



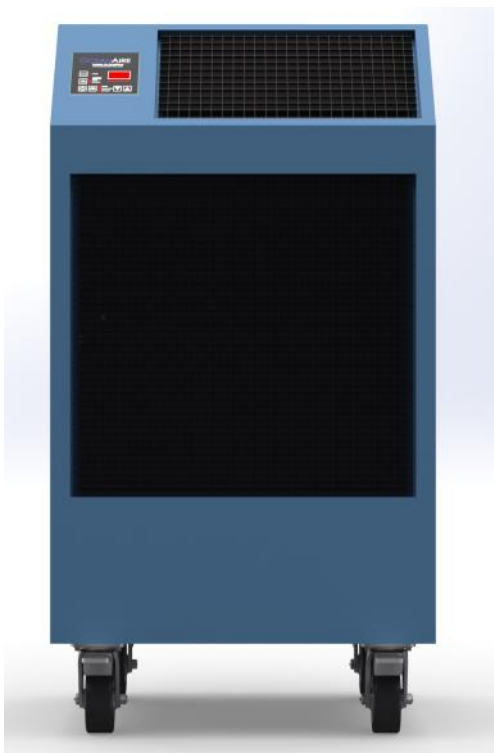
PROVIDING A BETTER CLIMATE ANYWHERE.

# OWC- QC series

## Deluxe Portable Water-Cooled Cooler With Quick Connect

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ENGINEERING, INSTALLATION AND SERVICE MANUAL



WATER COOLED



*Cooling done Right!*

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## **FORWARD**

This manual provides the user with basic details for the installation and operation of the Oceanaire OWC-QC's spot coolers. It is recommended to read and fully understand the instructions outlined within this manual, before operating the unit.

As with all commercial air conditioning equipment, it is recommended to have the OWC-QC 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 OWC-QC unit when contacting the factory.

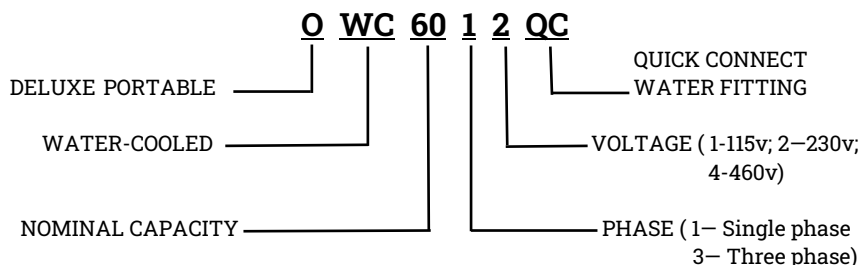
## **GENERAL INFORMATION**

The OceanAire OWC-QC model 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 OWC-QC 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 grille located on the upper-front of the unit.

The OWC-QC is a self-contained unit with the entire cooling system (blower assembly, electrical, refrigerant, and water side components), neatly arranged in a gray and blue polyester powder coated metal cabinet. When connected to the proper source of electrical power, the OWC-QC is controlled by a solid-state electronic device, with numerous options of temperature and airflow controls that will provide the desired level of comfort and cooling.

A wide variety of accessories and factory installed options are available for the OWC-QC, allowing for improved performance and versatility.

## **NOMENCLATURE**



## **CAPACITY RATING**

18.....18,000 BTU/HR  
24.....24,000 BTU/HR  
36.....36,000 BTU/HR  
60.....60,000 BTU/HR

**NOT APPROVED FOR OUTDOOR USE**

## **WARRANTY**

**ALL OCEANAIRE PRODUCTS ARE COVERED  
BY THE OCEANAIRE LIMITED WARRANTY**

**1 YEAR ON THE FULL PRODUCT  
PLUS, 4 ADDITIONAL YEARS FOR THE COMPRESSOR  
(Restrictions Apply)**

## **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.

# SPECIFICATIONS

OWC QC

MODEL: OWC QC	1811QC	2412QC	3612QC	3632QC	3634QC	6012QC	6032QC	6034QC
COOLING CAPACITY	18,000	23,950	36,100			60,100		
VOLTAGE (V/Phase) at 60Hz	115	208-230/1		208-230/3	460/3	208-230/1	208-230/3	460/3
AMPS	11.3	9.9	12	9.3	4.7	23.7	16.5	6.3
TOTAL WATTS	1300	2100	2700			5000		
IN-RUSH CURRENT (AMPS)	69	55	100	80	48	165	149	75
PLUG TYPE	5-15P LCDI	6-20P LCDI	6-20P LCDI	L15-20P	L16-20P	6-30P LCDI	L15-30P	L16-20P
EER	13.8	11.4	13.4			12		
COMPRESSOR	ROTARY			SCROLL		SCROLL		
COMPRESSOR HP	1.5	2	3			5		
COMPRESSOR LRA	63	48	83	77	35	158	137	62
EVAP CFM - HIGH	600	810	1200			1950		
EVAP MOTOR HP	1/8	1/3	1/3			1		
CONDENSER WATER FLOW								
AT 60°F WATER IN (GPM)	1.1	1.55	2.2			3.8		
AT 85°F WATER IN (GPM)	4.5	6	9			15		
QC WATER LINE CONNECTIONS								
WATER IN - Black label	3/8"		5/8"			5/8"		
WATER OUT - Red label	3/8"		5/8"			5/8"		
DRAIN - Yellow label	1/4"		3/8"			3/8"		
R-410A CHARGE (oz.)	18	20	24			52		
HEIGHT (in.)	45.7		50.9			53.2		
WIDTH (in.)	21.5		28.2			28.1		
DEPTH (in.)	16.0		21.5			29.1		
NET WEIGHT (lb.)	155	170	275	310	310	375	410	

OWCQCSPECS02012024

## SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

- QA Cooling capacity is total BTUH at 80°DB/67°WB return air, High fan speed, with 85°EWT and 95°LWT (4.5 GPM)
- QA Time delay fuses/circuit breakers are recommended
- QA EER is determined at High fan speed
- QA CFM with free discharge
- QA Amps and Watts at 115/208/460 volts
- QA Hose colors

Water in—black label  
Water out—red label  
Drain—yellow label



**COOLING AMBIENT OPERATING RANGE 65° to 105°**  
**NOT APPROVED FOR OUTDOOR USE**



OWC18 QC series  
OWC24 QC series



OWC36 QC series  
OWC60 QC series

# **STANDARD FEATURES**

## **CABINET**

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

## **DELUXE ELECTRONIC CONTROLLER**

The OWC-QC is equipped with a deluxe electronic controller. When proper 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 deluxe electronic controller is capable of setting the fan speed for manual or automatic. In manual setting, the fan speed can be programmed to any of the six fan speed levels, from (1) Low to (6) High. In auto setting, the unit will determine the best fan speed based on the inside temperature and selected SETPOINT.

## **CONDITION ALARM—CON**

The LED thermostat of the unit will display the fault "CON" which indicates a condition that needs to be addressed.

