OCEANAIRE

AQUACOOLER
Deluxe Portable Water-Cooled Spot Cooler

ENGINEERING, INSTALLATION AND SERVICE MANUAL

OWC-Series

R-410A Models

c UL us

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FORWARD

This manual provides the user with basic details for the installation and operation of the Oceanaire Air Boss spot cooler. It is recommended to read and fully understand the instructions outlined within this manual, before operating the AQUACOOLER unit.

As with all commercial air conditioning equipment, it is recommended to have the AQUACOOLER sized and installed by a licensed specifying engineer and contractor, in accordance with all local and state codes. The length of service received can be extended by following the installation and preventive maintenance instructions.

NOTICE

In our ongoing process of continuous improvement, the items and procedures described in this manual are subject to change without notice. Please note model and serial number of the AQUACOOLER unit when contacting the factory.

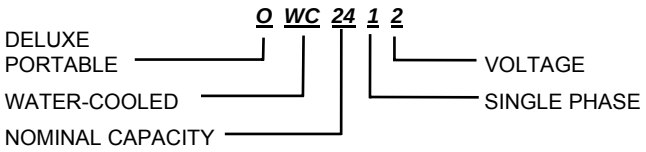
GENERAL DESCRIPTION

The Oceanaire AQUACOOLER is a portable water-cooled air conditioner designed for permanent or temporary spot cooling applications. The entire air conditioning unit has been built in an attractive sheet metal cabinet, equipped with heavy-duty casters for mobility. All AQUACOOLER models come with a 10-foot power cord for electrical connection and added mobility in service. These spot-coolers are designed to direct air to specific areas or objects through a discharge grill located on the upper-front of the unit, while rejecting heat from the top of the unit. The AQUACOOLER models range in cooling capacities from 12,000 BTU/HR to 60,050 BTU/HR to satisfy most space cooling requirements.

The AQUACOOLER is a self-contained unit with the entire cooling system, fan motors and water-side components neatly arranged in a gray polyester powder coated metal cabinet. When connected to the proper source of electrical power, the digital thermostat controls the AQUACOOLER unit to provide the desired level of comfort and cooling.

A wide variety of accessories and factory installed options are available for the AQUACOOLER units allowing for improved performance and versatility.

NOMENCLATURE



CAPACITY RATING

12.....12,000 BTU/HR
18.....18,000 BTU/HR
24.....24,00 BTU/HR
36.....36,000 BTU/HR
60……..60,000 BTU/HR

SUFFIXES

5—50 Hz Model
H—Heresite® Coated Coil
QC—Quick Connect Fittings
S—Special Model

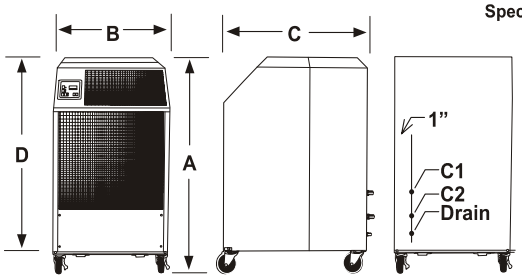
WARRANTY CARD

It is important that the warranty card be filled out completely and returned to the factory within fourteen (14) days of installation of the unit in order to receive the benefits of the warranty.

AquaCooler

Deluxe Water-Cooled Portable Air Conditioners — SPECIFICATIONS

MODEL: OWC	1211	1811	2412	3612	3632	3634	6012	6032	6034
Nominal Cooling Capacity [1]	12,000	18,000	23,950	36,100	36,100	36,100	60,100	60,100	60,100
Voltage (Volts/Phase) at 60Hz	115/1		208-230/1		208-230/3	460/3	208-230/1	208-230/3	460/3
Unit Amps [5]	8.1	11.3	9.9	12.0	9.3	4.7	23.7	16.5	6.3
Unit Watts [5]	930	1300	2100	2700	2700	2700	5000	5000	5000
In Rush Current (Amps) [6]	70	90	86.5	99.5	88	88	160	140	140
Plug Type	5-15P	5-15P	6-20P	6-20P	L15-20P	L16-20P	6-30P	L15-30P	L16-20P
EER	12.9	13.8	11.4	13.4	13.4	13.4	12.0	12.0	12.0
Compressor HP	1	1 1/2	2	3	3	3	5	5	5
Compressor RLA	9.5	12.3	10.5	13.6	8.8	5.0	27.6	181	9.0
Compressor LRA	50	63	48	83	77	35	158	137	62
Evap CFM [2]	400	600	810	1200	1200	1200	1950	1950	1950
Evap Motor HP	1/8	1/8	1/3	1/3	1/3	1/3	1	1	1
Evap Motor Watts	180	280	330	375	375	375	550	550	550
Dimension E (in.)	18	21 1/2		29 1/2			32 3/4		
Dimension F (in.)	5 1/2	6		6			6		
Dimension G (in.)	3 1/2	4 1/2		4 1/2			4 1/2		
Cond Water Flow (GPM) at 60°F inlet	0.75	1.1	1.55	2.2	2.2	2.2	5.5	5.5	5.5
at 85°F inlet	3	4.5	6	9	9	9	15	15	15
Cond Coil Pressure Drop-PSI	0.4	0.4	0.2	0.4	0.4	0.4	0.4	0.4	0.4
Water Valve Pressure Drop PSI	2.0								
Water Valve Connection [4]	3/8 MF			5/8 MF					
Drain (Return) Connection	3/8 MF			5/8 MF					
Condensate Pump (ALL UNITS)	20 Ft Lift - 3/8 MF Connection On Unit - DRAIN								
Sound Level [3]	52	57	60	62	62	62	69	69	69
R-410A Charge Oz.	14	18	16	24	24	24	52	52	52
(A) Height with Casters (in.)	31 1/2	37 1/2		50-1/4			52 1/2		
(D) Height Without Casters (in.)	28 1/2	34 1/2		45			46 1/4		
(B) Width (in.)	20 1/8	24 1/4		27			28 1/4		
(C) Depth (in.)	13 1/8	13		18			39		
Net Weight (lb.)	110	150	160	240		270	460		520
Shipping Weight (lb.)	130	170	180	270		300	500		560
Shipping Volume (cu.ft.)	9	12		23			46		



WATER CONNECTIONS
For Model 12, C1 = WATER OUT, C2 = WATER IN
For Models 18, 24, 36 & 60, C1 = WATER IN, C2 = WATER OUT

Specifications subject to change without notice

1. Nominal capacity is total BTUH at 80ºDB/67ºWB return air, high fan speed, with 85ºEWT to 95ºLWT (Water Flow Rate of 3 GPM per Ton)
2. CFM with free discharge
3. Sound Pressure, dB at 5 feet, commercial operation
4. 3/8" water valve on models 12, 18, 24 (with 3/8" flare fitting), 3/4" water valve on models 36, 60 (with 5/8" flare fitting)
5. Amps and Watts at 208 Volts
6. Time delay fuses/circuit breakers are recommended

Ambient operating range 65º to 105º
May operate to 55º if equipped with optional hot gas bypass (factory installed)

50 Hz MODELS AVAILABLE - CONSULT FACTORY

STANDARD FEATURES

CABINET

The OWC-Series cabinet is constructed of 18 gauge steel with a gray polyester powder coated finish that will compliment any decor. The entire cabinet is insulated with a sound-absorbing insulation for cool, quiet comfort. All units come equipped with swivel casters for portability and convenient set-up.

ELECTRONIC THERMOSTAT

All AQUACOOLER units are equipped with a non-programmable electronic thermostat. When power is connected to the unit, the thermostat will control the unit to cool a space to the desired temperature. The thermostat is also capable of controlling the fan to operate automatically (when needed) or continuously. To protect the compressor from short-cycling, there is a built-in time delay in the thermostat. In the event of a power outage, all thermostat settings are saved, and the unit will re-start automatically.

FAN SPEED CONTROL

The electronic thermostat is capable of setting fan speeds automatically or manually. In AUTO mode, the fan speed adjusts in according to cooling conditions. In MANUAL mode, the fan speed can be maintained at a one of six speed levels, from low to high.

CONDITION ALARM—CON

The LED thermostat of the AQUACOOLER will display the word “CON” , indicating a fault condition in the controller. CON indicates that there is a condensate condition that needs to be addressed or the high pressure switch has been tripped. For models less than 5-tons, the CON indicates that the condensate tank is full and needs to be emptied. In the 5-ton AQUACOOLER units (model OWC60) CON indicates a condensate pump over-flow condition where the pump is either disabled, or incapable of rejecting the condensate water, and must be serviced. For the high pressure switch, see below.

CONDENSATE PUMP

All AQUACOOLER units come equipped with an Automatic Condensate Pump that disposes of the condensate. The pump discharges through a 3/8 male flare DRAIN connection located on the back of the unit. The automatic pump is capable of a 20ft lift, to handle almost about any installation requirement.

HIGH PRESSURE SAFETY SWITCH—CON

Located on the back of the AQUACOOLER unit is a manual re-set high pressure switch, used for the protection of the compressor in the event that the condenser water supply is turned off. If the condensing pressure exceeds the limit setting, the cut-out shuts down the compressor, while the evaporator fan remains running, and “CON” will display on the controller. Once the water interruption has been corrected, turn the unit off, reset the switch by depressing the red RESET button on the back of the unit, and restart the unit.

FILTERS

All AQUACOOLER units are equipped with washable a filter at the air intake. Electrostatic mesh air filters located behind the evaporator return air grill serve to filter the air before it is cooled, keeping the coil free from dust build-up. The filters can be easily removed and cleaned.

