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# 2OAC1211 & 2OACH1211 1-Ton Portable Spot Cooler and Heat Pump

## ENGINEERING, INSTALLATION AND SERVICE MANUAL



*Heating &  
Cooling*



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# **FORWARD**

This manual provides the user with basic details for the installation and operation of the OceanAire 2OAC(H)1211 units. It is recommended to read and fully understand the instructions outlined within this manual, before operating the 2OAC(H)1211 unit.

As with all commercial air conditioning equipment, it is recommended to have the 2OAC(H)1211 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.

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 2OAC(H)1211 unit before contacting the factory.

## **GENERAL INFORMATION**

The OceanAire 2OAC(H)1211 is a portable, air-cooled heat pump designed for permanent or temporary spot cooling or heating applications. The entire unit has been built in a premium sheet metal cabinet, equipped with heavy-duty casters for mobility. All 2OAC(H)1211 models come standard with an LCDI power cord for electrical connection and added mobility in service. These units direct heated/cooled air to specific areas or objects through a discharge grille located on the upper-front of the unit, while rejecting cooled/heated air from the top of the unit. The 2OAC(H)1211 model will satisfy most space cooling or heating requirements.

The 2OAC(H)1211 is a self-contained unit with the entire system (evaporator and condenser blower assemblies, electrical and refrigeration components), neatly arranged in a gray and blue polyester powder coated metal cabinet. When connected to the proper source of electrical power, the 2OAC(H)1211 is controlled by a Deluxe electronic controller, with numerous options of temperature and airflow controls that will provide the desired level of comfort when cooling or heating.

A wide variety of accessories and factory-installed options are available for the 2OAC(H)1211 units allowing for improved performance and added versatility.

## **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**

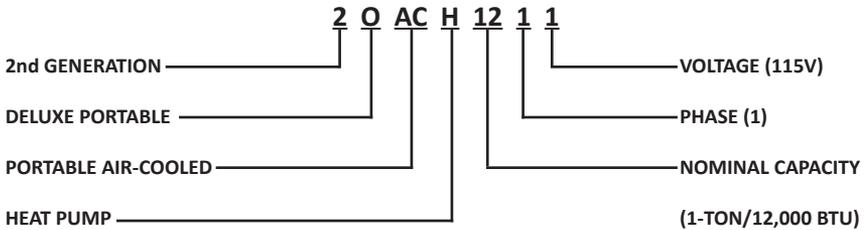
It is important that the warranty card be filled out completely and returned to the factory within fourteen (14) days of installation of the unit in order to receive the benefits of the warranty.

## NOTICE

### NOT APPROVED FOR OUTDOOR USE

Unit will not operate at full capacity when run outdoors, and exposure to elements may result in immediate or premature component failure.

## NOMENCLATURE



## CAPACITY RATING

12.....12,000 BTU/HR

COOLING CAPACITY	11,800 BTUH
HEATING CAPACITY	11,000 BTUH
VOLTAGE	115V, 60Hz, 1PH
AMPS	11.6
TOTAL WATTS	1180
IN RUSH AMPS	60
PLUG TYPE	5-15P, LCDI
EER	10
COMPRESSOR	ROTARY
COMPRESSOR LRA	57
EVAP CFM HIGH	400
EVAP MOTOR AMPS	1.2
COND CFM	600
COND MOTOR AMPS	1.2
CONDENSATE TANK (PUMP OPTIONAL)	5 GALLON
REFRIGERANT CHARGE (R454b)	19oz
HEIGHT	38.7"
WIDTH	20.0"
DEPTH	26.7"
NET WEIGHT	180LB



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SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Cooling Capacity is total BTUH at 80°DB/67°WB return air, 95°F Outdoor at high fan speed

Heating Capacity is total BTUH at 70°DB/60°WB indoor, 47°DB/43°WB Outdoor.

Dedicated Circuit and Time Delay fuses/circuit breakers are recommended. EER is determined at high fan speed, with condenser discharge air ducted into another area.

CFM with free discharge

Amps and Watts at 115 Volts.

COOLING AMBIENT    OPERATING RANGE 60°F TO 105°F  
HEATING AMBIENT    OPERATING RANGE 40°F TO 105°F

## STANDARD FEATURES

**CABINET:** The 2OAC(H)1211 Series has a cabinet that is constructed of 18 gauge steel with a polyester, powder-coated finish that will compliment any decor. The cool blue front compliments any surrounding space, and is equipped with sound-absorbing installation for quiet comfort. All units come equipped with handles and premium swivel casters for portability and convenient set-up.