CONDENSATE PUMP... Failed/Restricted drain tube/routed incorrectly

WATER SUPPLY..... Turned off/Interrupted flow

**EITHER CONDITION WILL DISABLE THE COMPRESSOR**

## **CONDENSATE PUMP**

Each OWC-QC unit comes equipped with an Automatic Condensate Pump that removes the condensate. The pump discharges through a check valve located on top of the condensate pump assembly. The vinyl tubing exits through a 3/8" male quick connect fitting, located in the recessed area of the unit. The pump has capabilities up to a 20' lift, to handle almost any installation requirement. If a failure occurs with the operation of the pump circuit, the **Normally Closed overflow switch** will open, and the fault "CON" will display in the window. When the failure has been corrected, or the condensate line blockage/kink has been resolved, the fault will be dropped from the screen, and the unit will restart.

## **HIGH PRESSURE SAFETY SWITCH**

Located in the recessed area of the OWC-QC unit is a manual reset high pressure switch. It is used for the protection of the compressor, in the event that the condenser water supply is turned off. If the internal pressure exceeds the limit setting, the switch cycles off the compressor, while the evaporator fan continues to operate. Once the water interruption has been corrected, turn the unit off, **RESET THE RED BUTTON** by pushing down on the rubber boot in the recessed area of the unit, listening for the click, and restart the unit.

## **FILTERS**

The OWC-QC unit is equipped with a washable filter at the air intake. An electrostatic mesh air filter is located behind the evaporator return air grille to filter the air before it is cooled, keeping the coil free from dust build-up. The filter can be easily removed and cleaned.

## **POWER CORD**

The OWC-QC unit is equipped with a 10 foot power cord for convenience.

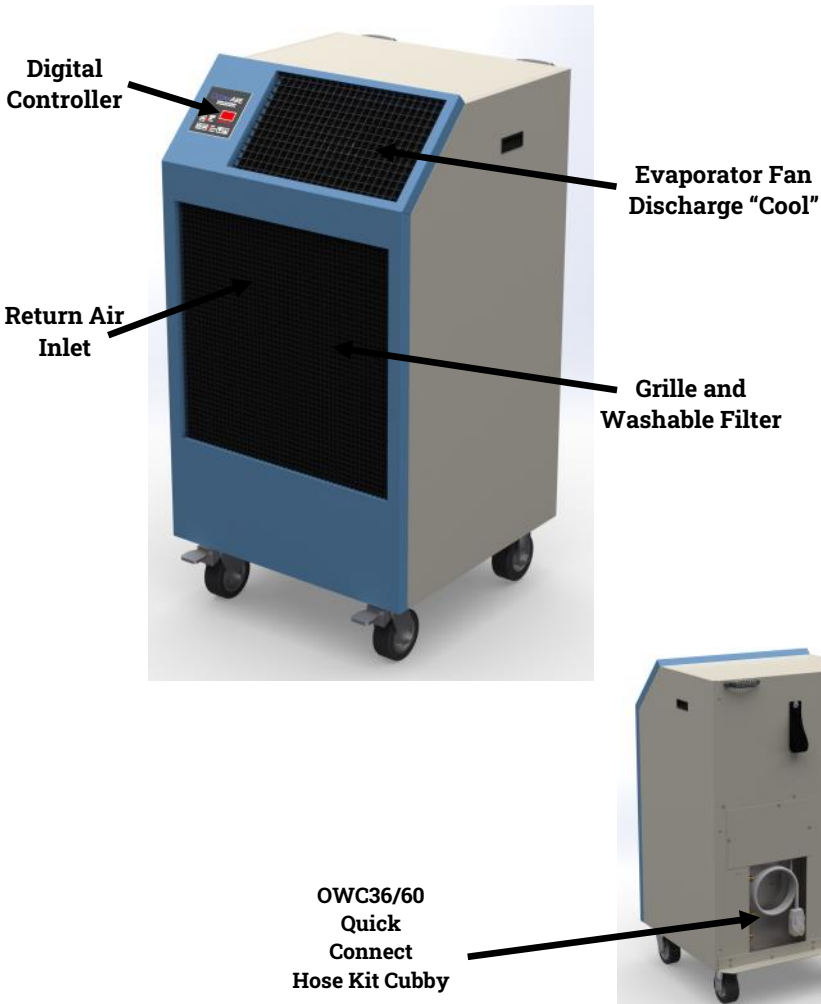
# APPLICATIONS

## SPOT COOLER

The OWC QC 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 not viable. Cool air is discharged from the units grille and is directed where it is needed. A nozzle kit can be used to improve the velocity.

## ROOM AIR CONDITIONER

One feature of the OWC-QC is it operates as a room air conditioner because water is used as the means for heat rejection. The major advantage 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 kit lengths are available that can be used for connecting to a water supply and drain, while providing portability within the conditioned space.



# **ELECTRICAL CONFIGURATION**







All OWC QC Series units are equipped with a standard 10-foot long service cord with plug configurations and receptacle requirements as shown in this chart. All single phase OWC-QC units are equipped 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 OWC models.

**A DAMAGED POWER SUPPLY CORD  
MUST BE REPLACED WITH A NEW  
POWER SUPPLY CORD AND NOT REPAIRED**

UNIT/MODEL	PLUG CONFIGURATION	RECEPTACLE
<b>115 VOLT</b> OWC1811QC	 15A-125 VOLT NEMA 5-15P	NEMA 5-15R
<b>208-230 VOLT SINGLE PHASE</b> OWC2412QC OWC3612QC	 20A-250 VOLT NEMA 6-20P	NEMA 6-20R
<b>208-230 VOLT SINGLE PHASE</b> OWC6012QC	 30A-250 VOLT NEMA 6-30P	NEMA 6-30R
<b>208-230 VOLT 3-PHASE</b> OWC3632QC	 20A-250 VOLT NEMA L15-20P	NEMA L15-20R
<b>208-230 VOLT 3-PHASE</b> OWC6032QC	 30A-250 VOLT NEMA L15-30P	NEMA L15-30R
<b>460 VOLT 3-PHASE</b> OWC3634QC OWC6034QC	 20A-460 VOLT NEMA L16-20P	NEMA L16-20R

# **USE OF EXTENSION CORDS**

## **CAUTION**

**FOR MODEL OWC1811QC** 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 OWC2412QC and OWC3612QC** 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 OWC6012QC** 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 OWC3632QC** AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 20 AMPS @ 250 VOLTS, 3 PHASE

**FOR MODEL OWC6032QC** AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 30 AMPS @ 250 VOLTS, 3 PHASE

**FOR MODELS OWC3634QC AND OWC6034QC** AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 20 AMPS @ 600 VOLTS, 3 PHASE

## **SPECIAL NOTICE—THREE PHASE OPERATION**

### **Models OWC3632QC, OWC3634QC, OWC6032QC and OWC6034QC**

All three-phase OWC-QC 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 WHILE BY-PASSING THE MONITOR. **THIS WILL VOID THE WARRANTY.**