POWER CORDS

All AQUACOOLER units come with power cords, convenient connection and portability. All units except the 5-ton models, and 3-phase models are equipped with LCDI for added safety devices.

APPLICATIONS

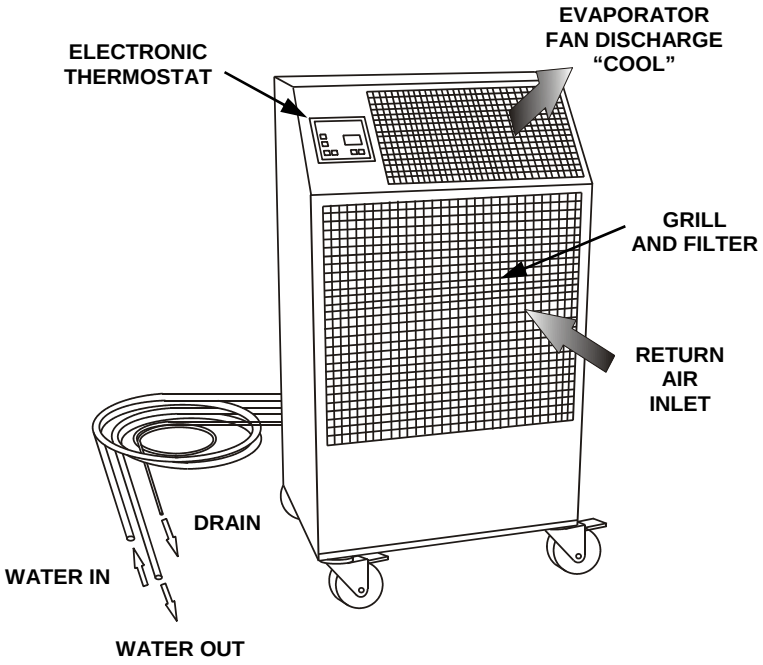
SPOT COOLER

The AQUACOOLER can be used in an open environment to cool specific objects or "spots". Spot Cooling is a convenient and economical way to provide air conditioning where cooling the entire space is impractical. Cool air is discharged from the unit and is directed where it is needed. Nozzle kits can be used to improve direction of the cooling airflow.

ROOM AIR CONDITIONER

One feature of the AQUACOOLER is it operates as a room air conditioner because water is used as the means for heat rejection. The major convenience of water-cooled air conditioning is the convenience of connecting water hoses or lines as compared to the installation of condenser air ducts used for air-cooled portables. A variety of hose kits are available that can be used for connecting to a water supply and drain while providing portability within the conditioned space.

AQUACOOLER—OPERATION / DESCRIPTION



AQUACOOLER—FRONT VIEW

SERVICE CORD

All AQUACOOLER Series units are equipped with the standard ten foot long service cord with plug configurations and receptacle requirements as shown in this chart. OWC1211, OWC1811, OWC2412 and OWC3612 units come with **LCDI** (Leakage Current Detection & Interruption) devices that serve as a means of electrical protection.

CAUTION—DO NOT USE THE LCDI AS AN ON/OFF SWITCH FOR THE UNIT

All 3-phase models are equipped with locking plugs for added connection reliability. Refer to the chart below for plug and receptacle details for all AQUACOOLER models.

A DAMAGED LCDI POWER SUPPLY CORD MUST BE REPLACED WITH A NEW POWER SUPPLY CORD OBTAINED FROM OCEANAIRE, AND NOT REPAIRED

UNIT/MODEL	PLUG CONFIGURATION	RECEPTACLE
115 VOLT **OWC1211** **OWC1811**	 **15A-125 VOLT** **NEMA 5-15P**	**NEMA-5-15R**
208-230 VOLT SINGLE PHASE **OWC2412** **OWC3612**	 **20A-250 VOLT** **NEMA 6-20P**	**NEMA 6-20R**
208-230 VOLT SINGLE PHASE **OWC6012**	 **30A-250 VOLT** **NEMA 6-30P**	**NEMA 6-50R**
208-230 VOLT 3-PHASE **OWC3632**	 **20A-250 VOLT** **NEMA L15-20P**	**NEMA L15-20R**
208-230 VOLT 3-PHASE **OWC6032**	 **30A-250 VOLT** **NEMA L15-30P**	**NEMA L15-30R**
460 VOLT 3-PHASE **OWC3634** **OWC6034**	 **20A-460 VOLT** **NEMA L16-20P**	**NEMA L16-20R**

USE OF EXTENSION CORDS

CAUTION:

FOR MODEL OWC1211 AND OWC1811 *AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 15 AMPS @ 115 VOLTS WITH GROUNDING-TYPE ATTACHMENT PLUG AND GROUNDING TYPE CONNECTOR (LOAD FITTING)*

FOR MODELS OWC2412 and OWC3612 *AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 20 AMPS @ 250 VOLTS WITH GROUNDING-TYPE ATTACHMENT PLUG AND GROUNDING TYPE CONNECTOR (LOAD FITTING)*

FOR MODEL OWC6012 *AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 30 AMPS @ 250 VOLTS WITH GROUNDING-TYPE ATTACHMENT PLUG AND GROUNDING TYPE CONNECTOR (LOAD FITTING)*

FOR MODEL OWC3632 *AN EXTENSION CORD MAY BEUSED PROVIDED IT IS RATED AT LEAST 20 AMPS @ 250 VOLTS, 3 PHASE*

FOR MODELS OWC6032 *AN EXTENSION CORD MAY BEUSED PROVIDED IT IS RATED AT LEAST 30 AMPS @ 250 VOLTS, 3 PHASE*

FOR MODELS OWC3634 AND OWC6034 *AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 20 AMPS @ 600 VOLTS, 3 PHASE*

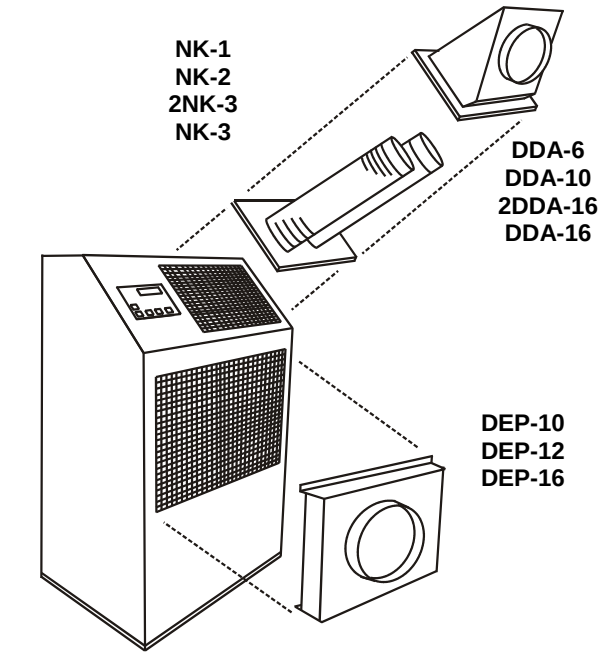
SPECIAL NOTICE—THREE PHASE OPERATION

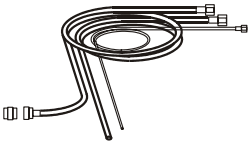
Models OWC3632, OWC3634, OWC6032 and OWC6034

All three-phase AQUACOOLER models are equipped with a three-phase monitor for added compressor protection. The phase monitor, located in the control box, has multi-color LED that reports status. The monitor protects the compressor from reverse operation, phase loss and low voltage situations. Further description of the three-phase monitor is located in the electrical section of the manual.

NOTICE - DO NOT OPERATE ANY THREE-PHASE UNIT BY BY-PASSING THE MONITOR, THIS WILL VOID THE WARRANTY

ACCESSORIES





HK-1
HK-2
HK-3
HK-4
HK-5
HK-6

AQUACOOLER UNIT

OWC – AQUACOOLER ACCESSORIES

NOZZLE KIT

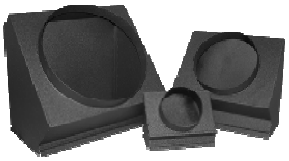
NK-1	(2 X 4-Inch)	OWC12
NK-2	(2 X 6-Inch)	OWC18, 24
2NK-3	(2 x 8-iNCH)	OWC36
NK-3	(2 X 8-Inch)	OWC60

EVAPORATOR RETURN AIR PLENUM

DEP-10	(10-Inch Round)	OWC12
DEP-12	(12-Inch Round)	OWC18, 24, 36
DEP-16	(16-Inch Round)	OWC60

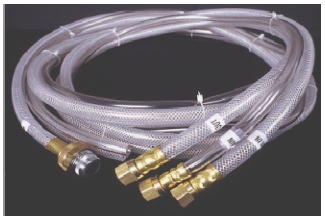
DISCHARGE DUCT ADAPTER

DDA-6	(6-Inch Round)	OWC12
DDA-10	(10-Inch Round)	OWC18, 24,
2DDA-16	(16-inch Round)	OWC36
DDA-16	(16-Inch Round)	OWC60



HOSE KIT

HK-1	10FT	OWC 12, 18, 24
HK-2	25FT	OWC 12, 18, 24
HK-5	40FT	OWC 12, 18, 24
HK-3	10FT	OWC 36, 60
HK-4	25FT	OWC 36, 60
HK-6	40FT	OWC 36, 60



ACCESSORIES

DISCHARGE AIR NOZZLE KIT ASSEMBLY (NK, 2NK)

The optional discharge nozzle kits are used to direct the conditioned air to a specific target area. By concentrating the airflow, the nozzles increase the air velocity towards production lines to cool personnel or equipment. In server rooms, the nozzles can be used to induce airflow through the rack to remove the hot air from the area of the equipment.