**DELUXE ELECTRONIC CONTROLLER:** Each 2OAC(H)1211 unit is equipped with a deluxe electronic controller. When the unit is connected to power, the controller will prompt the unit to cool/heat a space to the desired temperature. The controller is also capable of setting the fan to operate automatically when needed, or continuously.

**FAN SPEED CONTROL:** One of the features of the Deluxe Electronic Controller is that the unit supply air fan can be controlled either automatically or manually. In "AUTO" mode, the indoor blower will adjust air flow automatically for added comfort and performance. The controller can also be set to "MANUAL" fan mode, and the indoor blower will run continuously at one of six levels of fan speed.

**CONDENSATE TANK/PUMP:** The 2OAC(H)1211 unit comes equipped with a means for handling the condensate generated during the cooling/heating process. The tank can be easily removed from the unit and emptied as needed.

An optional automatic condensate pump (Part #: UPK-115) is available and can be factory installed. The pump comes with a 20 foot long vinyl hose that allows for the removal of the condensate to drain. The automatic pump is capable of a 20 foot vertical lift to handle almost any installation requirement.

**FILTERS:** All 2OAC(H)1211 units are equipped with washable filters at the air intakes. Electrostatic mesh air filters located behind the evaporator return grille serve to filter the air before it is cooled/heated, and behind the condenser return air grille to prevent dust build-up. Both filters can be easily removed and cleaned.

**HIGH PRESSURE SAFETY SWITCH:** Located on the back of the 2OAC(H)1211 unit is a manual reset high pressure switch used for the protection of the compressor. If the condensing pressure exceeds the limit setting, the switch will cycle the compressor off, while the evaporator fan remains running. The display will indicate the fault setting "ERR" + "HP-1". The compressor can be restarted once the condensing pressure has equalized by depressing the "RED RESET" button.

**POWER CORDS:** All 2OAC(H)1211 units come standard with a power cord for a convenient connection. It is equipped with LCDI for added safety.

## APPLICATIONS

### COOLING MODE — SPOT COOLER

The 2OAC(H)1211 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 when cooling an entire space isn’t practical. Cool air is discharged from the unit and is directed where it is needed. Nozzle can be installed for directional cooling applications.

