transportation, fuel, material, or labor, acts of God or any other reason beyond the sole control of MARINAIRE.

MARINAIRE EXPRESSLY DISCLAIMS AND EXCLUDES ANY LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGE IN CONTRACT, FOR BREACH OF ANY IMPLIED WARRANTY, OR IN TORT, WHETHER FOR MARINAIRE's NEGLIGENCE OR AS STRICT LIABILITY.

OBTAINING WARRANTY PERFORMANCE

Normally, the dealer or service organization who installed the products will provide warranty performance for the owner. Should the installer be unavailable, contact any MARINAIRE recognized distributor, dealer or service organization. If assistance is required in obtaining warranty performance, write or call:

Marinaire LLC.
P.O.Box 772284 Miami, FL. 33177-2284
Toll Free: 1-800-724-8071
Fax: (305) 253-6532
Service@marinaire.com

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