NK-1 for model OWC12, with (2) 4-inch diameter nozzles with an approximate compressed length of 15 inches. The approximate extended length is 21 inches.

NK-2 for models OWC18 and OWC24 with (2) 6-inch diameter nozzles with an approximate compressed length of 22 inches. The approximate extended length is 32 nches.

2NK-3 for model OWC36 , with (2) 8-inch diameter nozzles with an approximate compressed length of 20 inches. The extended length is approximately 29 inches.

NK-3 for OWC60, with (2) 8-inch diameter nozzles with an approximate compressed length of 20 inches. The extended length is approximately 29 inches.

The nozzle kits come pre-assembles with the nozzles secured to a mounting plate, and with edge guards. By removing the AQUACOOLER discharge grill, one can insert the nozzle kit into the opening without the use of tools.

Nozzle Kits

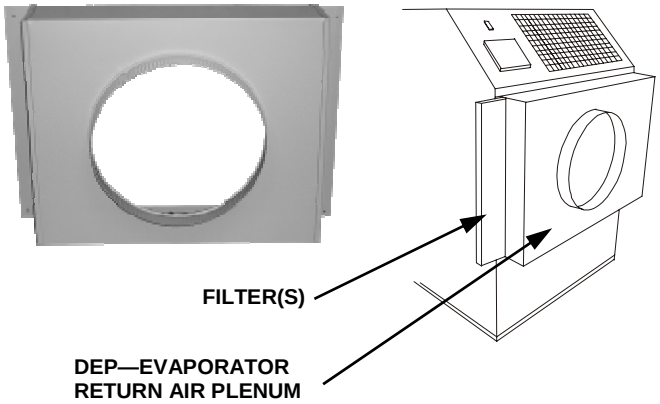
ACCESSORIES

EVAPORATOR RETURN AIR PLENUM, DEP

Evaporator return air plenums are available for installations where it is required to duct air to the inlet of the evaporator. The evaporator return air plenums allow the user to connect round duct (flexible or rigid) to the return air intake to reduce air noise and increase the number of options for solving difficult cooling problems. The plenum attaches to the front of the unit, replacing the return air grill. Refer to the table below for configuration and application information

DEP-10 for OWC12 transitions the return air opening to a 10-inch round duct.
DEP-12 for OWC18 and OWC24 transitions the return opening to a 12-inch round duct.
DEP-16 for OWC36 and OWC60 transitions the return opening to a 16- inch round duct.

NOTE—When a DEP is installed, it is recommended to set the evaporator blower speed to high, to avoid evaporator freeze-up.



Plenum Kit Duct/Flange	OWC12	OWC18	OWC24	OWC36	OWC60	FILTERS
DEP-10 10 inch	✓					(1) 10”X20”X1”
DEP-12 12 inch		✓	✓			(1) 15”X25”X1”
DEP-16 16 inch				✓	✓	(1) 12”X30”X1” (1)15”X30”X1”
Maximum Equivalent Feet	25	50	50	50	100	
Est. External Static Pressure	(.20)	(.25)	(.25)	(.25)	(.50)	

ACCESSORIES

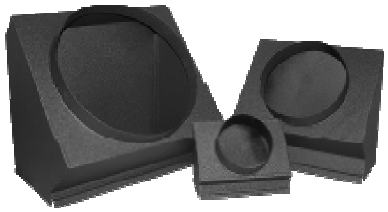
Discharge Duct Adapter, DDA

Discharge duct adapters are available for applications where ducted evaporator discharge is required. The adapters can be easily installed on the unit without fasteners, and be installed for either vertical or horizontal ducting. The standard discharge grille is removed and the DDA is attached in the grill opening.

DDA-6 for OWC12, converts the evaporator discharge to a 6-inch diameter round duct.
DDA-10 for OWC18 and OWC24, converts the evaporator discharge to a 10-inch diameter round duct.
2DDA-16 for OWC36, converts the evaporator discharge to a 16-inch round duct.
DDA-16 FOR OWC60, converts the evaporator discharge to a 16-inch round duct.

When used in conjunction with the evaporator return air plenum, DEP, the unit can provide closed-loop cooling to and from a given space without the influence of any outside air.

***NOTE—When a DDA is installed, it is recommended to set the evaporator blower speed to high, to avoid evaporator freeze-up*.**



Adapter Model	Round Duct Size	OWC12	OWC18	OWC24	OWC36	OWC60
DDA-6	6-inch	✓				
DDA-10	10-inch		✓	✓		
2DDA-16	16-inch				✓	
DDA-16	16-inch					✓
Maximum Approx Equivalent Feet		25	50	50	50	100
Maximum E.S.P		.15	.25	.25	.25	.50

ACCESSORIES

Hose Kit, HK

Hose kits are available in lengths of 10, 25, and 40 feet. Each hose kit allows for convenient installation of the AQUACOOLER, while allowing for portability within the allowable space.

NOTICE—When using these hoses in applications with water pressures exceeding 50 PSIG, a water pressure reducing valve must be installed in the water supply line prior to the hose kit; otherwise warranty on the hose kits will be void.

All hose kits have FEMALE flare connectors to match the MALE flare fittings on the units (see chart below). The WATER IN connector consists of a 3/4" hose barb. WATER OUT and DRAIN (condensate) have no fitting, and can be fed to a sink or permanent drain. When using a hose kit, avoid sharp corners, hot water pipes and kinking to assure proper water flow of the supply and return lines.

Included with the hose kit is a sink/faucet adapter

Hose Kit	Length	Flare Conn IN-OUT-DRAIN	OWC12	OWC18	OWC24	OWC36	OWC60
HK-1	10 ft	3/8 3/8 3/8	✓	✓	✓		
HK-2	25 ft	3/8 3/8 3/8	✓	✓	✓		
HK-5	40 ft	3/8 3/8 3/8	✓	✓	✓		
HK-3	10 ft	5/8 5/8 3/8				✓	✓
HK-4	25 ft	5/8 5/8 3/8				✓	✓
HK-6	40 ft	5/8 5/8 3/8				✓	✓

Hose Kit

OPTIONS

In some applications, units can be manufactured with optional components for added performance and longevity. Below are a few of the AQUA-COOLER options that are available for units.

Consult your distributor for pricing and availability.

TOWER UNITS

In applications where the AQUACOOLER is connected to a closed-loop condenser water circuit, a unit can be built for direct water connection without a water valve.

HIGH PRESSURE WATER VALVE

For applications where water supply pressures exceed 150 psig, a high pressure water regulating valve can be installed in the AQUACOOLER. Valves designed for use with up to 350 psig water inlet pressure, are available.

CUPRO-NICKEL CONDENSER

When chemically treated water, salt water or brine is used in the condenser coil, it is recommended that the AQUACOOLER be equipped with a 90/10 Cupro-Nickel condenser coil.

ACRYLIC TREATED EVAPORATOR COIL

When airborne contaminants are a problem for air conditioning applications, acrylic coated evaporator coils are recommended to guard against pitting or corroding.

HERESITE TREATED EVAPORATOR COIL

For use in chemically corrosive environments, the AQUACOOLER can be manufactured with a Heresite® coated evaporator coil for improved coil life.

HOT GAS BYPASS VALVE

In applications where low evaporator temperatures may occur, an optional hot gas bypass valve can be installed to regulate the evaporator temperature. The bypass valve feeds refrigerant (hot gas) into the evaporator to avoid freeze-ups.

INSTALLATION INSTRUCTIONS

RECEIVING—INSPECTION:

Upon receiving your AQUACOOLER unit, inspect the packaging for any damage. All units are shipped on a skid, and packaged in a triple-wall carton for added protection. In shipment, some wear may occur on the packaging. If the packaging is heavily damaged or broken, **file a claim with the freight company immediately**. Carefully unpack the unit and remove all wrapping materials. Save all documentation and fill out the Warranty Card and mail it to Oceanaire.

BEFORE INSTALLING

Check the air conditioner/spot cooler for any damage. All Oceanaire products are thoroughly inspected at the factory and carefully packaged. If any damage is evident, file a claim with the delivering carrier immediately.

ELECTRICAL REQUIREMENTS

Check the nameplate located on the back of the unit to make certain that the proper power is available for the unit. Refer to "Specifications" section for voltage and amperage requirements. For proper NEMA receptacles, refer to "Electrical service plug configuration". When using extension cords, use the properly sized cord, and check cord voltage to the unit.

TIME DELAY FUSES/CIRCUIT BREAKERS ARE RECOMMENDED

WARNING—OPERATING THE UNIT ON IMPROPER VOLTAGE WILL VOID THE WARRANTY

ACCESSORIES

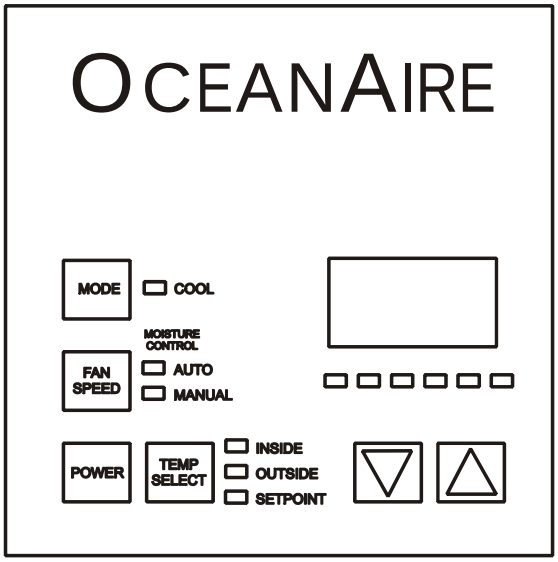
Verify that all accessories are correct for the model, and that they installed in accordance with all instructions.