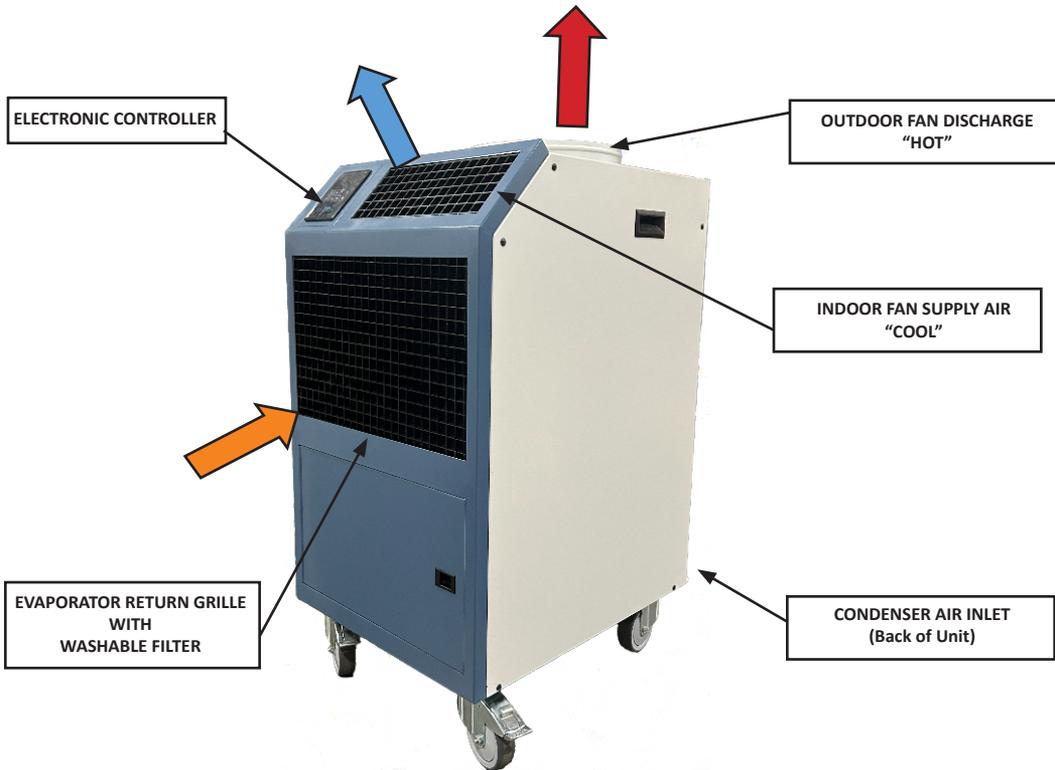
### AREA COOLER

When the 2OAC(H)1211 is installed in an open area, the condenser exhaust duct directs the warm air away from the space, allowing the evaporator air to cool the specific area.

### ROOM AIR CONDITIONER

When ducted properly, the 2OAC(H)1211 can be used as a room air conditioner to cool an enclosed space. Using the condenser return air plenum, additional ceiling kit, and other accessories, the 2OAC(H)1211 can then operate as a room air conditioner with the condenser air isolated from the conditioned space.

### 2OAC(H)1211 — COOLING MODE OPERATION / DESCRIPTION



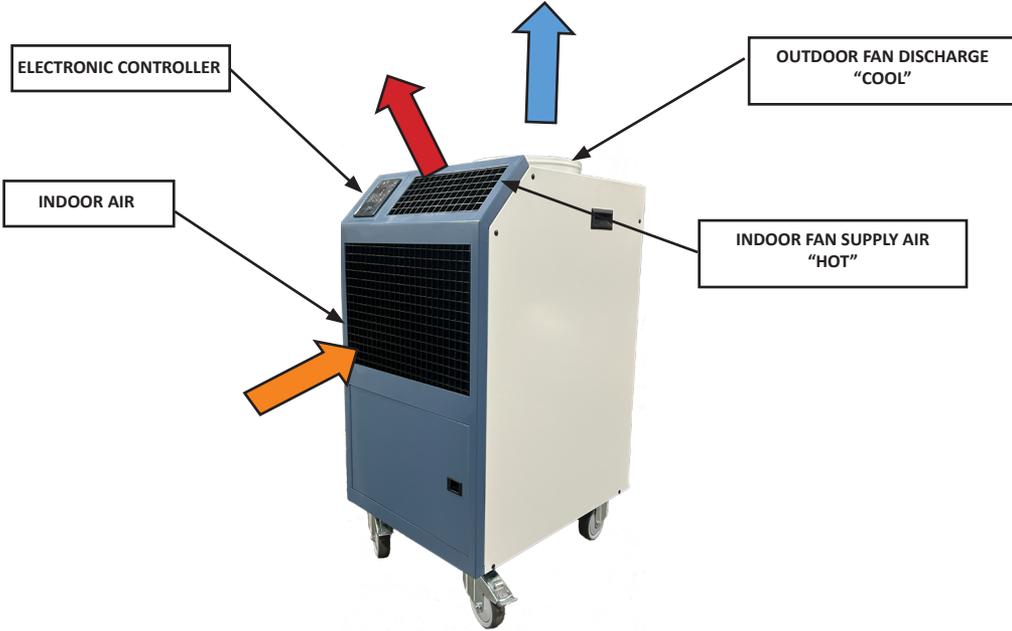
**2OAC(H)1211 — COOLING MODE**

## APPLICATIONS

### HEATING MODE—HEAT PUMP

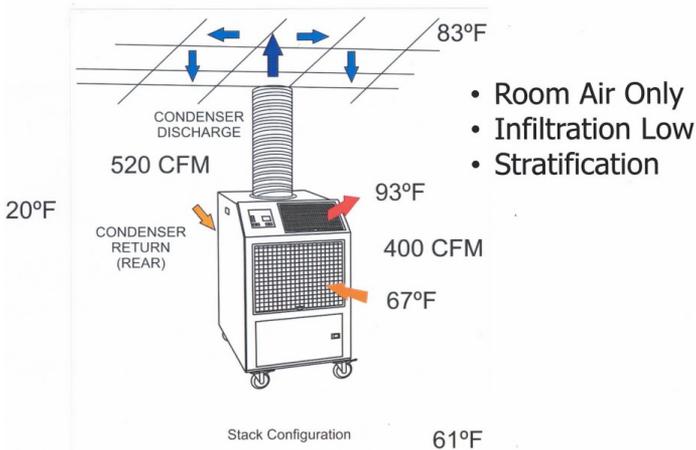
In HEAT mode, the 2OAC(H)1211 can be used in an open environment to provide heat to a specific area or “spots”. The 2OAC(H)1211 is a heat pump, and the supply air will feel warm but not extremely hot to the touch. Nozzle kits can be used for directional heating.