# OWC QC INTERIOR

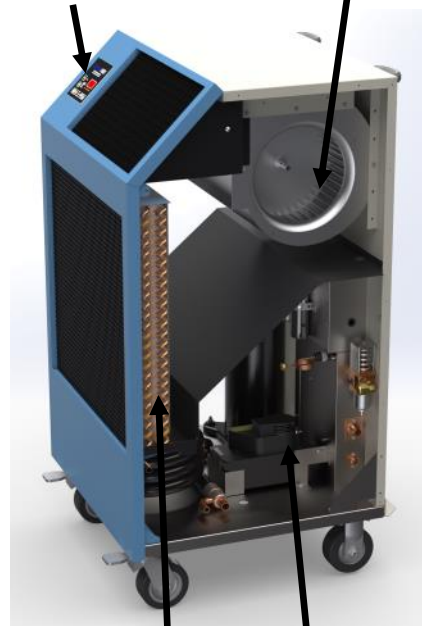
Motor



Compressor

Digital Controller

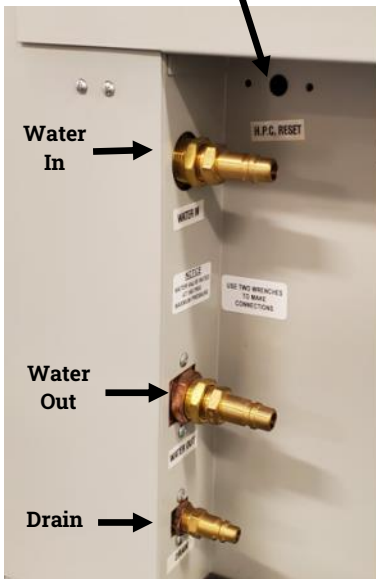
Blower Wheel



Evaporator Coil

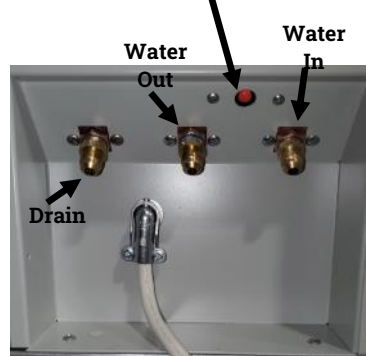
Condensate Pump

High Pressure Switch Reset Button



Cubby for the Hose Kit (OWC36/60 QC)

High Pressure Switch Reset Button



Cubby for the Hose Kit (OWC18/24QC)

# **INSTALLATION INSTRUCTIONS**

## **RECEIVING—INSPECTION**

Upon receiving your unit, inspect the packaging for any damage. All units are shipped on a skid, and packaged in a triple-wall carton for added protection.

## **BEFORE INSTALLING**

Check the unit for any damage. All Oceanaire products are thoroughly inspected at the factory and carefully packaged. If any damage is evident, contact Oceanaire **IMMEDIATELY**.

## **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. Connect power cord. Power up unit via thermostat, and check for proper operation. Refer to Thermostat Operation for more details.

## **ELECTRICAL REQUIREMENTS**

Check the nameplate located on the back of the unit to confirm the proper power is available for the unit. **Refer to "Specifications"** section for voltage and amperage requirements. For the proper NEMA receptacle, refer to "Electrical service plug configuration". When using an extension cord, use the proper gauge cord, and check cord voltage at 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 are installed in accordance with all instructions.

# OWC QC Optional ACCESSORIES

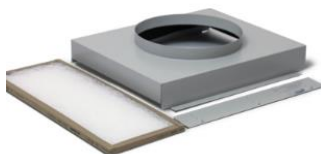
## **NOZZLE KIT**

2NK-2	(2 X 6-Inch)	OWC18QC, 24QC
2NK-3	(2 X 8-Inch)	OWC36QC, OWC60QC



## **EVAPORATOR RETURN AIR PLENUM**

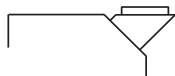
2DEP-12	(12-Inch Round)	OWC18QC, 24QC
DEP-16	(16-Inch Round)	OWC36QC, 60QC



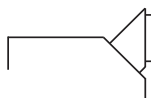
## **DISCHARGE DUCT ADAPTER**

2DDA-10	(10-Inch Round)	OWC18QC, 24QC
2DDA-16	(16-Inch Round)	OWC36QC, 60QC

The 2DDA is a field installed duct adapter that allows for round duct to be connected to the supply (discharge) of the unit. The insulated adapter is designed to install onto the unit without the use of tools, and is equipped with a round sheet metal flange for the connection of round flexible duct. The Duct Adapter is designed such that it can be installed in a vertical or horizontal orientation.



VERTICAL  
DISCHARGE



HORIZONTAL  
DISCHARGE

NOTE: When installing the 2DDA, ensure that there is sufficient space and room for the duct to install with a minimum number of bends. Fan speeds need to be set to the highest setting possible, in manual mode.

\*Flexible duct can be ordered, or is field supplied.

## QC ACCESSORIES

### **DISCHARGE AIR NOZZLE KIT ASSEMBLY**

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 and/or equipment. In server rooms, the nozzles can be used to direct the airflow through the rack to remove the hot air from the area of the equipment.

**2NK-2 for models OWC18QC and OWC24QC** with (2) 6-inch diameter nozzles with an approximate compressed length of 22 inches. The approximate extended length is 32 inches.

**2NK-3 for model OWC36QC and OWC60QC** , 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-assembled with the nozzles secured to a mounting plate, and with edge guards. By removing the OWC discharge grille, you can insert the nozzle kit into the opening without the use of tools.



# QC ACCESSORIES

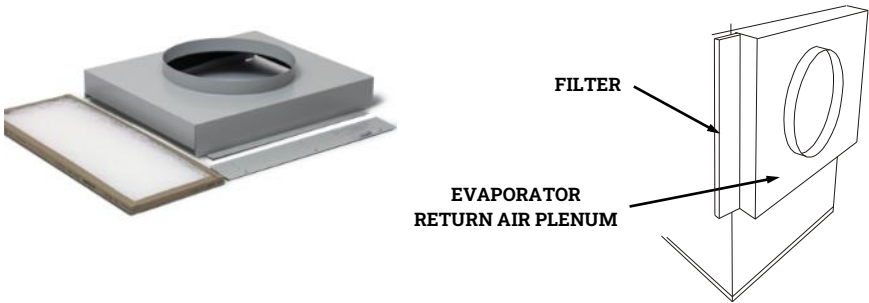
## EVAPORATOR RETURN AIR PLENUM

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 grille. Refer to the table below for configuration and application information

**2DEP-12** for OWC18QC and OWC24QC transitions the return opening to a 12-inch round duct.

**DEP-16** for OWC36QC and OWC60QC transitions the return opening to a 16-inch round duct.

**NOTE**—When a DEP/2DEP is installed, it is recommended to set the evaporator blower speed to high, in manual mode, to avoid evaporator coil freeze-up.



Plenum Kit Duct/Flange	OWC18QC	OWC24QC	OWC36QC	OWC60QC	FILTERS
<b>2DEP-12</b> 12 inch	✓	✓			(1) 16"x24"x1"
<b>DEP-16</b> 16 inch			✓	✓	(1) 22"x28"x1"
<b>Maximum Equivalent Feet</b>	50	60	70	80	
<b>Est. External Static Pressure</b>	(.25)	(.25)	(.25)	(.50)	

## QC ACCESSORIES

### **DISCHARGE DUCT ADAPTER**

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 adapter is attached in the grille opening.