START-UP

Install the unit in accordance with all local and state building codes, and install all accessories. Allow for a clearance around the unit for future maintenance and/or service. Level unit and lock casters, when available. Connect power and test the LCDI on the power cord (if available). Power up unit, via thermostat and check for proper operation. Refer to Thermostat Operation for more details.

Deluxe Electronic Controller

The AQUACOOLER controller is equipped with many features for a more precise level of cooling and operation. Additionally, the controller can be removed from the unit and installed for remote operation when using an extended display cable. Also, with the addition of a remote sensor, the controller can operate from the unit while sensing temperatures in another space or in ductwork — accessory parts may be required.



OCEANAIRE DELUXE ELECTRONIC CONTROLLER DISPLAY

When power is connected, the controller will display “888” momentarily, and will then go blank. Press the POWER button, then press the TEMP SELECT button until the SET POINT is displayed. Adjust the SET POINT to the desired temperature, and the unit will heat/cool as required.

The systems controls temperature within +/- 2°

POWER—Turns the unit on/off when power is supplied

MODE - Selects the mode of operation between Cool and Moisture Control.

COOL - The system will operate in cooling mode, only.

MOISTURE CONTROL - The system operates in the cooling mode to reduce humidity within the conditioned space.

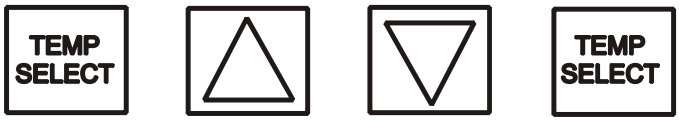
Every 4 hours, the fan is started, circulating the air, and the air temperature is recorded by the controller. The cooling cycle is started for one hour, or until the room temperature drops 2°, which ever comes first. This cycle repeats every four hours.

FAN SPEED—The operator can select between AUTO and MANUAL fan speed control. Pressing the FAN SPEED button, will switch speed from AUTO to MANUAL. In MANUAL mode, pressing the FAN SPEED button will change fan speed from low to high. In AUTO the fan speed is controlled automatically. In cooling mode, the controller automatically adjusts the fan speed to high, and as the inside temperature approaches the set point, the fan speed will reduce. In heat mode, the fan speed goes from low to high as the temperature approaches the set point

TEMP SELECT—Allows the operator to view the controller temperatures; INSIDE = return air temperature, OUTSIDE = supply air temperature, SET POINT can be seen and adjusted, by pressing ▲ or▼.

CONTROLLER PROGRAMMING MENU

1) Make sure the unit has power.
2) Pushing the POWER button, turn the unit "OFF".
3) Press the following buttons in sequence "S-U-D-S":
4) The display will begin flashing P1 and a number.



If there is no display, repeat the sequence, making sure the unit has power, but is turned OFF.

5) To adjust any program parameter, press the ARROW UP▲ or ARROW DOWN ▼ button until the desired value is displayed.
6) Use the "MODE" button to scroll through the programmable parameters P1 through P16.
7) If no buttons are pushed, the display will then return to the "OFF" position after about 50 seconds.

PROGRAMMING PARAMETERS

P1—High Fan Speed Limit Setting
P2—Low Fan Speed Limit Setting
P4—Temperature Sensor Calibration
P10— Temperature Display, °F or °C
P13—Supply Fan Operation, Cycling or Continuous
P15—Fan Motor Type Setting, PSC or Shaded Pole
7) To cycle the evaporator fan with the compressor, access code P-**P1, P2** - To adjust fan speed settings, P1 represents the high fan speed parameter, while P2 represents the low fan speed parameter. When using nozzle kits, discharge duct adapters and evaporator plenums, setting P1 to 85 will help to avoid freeze ups.

P4 - Adjust the P4 setting to match the actual INSIDE room temperature, if needed.

P10 - Use this parameter to display temperatures in the desired units.

P13 - To cycle the evaporator fan with the compressor, access code P-13. Press the up or down button to switch to "CYC", which means cycle the fan with the compressor. The factory default setting is "CON", which means continuous fan operation.

P15 - Fan Motors are PSC type, SC - should be selected.

8) Press POWER—you should see a code A (followed by numbers)

Press POWER and the unit will start at the new settings

AQUACOOLER PROGRAM PARAMETERS

MODEL	CODE SETTINGS
OWC12	P1 = 85, P2 = 35
OWC18	P1 = 80, P2 = 50
OWC24	P1 = 70, P2 = 50
OWC36	P1 = 85, P2 = 40
OWC60	P1 = 85, P2 = 45

NOTICE

Program Parameters are NOT controller default values.
They are Oceanaire Factory Settings

DISPLAY FAULTS

LAC……. Low AC line power
AAA…….Failed Air Sensor (unit will not run)
CON…….Empty Condensate Bucket—Units with a bucket
Condensate Pump Over-Flow Alarm—Units with pump
High Pressure Cut-Out—Low condenser water supply
correct problem, and re-set unit at HP RESET

TO CHECK THE NUMBER OF HOURS ON THE UNIT

1) Disconnect unit power, and reconnect unit power.
2) When “888” appears in display, push and release the arrow down button

3) The first set of numbers displayed reads thousands of hours:
02 = 2000, 04 = 4000 hours, 00 means less than 1000 hours.
4) The second set of numbers read hours directly:
58 = 58 hours. 742 = 742 hours.
6) Add the 2 number sets together to get total hours.
03 and 486 = 3486 hours. 01 and 59 = 1059 hours.

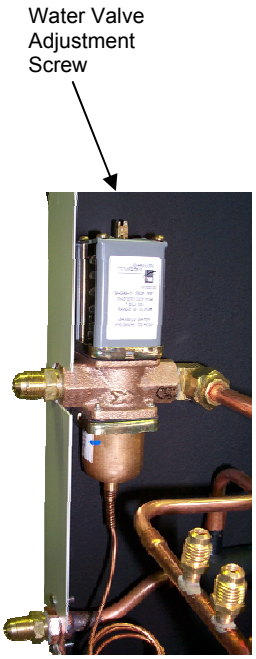
“TOTAL HOURS” REPRESENTS COMPRESSOR “RUN” TIME

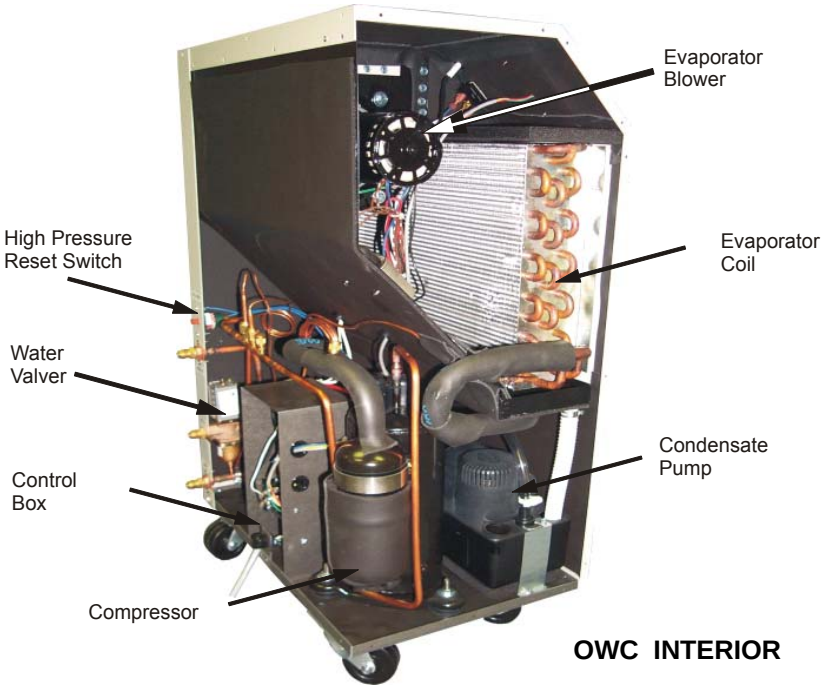
WATER VALVE ADJUSTMENT

All AQUACOOLER units come equipped with automatic pressure regulated water valves, that control the condenser water flow rate. The water valves will open when the system is running and will adjust the water flow rate as required by the air conditioning system.

In some cases, water temperatures can cause the valve to open and close at a high rate, causing a “chattering” condition in the water supply line. In these cases, it is recommended that the water valve be adjusted.