### 2OAC(H)1211 — HEATING MODE OPERATION/DESCRIPTION



**2OAC(H)1211 — HEATING MODE**

### HARD-Stack Configuration



## ELECTRICAL CONFIGURATION

### SERVICE CORD

All 2OAC(H)1211 units are equipped with a standard LCDI service cord with plug configuration and receptacle requirements as shown in this chart. The LCDI (Leakage Current Detection & Interruption) device serves as a means of electrical protection.

UNIT / MODEL	PLUG CONFIGURATION	RECEPTACLE
115 VOLT 2OACH1211	 15A-125 VOLT NEMA 5-15P	NEMA 5-15R

### **CAUTION**

**DO NOT USE THE LCDI AS AN ON/OFF SWITCH FOR THE UNIT. USING CORD AS ON/OFF SWITCH MAY RESULT IN DAMAGE TO THE UNIT/COMPONENTS OR MINOR PERSONAL INJURY.**

### **WARNING**

**A DAMAGED LCDI POWER SUPPLY CORD MUST BE REPLACED WITH A NEW POWER SUPPLY CORD AND NOT REPAIRED. FAILURE TO REPLACE THE CORD MAY RESULT IN ELECTRICAL SHOCK LEADING TO INJURY OR DEATH.**

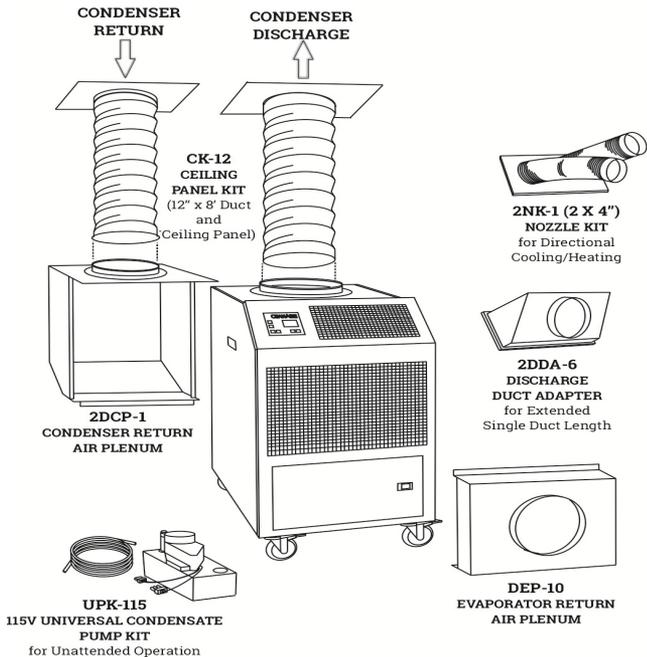
### **CAUTION**

#### **USE OF EXTENSION CORDS**

**FOR MODEL 2OAC(H)1211 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)**

## 2OAC(H)1211 OPTIONAL ACCESSORIES

**NOTE - IT IS IMPORTANT TO SPECIFY THE SERIAL NUMBER WHEN ORDERING ACCESSORIES**



### NOZZLE KIT, 2NK-1 (2x4")

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 equipment.

### EVAPORATOR RETURN AIR PLENUM, DEP-10

The evaporator return air plenum is available for installations where it is required to duct air to the inlet of the evaporator. The evaporator return air plenum allows the user to connect the round duct (flexible or rigid) to the return air intake to reduce air noise and increase the number of options for solving difficult application problems. The plenum attaches to the front of the unit, replacing the return air grille.

### DISCHARGE DUCT ADAPTER, 2DDA-6

Discharge duct adapter is 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 2DDA-6 is attached in the grille opening.

### CONDENSATE PUMP KIT, UPK-115

A plug-in condensate pump kit is available for applications where emptying the 5 gallon condensate tank is not practical. The pump kit consists of a condensate pump with mounting hardware and electrical connections, along with the tubing required for the drain and discharge of the condensate.