**2DDA-10** for OWC18QC and OWC24QC, converts the evaporator discharge to a 10-inch diameter round duct.

**2DDA-16** for OWC36QC and OWC60QC, converts the evaporator discharge to a 16-inch round duct.

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

***NOTE—When a 2-DDA is installed, it is recommended to set the evaporator blower speed to high, in manual mode, to avoid evaporator coil freeze-up.***



Adapter Model	Round Duct Size	OWC18QC	OWC24QC	OWC36QC	OWC60QC
2DDA-10	10-inch	✓	✓		
2DDA-16	16-inch			✓	✓
Maximum Approx. Equivalent Feet		50	60	70	80
Maximum E.S.P		.25	.25	.25	.50

# HK-QC Series Deluxe Hose Kit

## For All OWC-QC MODELS

All OceanAire Quick-Connect (QC) hose kits are designed for use with OceanAire Portable Water-cooled Air conditioners equipped with Quick-Connect Fittings, to accommodate almost any installation requirement. The hose kit allows for the unit to be connected to a water source while providing a certain level of portability and ease of installation. The QC Hose kits come in two sizes; 3/8-inch and 3/4-inch, and both sizes are available in three lengths; 10-foot, 25-foot and 40-foot.



The hose kit consists of three separate hoses; WATER IN, WATER OUT and DRAIN. The WATER-IN (BLACK) and WATER-OUT (RED) hoses are made of reinforced PVC tubing and serve for the water supply and water return. The DRAIN (YELLOW) is made of gray PVC and is used for the condensate pump discharge to a drain.

A QC lanyard is supplied with each QC Coupling. When engaged, this device releases the internal valve of the coupling allowing for air to break the vacuum, and drain the hose.

### MAXIMUM WORKING PRESSURE FOR WATER LINES: 100 PSIG

FEATURE	WATER-IN HOSE WATER-OUT HOSE	CONDENSATE HOSE (DRAIN)
Material	PVC with Polyester Braid	Gray PVC



**SINK  
ADAPTER**

\* All Hose Kits come with a 4-Way Sink Adapter Fitting

HOSE KIT	MODEL NO	HOSE LENGTH	UNIT SIDE FITTINGS			HOSE COUPLER/TERMINATION		
			WATER IN	WATER OUT	DRAIN	Female Garden Hose Connection	WATER OUT	DRAIN
HK-2QC	OWC18-24QC	25'	3/8	3/8	1/4	3/4	No Fitting	No Fitting
HK-5QC	OWC18-24QC	40'	3/8	3/8	1/4	3/4	No Fitting	No Fitting
HK-8QC	OWC18-24QC	75'	3/8	3/8	1/4	3/4	No Fitting	No Fitting
HK-4QC	OWC36-60QC	25'	3/4	3/4	3/8	3/4	No Fitting	No Fitting
HK-6QC	OWC36-60QC	40'	3/4	3/4	3/8	3/4	No Fitting	No Fitting
HK-7QC	OWC36-60QC	75'	3/4	3/4	3/8	3/4	No Fitting	No Fitting

HA-SMQC	3/8"x3/8"x1/4" QC hose adapter
HA-LGQC	3/4"x3/4"x3/8" QC hose adapter

040-088	1/4" QC FITTING
040-035	3/8" QC FITTING
040-036	3/4" QC FITTING

# HK-QC Series Hose Kits

## INSTALLATION INSTRUCTIONS

1. Connect Hose Kit to unit by aligning the QC Coupling with the QC Fitting on the unit. Connect the hose kit according to hose and unit labels:

**BLACK to WATER IN, RED to WATER OUT and YELLOW to DRAIN.** HOLD the coupling behind the sleeve allowing the sleeve to move freely and PRESS firmly, until the sleeve retracts and clicks. The “click” means that the QC Coupling is engaged onto the QC Fitting.

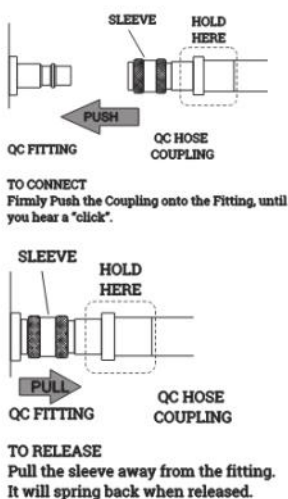
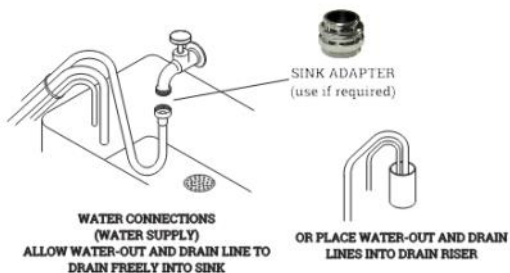
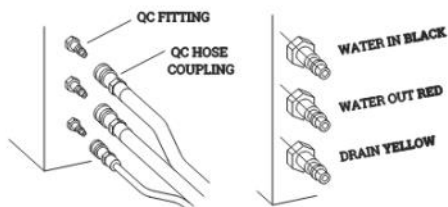
2. Connect **WATER IN** hose to water supply using hose connection, and sink adapter (if needed).

3. Install **WATER OUT** line in drain, allowing for free drain conditions with an air space around the opening.

4. Install **DRAIN** line in drain, allowing for free drain conditions.

5. Open water supply valve, and check for any water leaks in hose connections.

To release the coupling, Hold the Coupling as shown below, and pull back on the sleeve. The Coupling will release and the valve inside of the coupling will seal. Once off-site, use the fitting secured to the hose kit by the lanyard to release the valve and drain the hoses.





## HA-QC HOSE ADAPTER KIT



The **Hose Adapter Kit** allows for the installation of a **OWC QC series** water cooled unit where the Standard QC Hose Kit cannot accommodate the installation. The kit provides a means of connecting hoses to a QC-Model unit when the water source and drain are located in separate areas, or where longer hose runs are desired. The Hose Adapter is equipped with Quick-Connect Couplings along with the Garden Hose Connections as shown below:

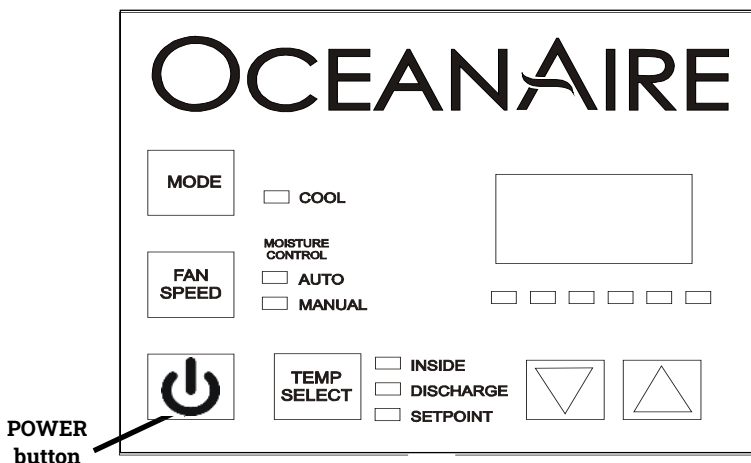
UNIT SIDE FITTINGS					TERMINATION FITTINGS			
HOSE KIT PART NO.	For Use with	WATER IN	WATER OUT	DRAIN	LENGTH	WATER SUPPLY	WATER-OUT	DRAIN
<b>HA-SMQC</b>	OWC1811QC OWC2412QC	3/8 QC Coupling	3/8 QC Coupling	1/4 QC Coupling	<b>2 ft.</b>	3/4 Female Garden Hose	3/4 Male Garden Hose	3/8 Hose Barb

FEATURE	WATER-IN HOSE WATER-OUT HOSE	CONDENSATE HOSE
Material	PVC with Polyester Braid	Gray PVC

UNIT SIDE FITTINGS					TERMINATION FITTINGS			
HOSE KIT PART NO.	For Use with	WATER IN	WATER OUT	DRAIN	LENGTH	WATER SUPPLY	WATER-OUT	DRAIN
<b>HA-LGQC</b>	OWC36QC OWC60QC	3/4 QC Coupling	3/4 QC Coupling	3/8 QC Coupling	<b>2 ft.</b>	3/4 Female Garden Hose	3/4 Male Garden Hose	3/8 Hose Barb

## **DELUXE ELECTRONIC CONTROLLER**

The OWC QC controller is equipped with many features for a more precise level of cooling and operation. With the addition of a remote sensor, the controller can sense temperatures in another space or in ductwork. Doing that, you override the temperature sensing bulb behind the evaporator grille.