1. Disconnect the unit power.
2. Remove the unit back panel and locate the water regulating valve in the lower right region of the unit.
3. Locate the water valve adjustment screw. At the top of the valve there is a square-shaped adjustment screw.
4. Turn the adjustment screw 1/4 turn, re-start the unit, and observe operation to see if the “chattering” goes away. Make 1/4 turn adjustments and observe the unit operation until the condition goes away.
5. Close up the unit and POWER





OWC INTERIOR

REPLACEMENT PROCEDURE FOR PARTS

IT IS RECOMMENDED THAT ALL OCEANAIRE UNITS BE SERVICED BY A LICENSED TECHNICIAN

WARNING—TO AVOID INJURY, DISCONNECT UNIT POWER PRIOR TO SERVICING

A. FAN MOTORS

1. Remove cabinet's left-side panel (when looking at the front of the unit).
2. Evaporator fan motor—disconnect evaporator motor wires from evaporator fan contactor and fan speed rocker switch.
3. ***For all model sizes 12, 18 and 36***, remove the screws securing motors and inlet-ring to blower housings (all screws are external and visible), and remove blower wheel- motor assembly. Remove the blower wheel set screw and disassemble the blower wheel from the motor shaft and remove the motor.
   For models size 60—loosen blower wheel shaft set screw, and remove the screws securing the motor mount to the blower housing and remove motor and mount. Remove the motor from the motor mount.
4. Install the new motor, reversing the removal procedure.

B. ELECTRONIC CONTROLLER (2 PARTS)

1. To remove the display, first remove the two screws securing the display to the front of the cabinet on each side of the display module. Unplug the display cable and remove display. Plug in new display cable, and secure display to unit.
2. To remove the Power Module, remove the rear panel to locate the control box. Disconnect wires, and remove power module. Install new power module, and re-wire in accordance with the wiring diagram.

C. CONDENSATE PUMP (ALL UNITS)

1. Remove back panel and left side panel.
2. Remove brackets securing condensate pump in base pan, or condensate tank tray pan
3. Disconnect pump wire leads. Remove retainer clamp and tubing.
4. Replace pump, install by reversing procedure.

D. WATER REGULATING VALVE

1. Remove back panel, and the two mounting screws for the water valve from the right side panel.
2. Remove flare nut that secures capillary to the refrigeration system high pressure side. A Schrader valve is located in the discharge port, and allows removal without dumping the refrigerant charge.
3. Remove water valve from water lines by loosening the flare fitting at the valve outlet.
4. Replace water valve, and reconnect water and capillary lines.

E. HIGH PRESSURE SAFETY SWITCH

1. Remove cabinet back panel.
2. Remove flare nut that secures capillary to the refrigeration system high pressure side. A Schrader valve is located in the discharge port, and allows removal without dumping the refrigerant charge.
3. Remove two screws and spacers that retain high pressure switch.
4. Disconnect the low-voltage wire leads from compressor contactor and condensate pump safety switch.
5. Install new High Pressure Control, reversing the procedure.

To gain access to compressor and compressor run capacitor, remove the back panel.

TROUBLESHOOTING GUIDE

The following steps and procedures are recommended for correcting the problems indicated. In the event that the problem can not be corrected, service may be required.

SERVICE SHOULD BE PERFORMED BY A QUALIFIED AIR CONDITIONING SERVICE TECHNICIAN

PROBLEM: UNIT DOES NOT POWER UP

CAUSE: Power interruption

REMEDY: Check LCDI (on models with LCDI), and reset LCDI. Check external power supply making sure that the disconnect is ON. Check for blown fuses or tripped circuit breakers. Reset or replace if needed.

PROBLEM: NO DISPLAY ON THERMOSTAT AFTER POWER "ON"

CAUSE: Loose display cable, faulty thermostat or faulty power module

REMEDY: Check display cable, re-seat connectors. Thermostat may be defective...remove and replace. Power module may be defective...remove and replace.

PROBLEM: EVAPORATOR FAN RUNS BUT COMPRESSOR DOES NOT START

CAUSE: Thermostat — set point is too high.
REMEDY: Make sure set-point is lower than room temperature. Look for a red dot to the right of the temperature displayed for cooling.

Note—there is a delay for the compressor

CAUSE: Thermostat—Loose display cable
REMEDY: Examine the thermostat for a loose cable connection. Re-seat the display cable.

CAUSE: Condensate Alarm—"CON" is displayed.
REMEDY: Check condensate tank and empty tank or check condensate pump and make sure pump is working properly and that there is no kink in the drain line from the pump.

CAUSE: High Pressure Cut-Out—"CON" is displayed. Inadequate condenser water supply.
REMEDY: Verify condenser water supply. Check High Pressure Cut-Out Switch. Press Reset (RED Button on back of unit). Re-start unit.

CAUSE: Low Voltage — "LAC" is displayed. Check power supply for voltage outside the range of 106-126 volts on the 115 Volt units and 187-253 Volts on the 208/230 Volt units.
REMEDY: Have power checked by electrician and repaired.

CAUSE: Compressor relay failure.
REMEDY: Replace power module.

CAUSE: Compressor Contactor failure (3 and 5-ton units)
REMEDY: Replace compressor contactor.

PREVENTIVE MAINTENANCE

AQUACOOLERs are designed to last a long time and to give maximum performance and reliability with minimum maintenance. To prolong the life of the unit, regular maintenance must be performed as specified below:

BLOWER MOTORS
The motors on all units have permanently lubricated bearings. No oiling is necessary

FILTERS
A clogged filter will cause the unit to operate at greatly reduced efficiencies. We recommend that the filter be inspected on a regular bases every six weeks or more often depending on the environment. The evaporator filter is located behind the return air grille and can be easily removed and cleaned. The filters must be washed periodically as needed by placing them in a dishwasher or soaking them in a solution of warm water and detergent for 10 minutes. Then rinsing them clean with hot water and shaking excess moisture from filter.

CONDENSATE PUMP
Condensate pumps come standard on all AQUACOOLER models. When servicing pump follow these steps;

1. Make certain that the unit is disconnected from the power source before attempting to service or remove any component.

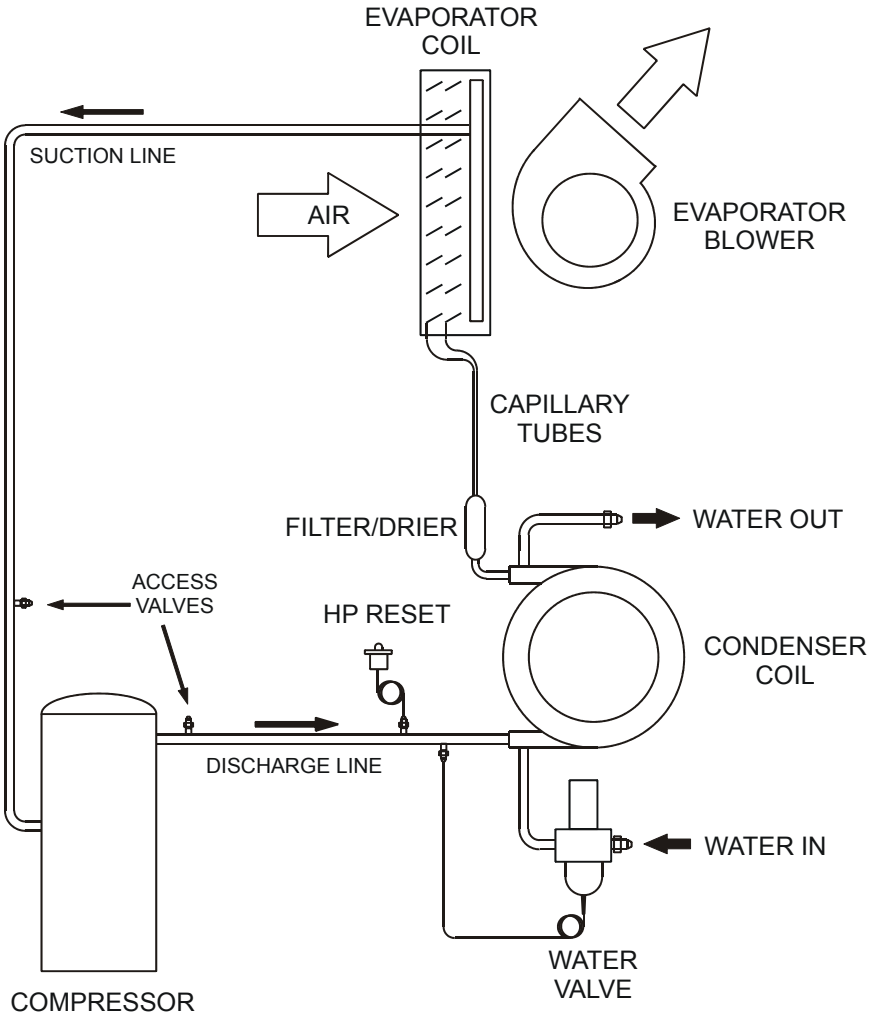
2. Be sure the floats move freely. Clean as necessary.

3. Remove the volute and check for obstructions. Clean as needed.

4. Clean the tank with warm water and mild soap when mineral deposits are visible.

5. Check the inlet and outlet piping. Clean as necessary. Be sure there are no kinks in the lines that would inhibit flow.

GENERAL
When necessary maintenance steps outlined above are followed, the air conditioner will provide long and reliable service. The refrigeration and electrical circuits of the system should only be serviced by a fully qualified service technician.



PIPING SCHEMATIC
Water-Cooled Spot Cooler

Three Phase Monitor

Three-Phase units can be equipped with monitors for motor protection. The Oceanaire Three-phase Monitor safeguards the unit against incorrect compressor rotation, low-voltage and/or loss of power in any one of the power legs. The monitor is installed in the control box and is equipped with an LED for diagnosis of an improper electrical condition (see diagrams below). When power is connected, the thermostat WILL NOT power up, until the monitor start delay has been timed out. If the thermostat does not power up, an electrical condition may need to be addressed. Remove the control box cover and check the observe the LED on the phase monitor. The LED signals the following:

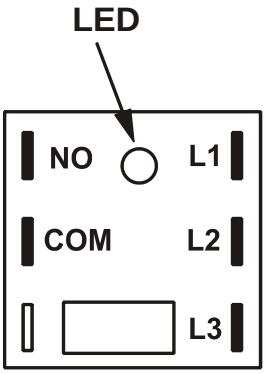
GREEN-BLINKING - Start delay, 120 sec.