### CEILING PANEL DUCT KIT, CK-12

A ceiling panel kit is available for discharging the condenser air above a drop ceiling. The ceiling panel duct kits are furnished with a white vinyl coated flexible duct that allows for convenient installation. A 2'X2' drop ceiling duct-panel is included to replace a 2'X2' drop ceiling panel where the connection is desired. The ceiling panel kit consists of 8 feet of flexible duct, and a 2'X2' lay-in ceiling panel.

### CONDENSER RETURN AIR PLENUM, 2DCP-1

Condenser return air plenums are available for installations where it is required to duct air to the inlet of the condenser. The plenum easily fits into place on the back of the unit, and is provided with a flange for connecting 12-inch flexible ducting. A condenser return air plenum can substantially reduce air noise and allow the unit to operate without drawing condenser air from the conditioned space.

# INSTALLATION INSTRUCTIONS

## RECEIVING INSPECTION

Upon receiving your 2OAC(H)1211 unit, inspect the packaging for any damage. All units are shipped on a skid, and packaged in a double-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.

## ELECTRICAL REQUIREMENTS

Check the nameplate data 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 proper NEMA receptacles, refer to "ELECTRONIC SERVICE PLUG CONFIGURATION" (pg. 8). When using extension cords, use the proper gauge cord, and check voltage to the unit.

### **NOTICE**

**TIME DELAY FUSES/CIRCUIT BREAKERS  
ARE RECOMMENDED TO AVOID  
DAMAGE TO THE UNIT**



### **CAUTION**

**OPERATING THE UNIT ON IMPROPER  
VOLTAGE WILL VOID THE WARRANTY.**

## ACCESSORIES

Verify that all accessories are correct for model, and are 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 clearance around the unit for future maintenance and/or service. Level the unit and lock casters. Connect power and test the LCDI on the power cord. Power on unit, via the electronic controller and check for proper operation. Refer to Electronic Controller Operation (pg. 12) for more details.

## DELUXE ELECTRONIC CONTROLLER

The 2OAC(H)1211 controller is equipped with many features for a more precise level of cooling and dehumidification operation. With the addition of a remote sensor, the controller can sense temperatures in another space or in ductwork. Sensing temperature overrides the temperature sensing bulb located behind the evaporator grille.



OceanAire DELUXE ELECTRONIC CONTROLLER

When the unit is plugged in, the Green Plug icon will illuminate, indicating that the unit is receiving power. Press the Power Button and the unit will display your unit Type, Refrigerant, and Model. Example: "H2O" for Water Cooled, "454" for 454b refrigerant, "1211" for Model number. When powered on, the controller will automatically check for correct line voltage being supplied to the unit. If a line voltage error is displayed ("ERR-PWR") have a certified electrician inspect the power at the outlet.

The system controls temperature within +/-2°F

# CONTROLLER BUTTON AND ICON TABLE

**POWER** – Turns the unit on/off when power is supplied

**MODE** – Toggles between Cooling, Dehumidification, and Heating. When desired mode is shown. Press the GEAR button to accept

**MODE SELECT** – Options Cooling, Heating, Auto or Dehumidify modes. With unit plugged in and powered on press the MODE button to toggle between Cool indicated by illuminated snowflake on controller, Heat indicated by three illuminated wavy red lines. Dehumidify indicated by illuminated water-drop, Auto Mode indicated by illuminated word “AUTO”. When desired mode is illuminated, press the GEAR button to accept.

**FAHRENHEIT / CELSIUS** – Controller can display temperature in Fahrenheit or Celsius.

**FAHRENHEIT / CELSIUS SELECT** – Press the THERMOMETER Button and MODE Button simultaneously to toggle between “F” and “C”. Controller display will illuminate “F” or “C”. When desired Temperature mode is illuminated, press the GEAR Button to accept

**SETPOINT TEMPERATURE** – In Cooling/Heating mode your 20AC(H) unit can be set to operate between 60°F(16C) and 85F (29C)

**SETPOINT TEMPERATURE ADJUST** – Press the UP-ARROW Button to increase the setpoint temperature in 1-degree increments. Press the DOWN-ARROW Button to decrease the setpoint temperature in 1-degree increments. Controller display will show setpoint temperature change with each button press, when desired setpoint is shown no further button press required controller will automatically accept the new setpoint temperature.