### **OCEANAIRE DELUXE ELECTRONIC CONTROLLER**

When power is connected, the controller will display "888" momentarily, and then disappear. Press the POWER button, then scroll down to the TEMP SELECT button until the SET POINT is displayed. Adjust the SET POINT to the desired temperature, and the unit will 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** or **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 (1) to high (6). In **AUTO** mode, 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 decrease.

**TEMP SELECT**— Allows the operator to view the controller temperatures

**INSIDE** = return air temperature, **DISCHARGE** = supply air temperature,

**SET POINT** can be seen and adjusted, by pressing ▲ or ▼

# CONTROLLER PROGRAMMING MENU

- 1) Make sure the unit has power .
- 2) Press the power  button "OFF".
- 3) Press the following buttons in sequence "**S-U-D-S**"  
(Select–**U**p arrow – **D**own arrow – **S**elect)
- 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 feature, press the **ARROW UP ▲** or **ARROW DOWN ▼** button until the desired value is displayed.
- 6) Use the "**MODE**" button to scroll through the programmable settings P1 through P16.
- 7) If no buttons are pressed, the display will then return to the "OFF" position after about 50 seconds.



## PROGRAM SETTINGS

**P1–High Fan Speed Limit Setting: 56 - 85**

**P2–Low Fan Speed Limit Setting: 30 - 55**

**P4–Temperature Sensor Calibration: +/- 10°**

**P10– Temperature Display: °F or °C**

**P13–Supply Fan Operation: Cycling or Continuous**

**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.

- 8) Press **POWER** – you should see an alphanumeric code.

Press **POWER** and the unit will start at the new settings

## OWC QC PROGRAM SETTINGS

MODEL	CODE SETTINGS
OWC18 QC	P1 = 75, P2 = 50
OWC24 QC	P1 = 70, P2 = 50
OWC36 QC	P1 = 85, P2 = 40
OWC60 QC	P1 = 85, P2 = 45

### **NOTICE**

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


### DISPLAY FAULTS

**LAC.....** Low AC line power or communication problem  
between internal components.

**AAA or - - - .....** Failed Air Sensor (unit will not run)

**CON.....** Failed Condensate Pump/Over-Flow Alarm  
High Pressure Cut-Out–Low/interrupted  
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.
- 5) 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

Each OCEANAIRE WATER-COOLED unit is equipped with an automatic water regulating valve to control the condenser water flow rate. The water valve will open when the unit is in the cooling mode and adjust the gallon per minute flow rate based on the entering water temperature (EWT).

The water valve operates independently from the water system, and regulates flow based on the systems refrigerant head pressure.

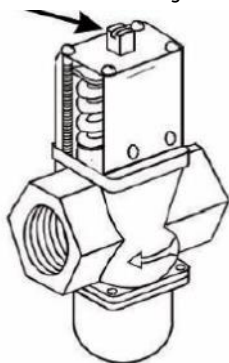
Under certain conditions, entering water temperatures can cause the valve to rapidly open and close, causing a "harmonic" pitch in the water supply line. In these cases, it is recommended that the water valve be adjusted.

1. Disconnect the unit power.
2. Remove water valve cover plate or back panel (depending on model) to locate the water valve.

The opening point pressure (also called the crack-open point) is the refrigeration pressure (at the valve sensing element) necessary to just lift the valve disc off the valve seat, allowing water to flow through the valve body.

3. At the top of the valve, there is a square shaped adjustment screw. Using a standard service wrench or flat blade screwdriver, adjust the valve using quarter turns, allowing the unit to operate 5 minutes after each new setting:
  - Turn the range adjustment screw CCW (closing the valve), which raises the high side pressure and raises the valve set point to open
  - Turn the range adjustment screw CW (opening the valve), which lowers the high side pressure and lowers the valve set point to open
4. Re-install valve cover plate or back panel when finished.

Regarding a field replacement water valve, the best practice is to close the valve, then turn the range adjustment screw (CW) to slowly open the valve, half-turns, to dial in the units exiting water temp between 100-105°F



# **QC DELUXE SERIES WATER COOLED** **TROUBLESHOOTING TIPS**

**techsupport@oceanaire-inc.com**

**(847) 583-0311**

## **NO DISPLAY**

- \*check power @ wall outlet
- \*check LCDI reset on cord end (if equipped)
- \*re-seat display cable's RJ connector on backside of controller
- \*re-seat other end of display cable in power module (pcb) display port
- \*confirm red LED is lit on power module

## **CON FAULT ON DISPLAY**

- \*reset HP switch
- \*COLD WATER SUPPLY is on
- \*confirm each color hose (IN-OUT-DRAIN) installed properly
- \*DISCONNECT/RECONNECT each hose to eliminate internal vacuum seal
- \*hoses routed properly-NO KINKS
- \*check condensate level in pump reservoir (HI limit float tripped)
- \*re-seat 2-pin orange connector in power module
- \*confirm all RJ connectors are seated properly

## **NO COOLING**

- \*set-point lower than inside ambient temperature
- \*red dot lit on digital display (call for cooling)
- \*confirm compressor is running (hear hum/feel vibration)
- \*electrical circuit has required ampacity available (unit pulling LRA)

## **NO COOLING COMPRESSOR RUNNING** (possible refrigerant leak)

## **ADDITIONAL NOTES ON 3 PHASE UNITS...**

- \*phase monitor solid red/red-green flashing will cause compressor to be locked out, resulting in fan only operation. Reverse any 2 leads in take-off plug or wall disconnect panel (DO NOT REVERSE ANY LEADS IN UNITS ELECTRICAL BOX)
- \*confirm correct incoming power is balanced across all (3) legs

## **GENERATOR APPLICATIONS...**be very careful with incoming power at unit. Have meter available to confirm power across each pair, and each leg to ground

# **REPLACEMENT PARTS PROCEDURE**

**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 MOTOR**

1. Remove cabinet left-side panel (when looking at the front of the unit).
2. Evaporator fan motor—disconnect evaporator motor wires from evaporator fan capacitor and power module.
3. **For all model sizes 12, 18, 24, and 36**, remove the screws securing motor and inlet-ring to blower housing (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 model 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 (THERMOSTAT)**

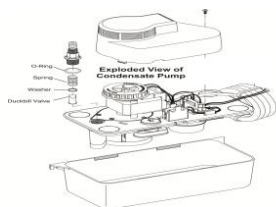
To replace cooling thermostat, remove left side panel to access controller assembly. Using a 5/16" nut driver, remove (2) nuts on threaded studs, unplug the display cable, and lift up to remove the controller. Plug display cable in the new controller, and secure in place.