GREEN - Proper Operation

RED/GREEN-BLINKING signals reverse phase rotation. Switch any two of the power leads for the unit, NOT THE MONITOR LEADS, and re-start.

RED-BLINKING signals improper voltage and/or phase loss. Correct the power problem, then re-start the unit.

In the event of a power interruption, the unit will re-set to a start-up condition. The Phase Monitor will not allow the unit to start until power is corrected.



THREE-PHASE MONITOR

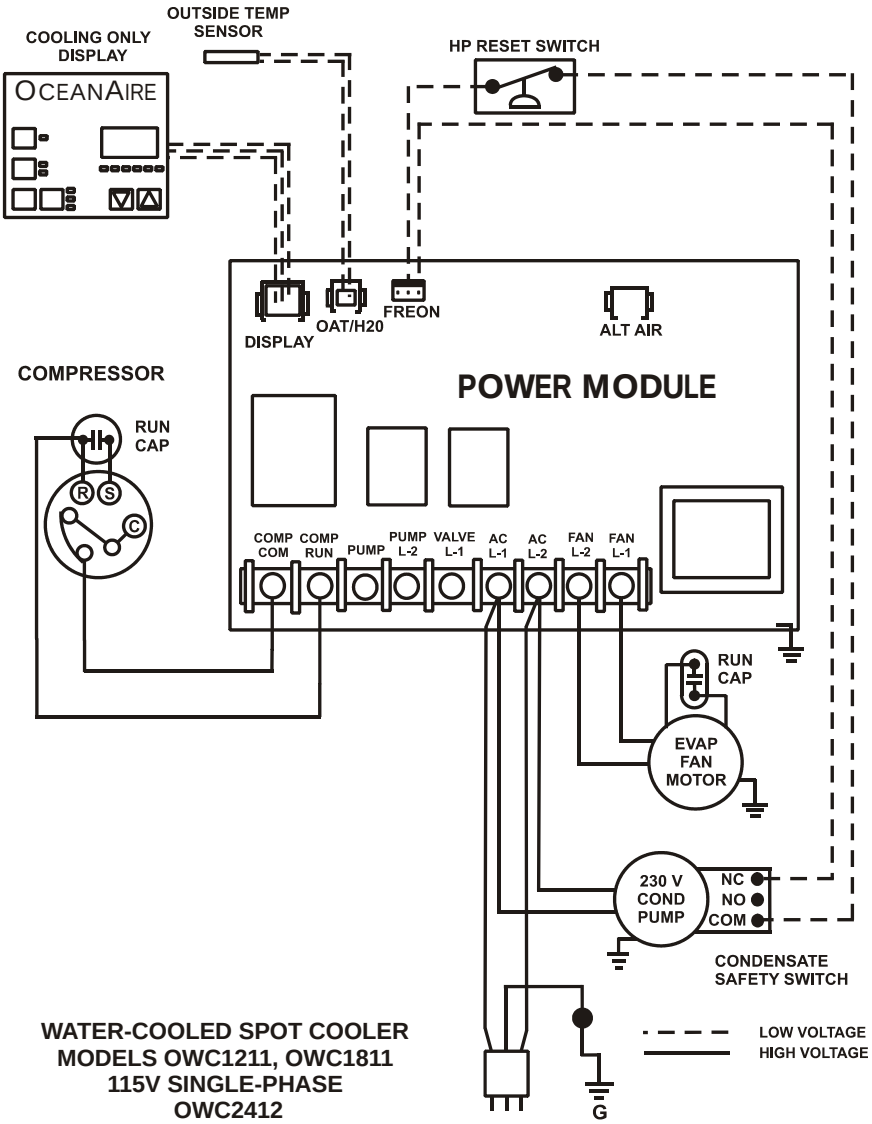
NOTICE

UNIT IS EQUIPPED WITH 3-PHASE POWER MONITOR (WITH LED)

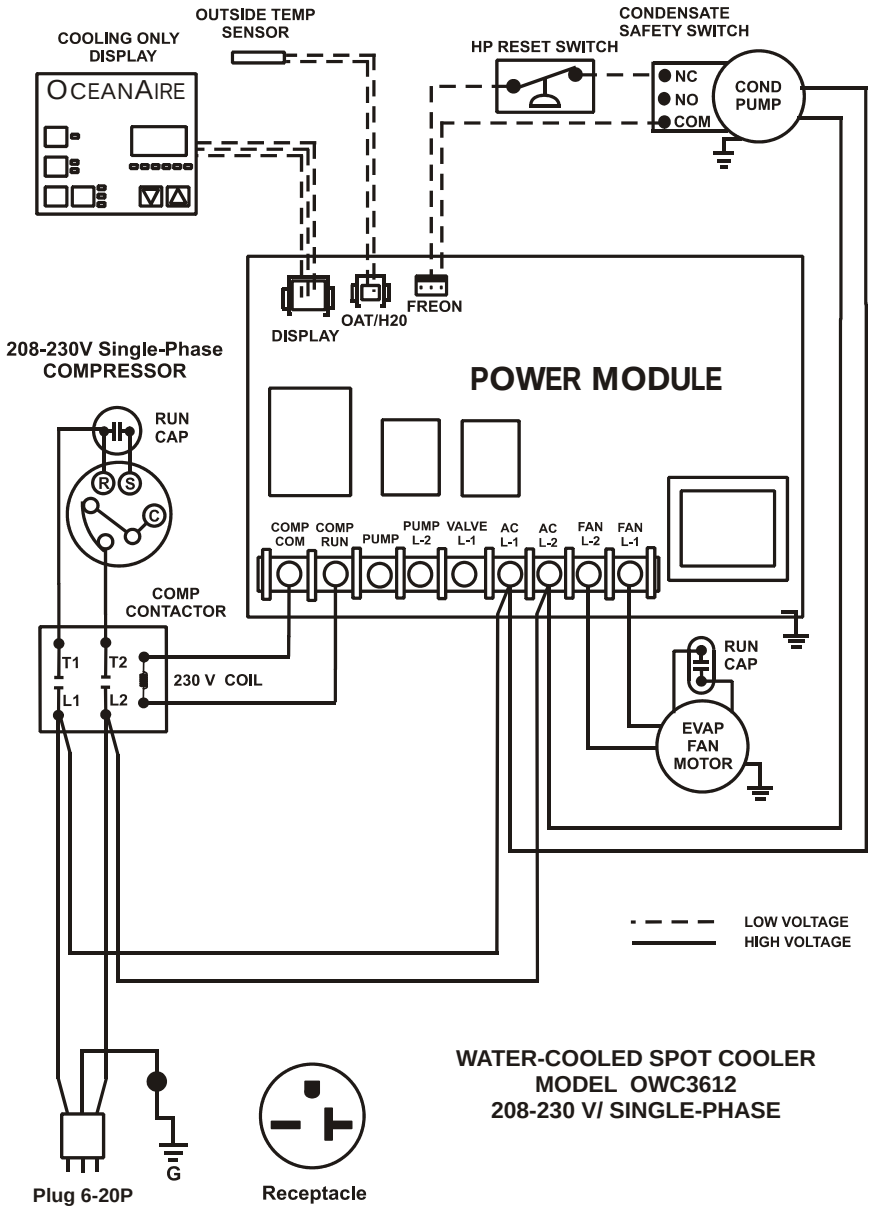
LED INDICATION
GREEN (BLINKING) = START DELAY
GREEN = PROPER OPERATION
RED/GREEN/BLINKING = PHASE REVERSAL
RED (BLINKING) = IMPROPER LEG VOLTAGE OR PHASE LOSS