**FAN SPEED** – You can set your 20AC(H)1211 to operate in AUTO fan speed mode or MANUAL fan speed mode. Manual fan speed mode has six fan speed selections

**FAN SPEED MODE SELECT** – Press the FAN Button to toggle between AUTO fan speed and Manual fan speed levels. For AUTO, press the FAN Button until “AUTO” illuminates next to the fan speed indicator bar. Press the GEAR Button to accept. For MANUAL fan speed, press the FAN Button until “MANUAL” illuminates next to the fan speed indicator bar. The first bar on the speed indicator will illuminate. This is fan speed 1. Fan speed will advance through all 6 speeds with each FAN Button press. When desired fan speed is reached, press the GEAR Button to accept. With the unit plugged in and powered off you can set the evaporator fan to continuous run or auto cycle run. To accept the desired running mode, press and hold the fan icon button, display CON, press up arrow to advance to CYL, and press gear icon.

**ALARM / ERROR** – In the event of a system ALARM or ERROR, the controller will display an ERROR message and the ALARM beeper will sound. To silence the alarm, press the ALARM Button. See ERROR CODE TABLE for list of error codes, system responses and required action.

**TEMPERATURE DISPLAY PROBE SELECT**— Press the Thermometer Button to cycle through the four temperature display modes. The controller will cycle through the four options and the icon at the top of the controller will illuminate . “INSIDE” will display Ambient temperature, “DISCHARGE” will display discharge air temperature, “SETPOINT” will display unit setpoint temperature and “EXTERNAL” will display remote ambient temperature (if optional probe is installed). When the desired mode of temperature display is illuminated, press the GEAR Button to accept.

**Note:** Dehumidify Mode – Allowed to select on all unit types, Air-Cooled, Water-Cooled and Heat-Pump. “DHUM” will be displayed on the controller. No temperature is shown when in Dehumidification. If temperature probe four (TP-4) is reading greater than 60°F on the evaporator fan, the Condenser fan (if equipped) and compressor will turn on, and a 15-minute timer will start. The Evaporator and Condenser fan will remain on at fan speed #1. At the end of the 15-minute timer, if TP-4 is above 60°F, the cycle will repeat. If TP-4 is reading below 60°F, the fans will remain on, the compressor will remain off, and the 15-minute timer will restart. This cycle will repeat until the unit is taken out of Dehumidify Mode.

**Note:** When in MANUAL fan speed mode your 20ACH may change fan speed to protect the unit’s compressor.

CONTROLLER BUTTONS		CONTROLLER ICONS	
	POWER BUTTON		POWER = Indicates unit is plugged in
	MODE BUTTON		HEAT MODE = Indicates unit is in heat mode
	THERMOMETER BUTTON		AUTO MODE = Indicates unit is in AUTO cool/heat mode
	ALARM/BEEPER BUTTON		COOL MODE = Indicates unit is in cooling mode
	UP / DOWN ARROW BUTTON		DEHUMIDIFY MODE = Indicates unit is in dehumidification mode
	FAN SPEED BUTTON		WARNING = Indicates unit is in alarm or error mode
	GEAR BUTTON		FAN SPEED = Indicates level of fan speed in manual mode
			AUTO FAN MODE = Indicates unit is in auto adjust fan speed
			MANUAL FAN MODE = indicates unit is in manual select fan speed
			FAHRENHEIT MODE = Indicates unit temperature is set to F
			CELSIUS MODE = Indicates unit temperature is set to C
			TEMPERATURE DISPLAY = Controller will display Ambient temperature
			TEMPERATURE DISPLAY = Controller will display Evaporator discharge air temperature
			TEMPERATURE DISPLAY = Controller will display user setpoint temperature
			TEMPERATURE DISPLAY = Controller will display Ambient temperature at remote probe if installed