## **C. POWER MODULE**

To remove the power module, remove the rear control box cover. Disconnect wires (one at a time), and re-attach each wire, while holding replacement module in other hand. Once all wires have been reconnected in accordance with the wiring diagram, install new power module.

## **D. CONDENSATE PUMP**

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



## **E. HIGH PRESSURE SAFETY SWITCH**

1. Remove cabinets right side panel, or right rear side panel of Model 60.
2. Remove flare nut that secures capillary to the refrigeration system high pressure side. A schrader valve is located in the discharge port which allows removal without losing the refrigerant charge.
3. Remove two screws that secure high pressure switch.
4. Pin Connectors:
  - a. If existing switch has 2 pin connector, remove old switch and plug n' play new switch.
  - b. If existing switch does not have 2-pin connector, connect female harness and splice on blue leads with control circuit wires..
5. Install new High Pressure Switch, and reverse steps in order to complete the procedure.



*To gain access to compressor and compressor run capacitor, remove left hand side panel.*

# **PREVENTIVE MAINTENANCE**

OWC QC is 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:

## **OFF SEASON STORAGE—WINTERIZATION**

Before placing the unit into storage for the off-season, it is recommended to thoroughly clean the unit, and remove all water in the CONDENSER COIL, WATER LINES, DRAIN PAN and CONDENSATE PUMP to avoid damage to the unit from freezing water or contamination.

## **DRAINING THE CONDENSER COIL, AND INTERIOR WATER LINES**

To drain the condenser coil, detach the WATER IN and WATER OUT lines. Using a Shop-Vac or similar device, vacuum the WATER OUT line and start the unit. The water valve will open, allowing you to vacuum the water out of the condenser coil. Eventually, the High Pressure Cut-Out will shut down the compressor. Wait 15 minutes, depress the HI-PRESSURE RESET and repeat this process until ALL of the water is out of the system. When completed, depress the HIGH PRESSURE RESET one final time to make sure that it is reset.

## **DRAINING THE HOSE KIT**

To drain the hose kit, disconnect all hoses, connect lanyard fitting, and allow the hoses to gravity drain.

## **EVACUATING THE CONDENSATE PUMP**

Using a Shop-Vac or similar device, vacuum all water out of the condensate pump reservoir. Condensate pumps come standard on all OWC 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 pump assembly and check for obstructions. Clean as needed.
4. Clean the reservoir 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.

## **CLEANING THE UNIT**

Wash evaporator coil and allow the unit to dry completely.

## **BLOWER MOTOR**

The evaporator motor on all units have permanently lubricated bearings. No oiling is Necessary.

## **FILTER**

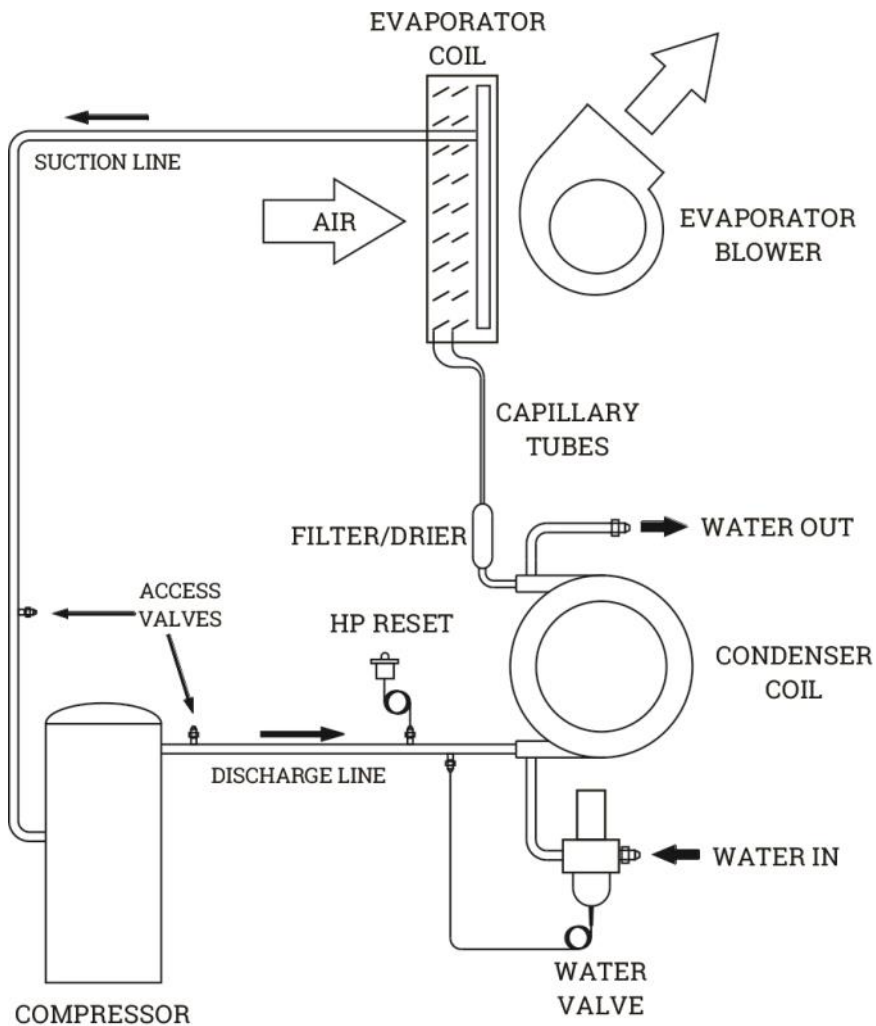
A clogged filter will cause the unit to operate at greatly reduced efficiencies. We recommend that the filter be inspected on a regular basis (**every six weeks or less**) depending on the environment. The evaporator filter is located behind the return air grille and can be easily removed and cleaned.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

## **GENERAL**

**Oceanaire products are NOT approved for outdoor use.** Therefore, off-season storage should be indoor, protected from weather conditions. *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



**PIPING SCHEMATIC**  
**Water-Cooled Spot Cooler**

# THREE PHASE MONITOR

Oceanaire Three-Phase units are be equipped with phase monitors for compressor motor protection. The Three-phase Monitor safeguards the compressor against phase reversal, phase imbalance and/or phase loss. The monitor is installed in the control box and is equipped with LEDs for diagnosis of electrical conditions (see diagrams below).

When power is connected and the unit is turned on at the thermostat, the thermostat start delay will commence. Once the thermostat start delay has timed out, the compressor will start. If the compressor does not start, remove the control box cover to observe the LEDs in the Phase Monitor. The LEDs will signal the following:

## Three Phase Monitor - ICM401/ICM402

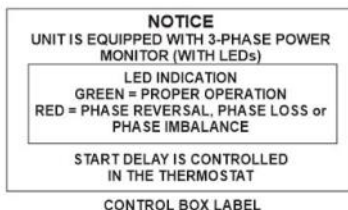
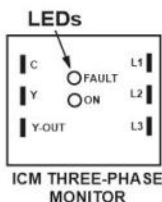
### ICM401 - Standard Series

### ICM402 - Deluxe Series

GREEN - ON (Proper Operation) The compressor contactor is energized.