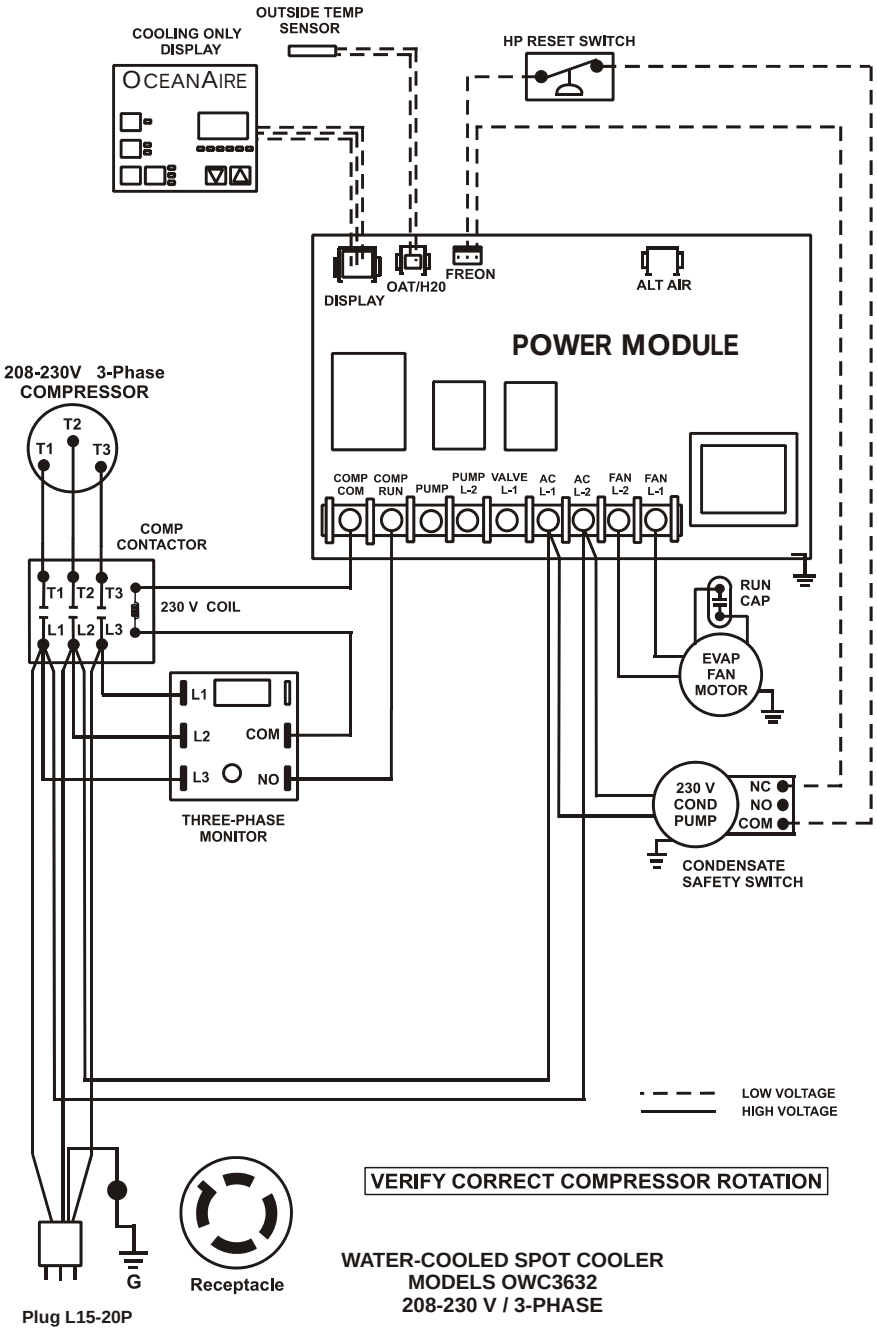
START DELAY = 120 SECONDS

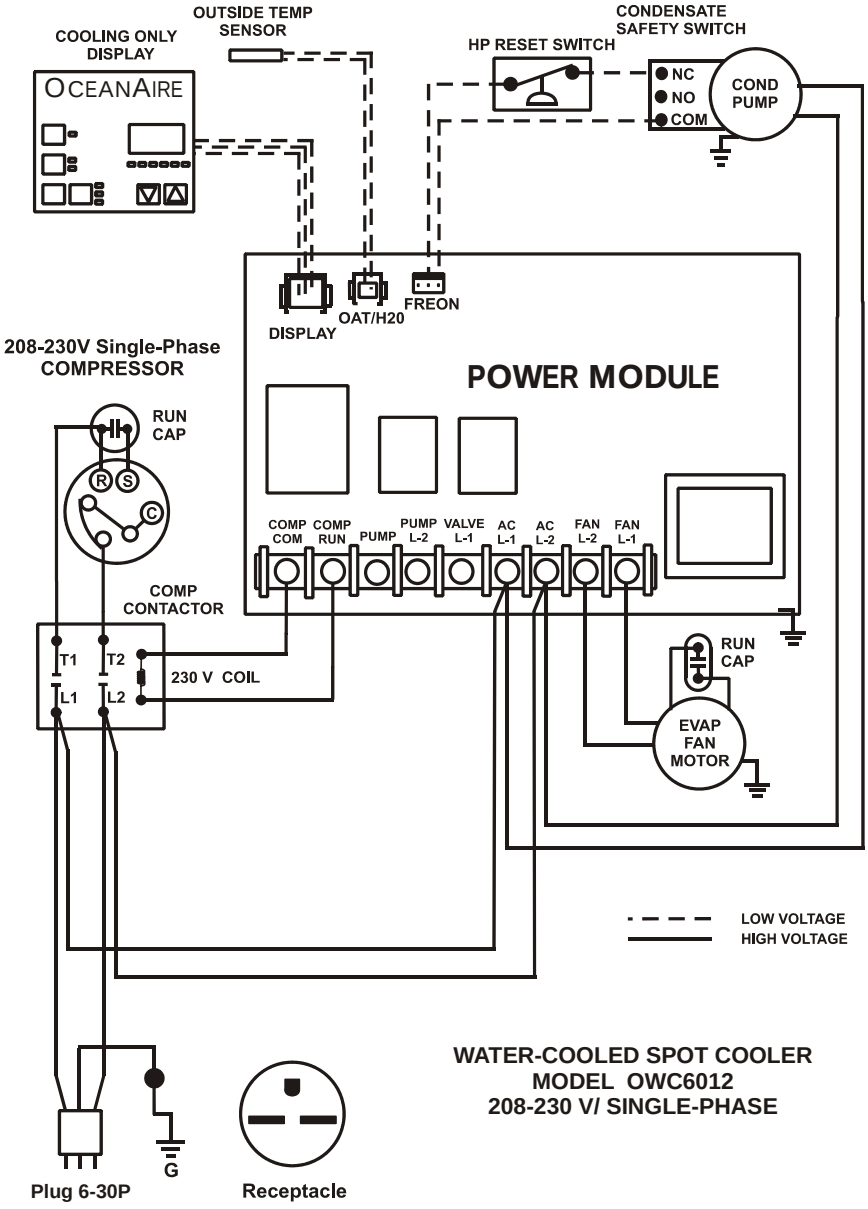
CONTROL BOX LABEL

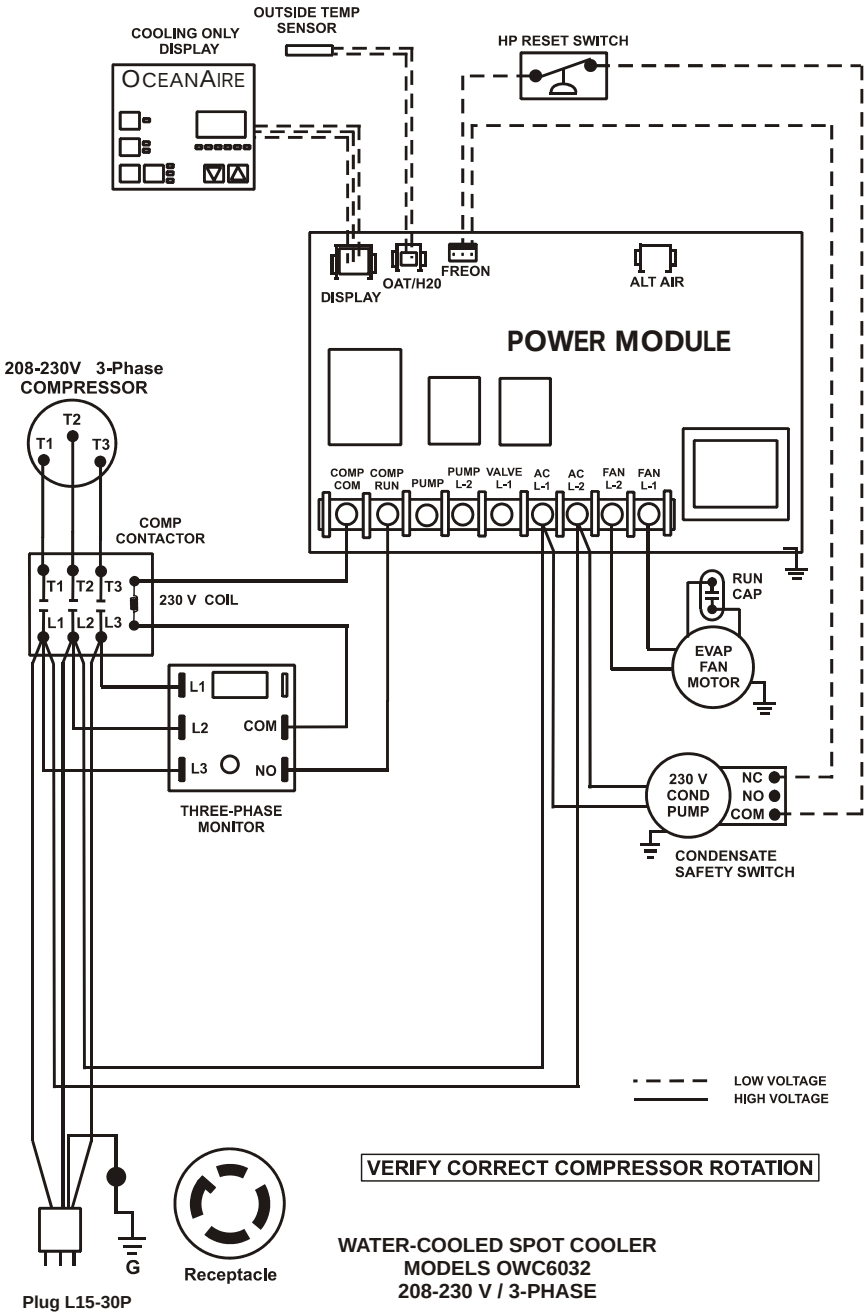


WATER-COOLED SPOT COOLER
MODELS OWC1211, OWC1811
115V SINGLE-PHASE
OWC2412
208-230V SINGLE-PHASE


OUTSIDE TEMP SENSOR
COOLING ONLY DISPLAY
OCEANAIRE
CONDENSATE SAFETY SWITCH
HP RESET SWITCH
NC
NO
COM
COND PUMP
DISPLAY
OAT/H20
FREON
208-230V Single-Phase COMPRESSOR
POWER MODULE
RUN CAP
R
S
C
COMP COM
COMP RUN
PUMP
PUMP L-2
VALVE L-1
AC L-1
AC L-2
FAN L-2
FAN L-1
COMP CONTACTOR
T1
T2
L1
L2
230 V COIL
RUN CAP
EVAP FAN MOTOR
LOW VOLTAGE
HIGH VOLTAGE
G
Plug 6-20P
Receptacle
WATER-COOLED SPOT COOLER
MODEL OWC3612
208-230 V/ SINGLE-PHASE