# ALARM/ERROR CODES

ERROR CODE	ERROR TITLE	ERROR CONDITION	SYSTEM RESPONSE	CORRECTIVE ACTION
ERR + MC	Machine Control Circuit	MC detects an internal circuit failure that prevents it from operating properly	Display ERR + MC, Sound Alarm, unit will not operate	Contact OceanAire Tech Support
ERR + UI	User Interface Circuit	UI detects an internal circuit failure that prevents it from operating properly	Display ERR + UI, Sound Alarm, unit will not operate	Contact OceanAire Tech Support
ERR + COMM	UI/MC communications error	UI is unsuccessful at communicating with the MC	Display ERR + COMM, Sound Alarm, unit will not operate	Contact OceanAire Tech Support
ERR + USB	Universal Serial Bus	USB download unsuccessful	Display ERR + USB	Contact OceanAire Tech Support
ERR + PWR	Line Voltage Out of Range	non-3-Phase power voltage at end user receptacle is out of range	Display ERR + PWR, Sound Alarm, unit will not operate	Contact OceanAire Tech Support. Have certified Electrician check building power / receptacle(s)
ERR + TP-1	Temperature Sensor #1	Controller is not receiving sensor signal	Display ERR + TP-1, Sound Alarm, unit will continue to operate	Contact OceanAire Tech Support, Replace TP-1
ERR + TP-2	Temperature Sensor #2	Controller is not receiving sensor signal	Display ERR + TP-2, Sound Alarm, unit will continue to operate	Contact OceanAire Tech Support, Replace TP-2
ERR + TP-3	Temperature Sensor #3	Controller is not receiving sensor signal	Display ERR + TP-3, Sound Alarm, unit will continue to operate	Contact OceanAire Tech Support, Replace TP-3
ERR + TP-4	Temperature Sensor #4	Controller is not receiving sensor signal	Display ERR + TP-4, Sound Alarm, unit will continue to operate	Contact OceanAire Tech Support, Replace TP-4
ERR + TP-5	Temperature Sensor #5	Controller is not receiving sensor signal	Display ERR + TP-5, Sound Alarm, unit will continue to operate	Contact OceanAire Tech Support, Replace TP-5
ERR + HP-1	High Pressure Switch	High Pressure Switch reads pressure that exceeds the maximum allowed	Display ERR + HP-1, Sound Alarm, unit will not run until pressure is in operating range	Manually Reset High Pressure Switch. Contact OceanAire Tech Support if ERROR persists
ERR + LP-1	Low Pressure Switch	Low Pressure Switch reads pressure below minimum allowed	Display ERR + LP-1, Sound Alarm, unit will not run until pressure is in operating range	Contact OceanAire Tech Support
ERR + LDET	Refrigerant Leak Detected	Leak in Refrigeration System	If equipped, Display EER + LDET, Sound Alarm Refrigeration Shut Down, All unit fans turn on	Contact OceanAire Tech Support
FULL - TANK	Condensate	Condensate tank pump reservoir is full	Display FULL + TANK, Sound Alarm, unit will continue to operate	Power off unit and un-plug, Remove condensate tank and empty, replace empty tank, plug in unit and power on

## **NOTICE**

**DO NOT REMOVE ANY UNIT PANELS OR ATTEMPT ANY SELF REPAIR. CONTACT OCEANAIRE TECH SUPPORT.**

**ALL REPAIRS SHOULD BE MADE BY A CERTIFIED/  
LICENSED ELECTRICIAN/HVAC SERVICE TECH**

# **PREVENTIVE MAINTENANCE**

20AC(H)1211 units are designed to last a long time and provide maximum performance and reliability with minimum maintenance. To prolong the life of the unit, routine service 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 greatly reduce the efficiency of the unit. We recommend that filter(s) 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 condenser filter is located on the backside of the unit, 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. Finish by rinsing the filters clean with hot water, and shaking excess moisture from them.