RED - FAULT CONDITION Correct the issue with the incoming power and re-start the unit. The Phase Monitor will not allow the compressor to start until the power FAULT is corrected.

In the event of a power interruptions or changes, the Phase Monitor will change state accordingly and will remain in FAULT until the power condition is corrected.



## THREE PHASE MONITOR - SSAC - For Service/Replacement Market

025-045 (208/230v)

025-046 (460 v)

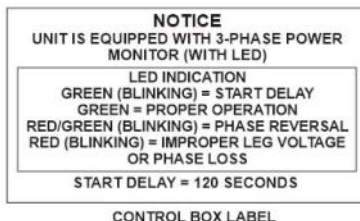
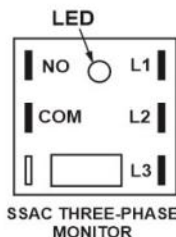
GREEN-BLINKING - Start delay, up to 120 sec.

GREEN - Proper Operation

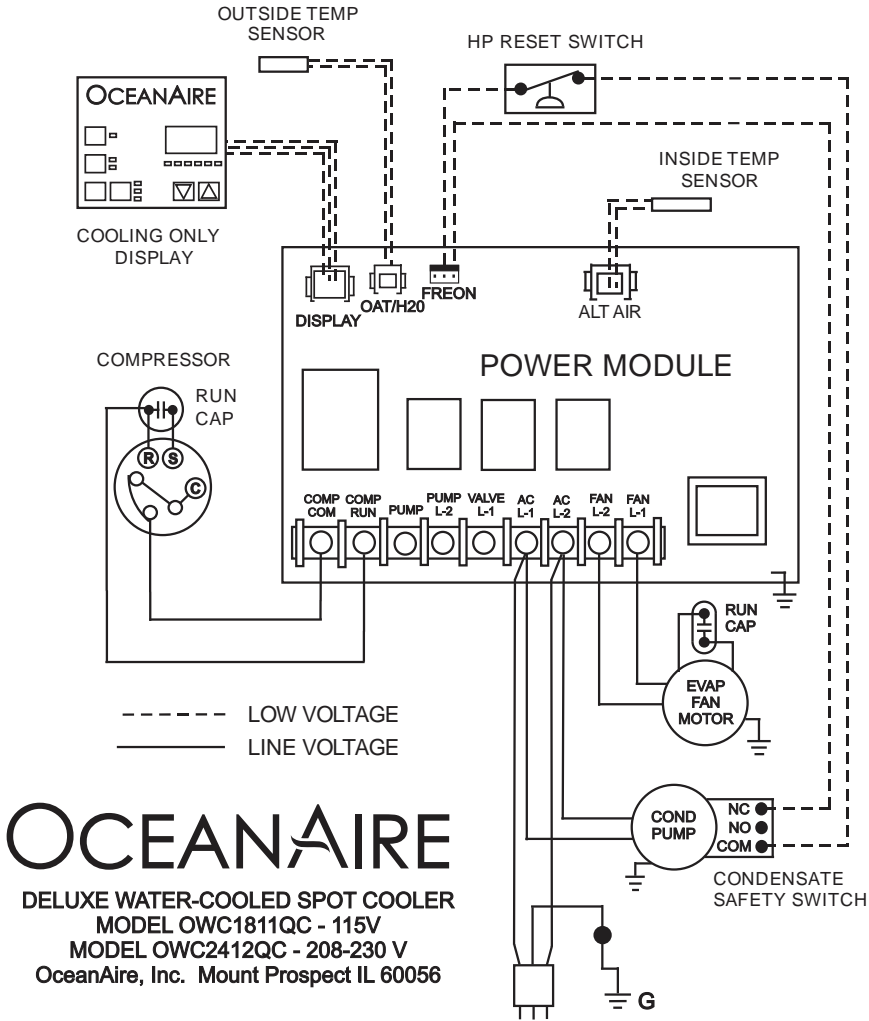
RED/GREEN-BLINKING - signals reverse phase rotation. Switch any two of the power leads for the unit, NOT THE MONITOR LEADS, and re-start.



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.