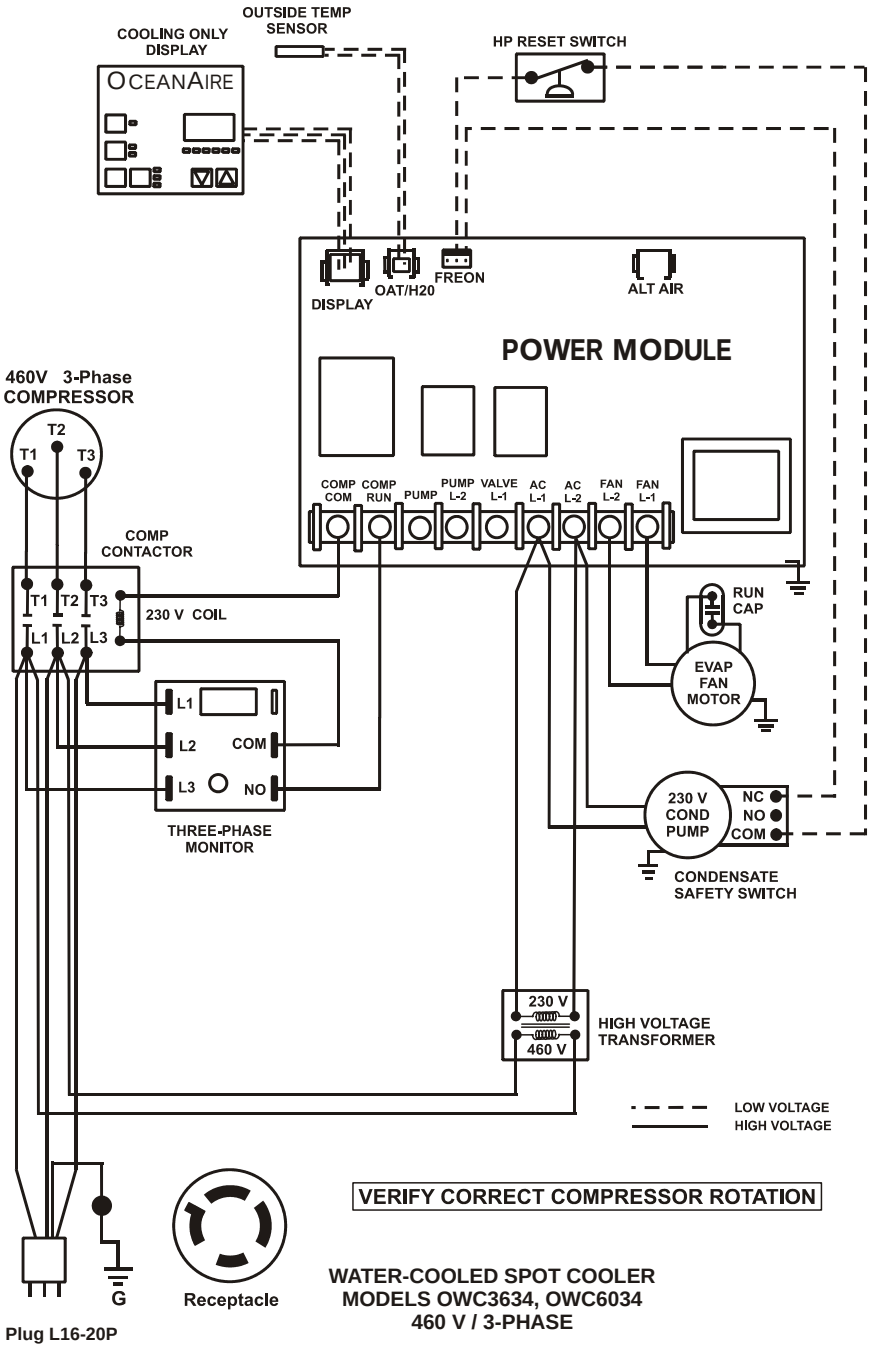

OUTSIDE TEMP SENSOR
COOLING ONLY DISPLAY
OCEANAIRE
HP RESET SWITCH
DISPLAY
OAT/H20
FREON
ALT AIR
POWER MODULE
208-230V 3-Phase COMPRESSOR
T2
T1
T3
COMP CONTACTOR
T1 T2 T3
L1 L2 L3
230 V COIL
COMP COM
COMP RUN
PUMP
PUMP L-2
VALVE L-1
AC L-1
AC L-2
FAN L-2
FAN L-1
RUN CAP
EVAP FAN MOTOR
L1
L2
COM
L3
NO
THREE-PHASE MONITOR
230 V COND PUMP
NC
NO
COM
CONDENSATE SAFETY SWITCH
LOW VOLTAGE
HIGH VOLTAGE
G
Receptacle
Plug L15-20P
VERIFY CORRECT COMPRESSOR ROTATION
WATER-COOLED SPOT COOLER
MODELS OWC3632
208-230 V / 3-PHASE


OUTSIDE TEMP SENSOR
COOLING ONLY DISPLAY
OCEANAIRE
CONDENSATE SAFETY SWITCH
HP RESET SWITCH
NC
NO
COM
COND PUMP
DISPLAY
OAT/H20
FREON
208-230V Single-Phase COMPRESSOR
POWER MODULE
RUN CAP
R
S
C
COMP COM
COMP RUN
PUMP
PUMP L-2
VALVE L-1
AC L-1
AC L-2
FAN L-2
FAN L-1
COMP CONTACTOR
T1
T2
L1
L2
230 V COIL
RUN CAP
EVAP FAN MOTOR
LOW VOLTAGE
HIGH VOLTAGE
G
Plug 6-30P
Receptacle
WATER-COOLED SPOT COOLER
MODEL OWC6012
208-230 V/ SINGLE-PHASE



VERIFY CORRECT COMPRESSOR ROTATION

WATER-COOLED SPOT COOLER
MODELS OWC6032
208-230 V / 3-PHASE



VERIFY CORRECT COMPRESSOR ROTATION

WATER-COOLED SPOT COOLER
MODELS OWC3634, OWC6034
460 V / 3-PHASE

MANUFACTURER'S LIMITED WARRANTY

The Manufacturer (OceanAire, Inc.) warrants to the original owner that the Product will be free from defects in material or workmanship for a period not to exceed one (1) year from date of installation. If upon examination by the Manufacturer the Product is shown to have a defect in material or workmanship, during the warranty period, the manufacturer will repair or replace, at its option, that part of the Product which is shown to be defective.

The Manufacturer further warrants that the product's compressor-motor will be free from defects in materials and workmanship for five (5) years from the date of installation. If upon examination by the Manufacturer, the Compressor-Motor is shown to have a defect in materials or workmanship during the warranty period, the Manufacturer will repair or replace, at its option, that compressor which is shown to be defective. Electrical parts (such as relays, overloads, capacitors, etc.) and the sealed refrigeration system (condenser and evaporator) are included in the one year limited warranty, but not with the five year limited warranty of the compressor. This limited warranty does not apply:

a) if the Product has been subjected to misuse or neglect, has been accidentally or intentionally damaged, has not been installed, maintained or operated in accordance with the furnished written instructions, or has been altered or modified in any way.

b) to any expenses, including labor or material, incurred during removal or reinstallation of the Product.

c) to any workmanship of the installer of the Product.This limited warranty is conditional upon:

(i) shipment, to the Manufacturer, of that part of the Product thought to be defective. Goods can only be returned with prior written approval from the Manufacturer. All returns must be freight prepaid.

(ii) determination, in the reasonable opinion of the Manufacturer that there exists a defect in material or workmanship.

Repair or replacement of any part under this Limited Warranty shall not extend the duration of the warranty with respect to such repaired or replaced part beyond the stated warranty period.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, AND ALL SUCH OTHER WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS LIMITED WARRANTY. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE IN ANY WAY FOR ANY CONSEQUENTIAL, SPECIAL, OR INCIDENTAL DAMAGES OF ANY NATURE WHATSOEVER, OR FOR ANY AMOUNTS IN EXCESS OF THE SELLING PRICE OF THE PRODUCT OR ANY PARTS THEREOF FOUND TO BE DEFECTIVE. THIS LIMITED WARRANTY GIVES THE ORIGINAL OWNER OF THE PRODUCT SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY BY EACH JURISDICTION.

USEFUL INFORMATION

MODEL: _____

SERIAL: _____

DATE PURCHASED: _____

OCEANAIRE 6228 Oakton Street Morton Grove, IL. 60053 Phone 847-583-0311 (or 0317) Fax 847-583-0312
E-Mail sales@oceanaire-inc.com 1-866-GET-AIRE (438-2473) www.oceanaire-inc.com