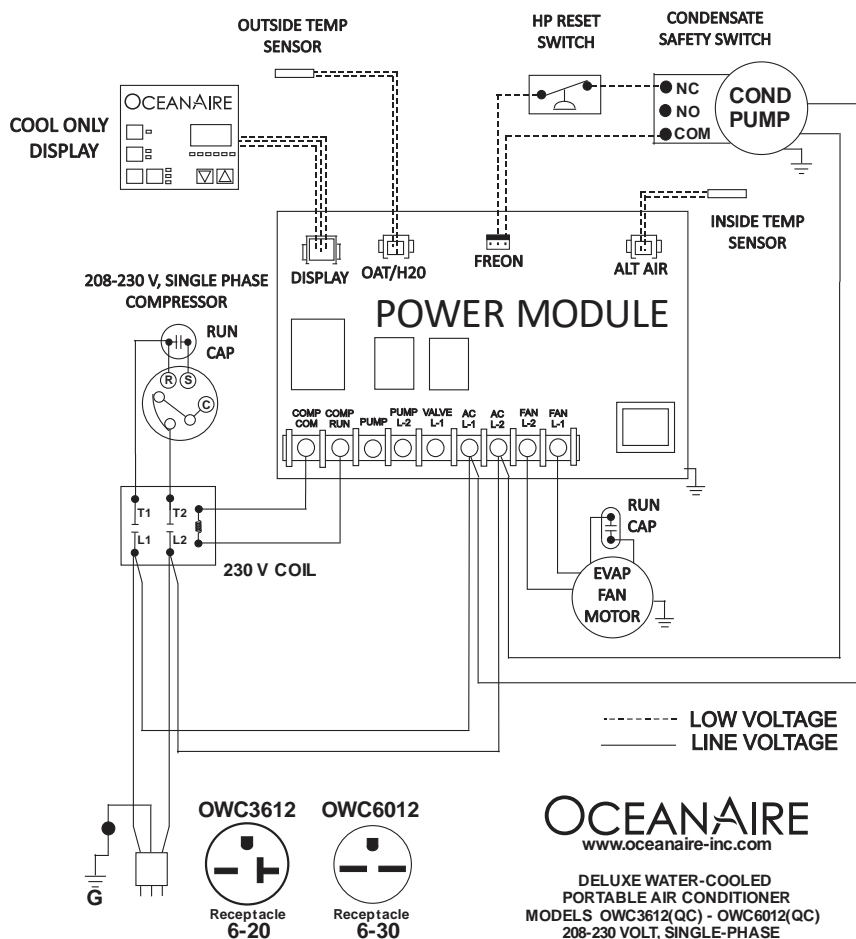


# WIRING SCHEMATIC FOR OWC1811QC and OWC2412QC



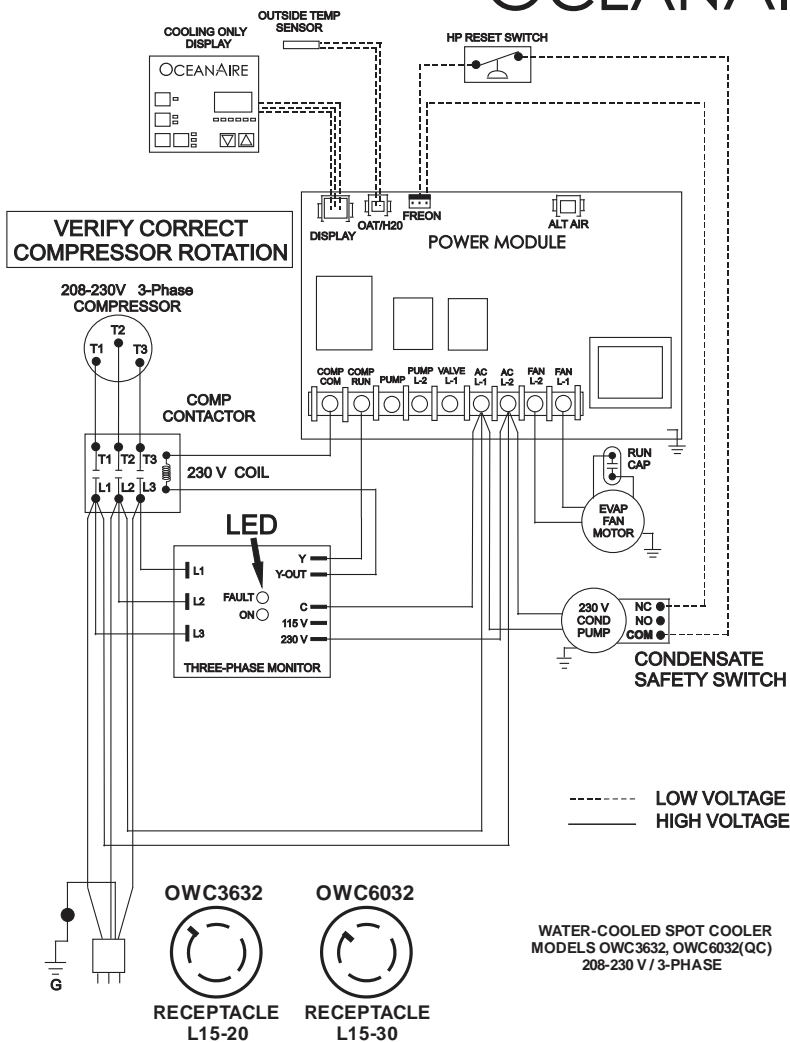
UNIT/MODEL	PLUG CONFIGURATION	RECEPTACLE
115 VOLT OWC1811QC	 15A-125 VOLT NEMA 5-15P	NEMA 5-15R
208-230 VOLT SINGLE PHASE OWC2412QC OWC3612QC	 20A-250 VOLT NEMA 6-20P	NEMA 6-20R

# WIRING SCHEMATIC FOR OWC3612QC and OWC6012QC



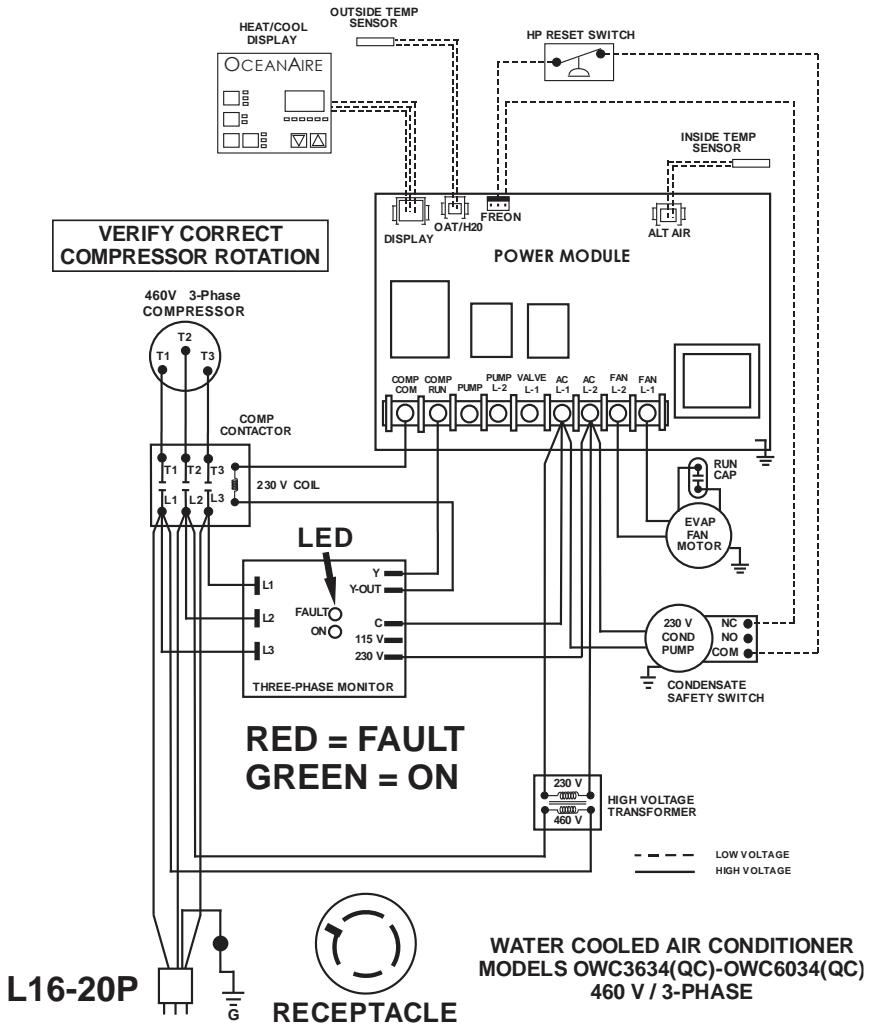
# WIRING SCHEMATIC FOR OWC3632QC and OWC6032QC

# OCEANAIRE



# WIRING SCHEMATIC FOR OWC3634QC and OWC6034QC

# OCEANAIRE



## **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 Product is shown to have a defect in materials 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.

***Compressor warranty shall be pro-rated for years 2 – 5 at the sole discretion of Oceanaire.*** 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 to:

- a) Product that 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) Product that has been subjected to any abnormal power conditions such as loss of power, power surges, voltage irregularities such as brown-outs or phase loss on three-phase equipment).
- c) any expenses, including labor or material, incurred during removal or reinstallation of the Product.
- d) any workmanship of the installer of the Product.

This limited warranty is conditional upon:

- a) return to the Manufacturer, of the 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.
- b) determination in the reasonable opinion of the Manufacturer, that there exists a defective 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 EXPRESSED 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.

## END USER INFORMATION

MODEL: \_\_\_\_\_

SERIAL NUMBER: \_\_\_\_\_

Date Purchased: \_\_\_\_\_

Purchased from: \_\_\_\_\_

Date Installed: \_\_\_\_\_

For Technical Support or service parts,  
contact our **Keep Cool Team**  
**at 847-583-0311**

In order to receive the benefits of our warranty,  
please register on-line at  
**[www.oceanaire-inc.com](http://www.oceanaire-inc.com)**



# OCEANAIRE

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