## **CONDENSATE PUMP (OPTIONAL)**

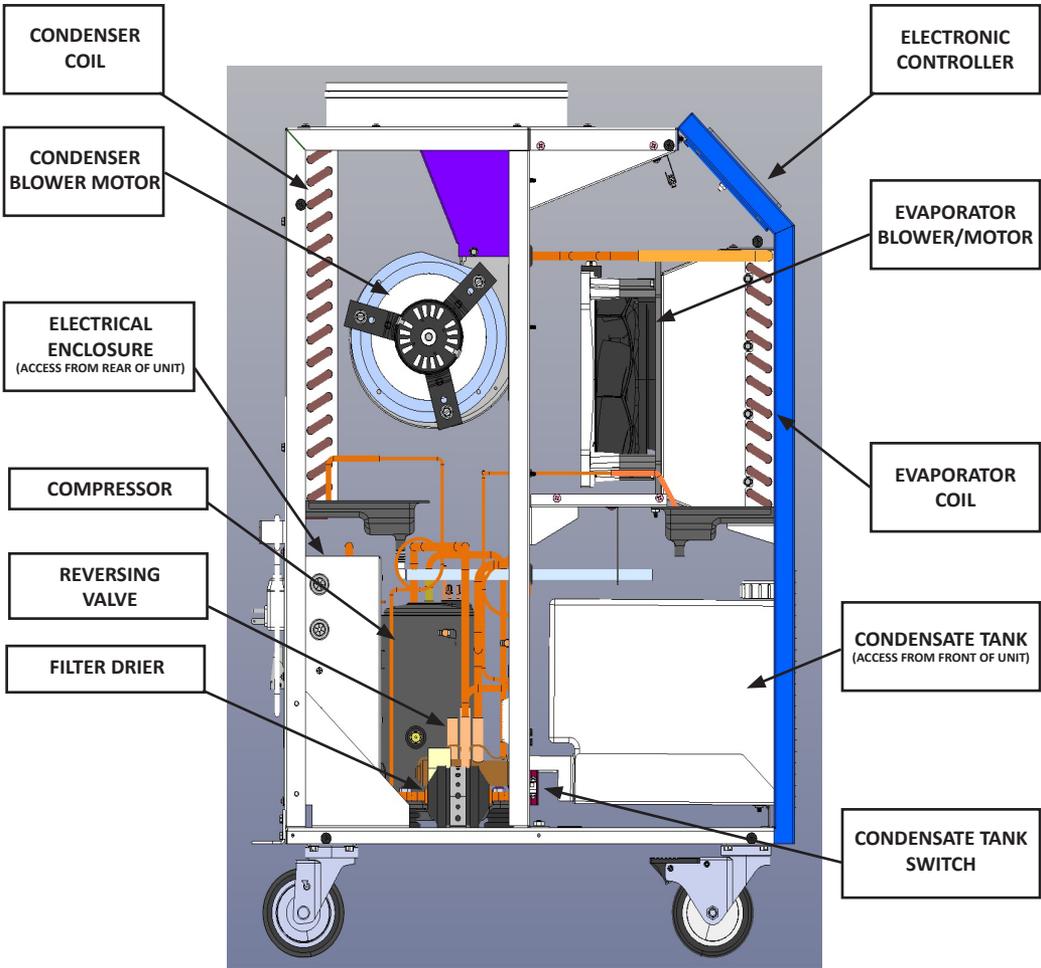
When servicing pump follow these steps:

1. Make certain that the unit is disconnected from the power source before attempting to service or remove any component.
2. Remove pump assembly
3. Be sure that floats move freely. Clean as necessary.
4. Remove pump housing and check for obstructions.
5. Clean the reservoir with warm water and mild soap when mineral deposits are visible.
6. Check the inlet and outlet piping. Clean as necessary. Be sure there are no kinks in the lines that would restrict flow.
7. If needed, remove and inspect check valve barbed fitting for obstruction debris. Clean as necessary.
8. Reinstall pump assembly.

## **GENERAL**

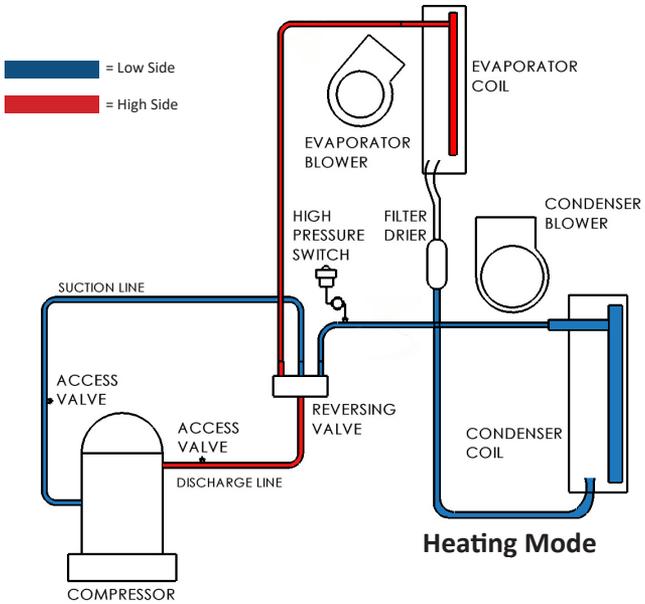
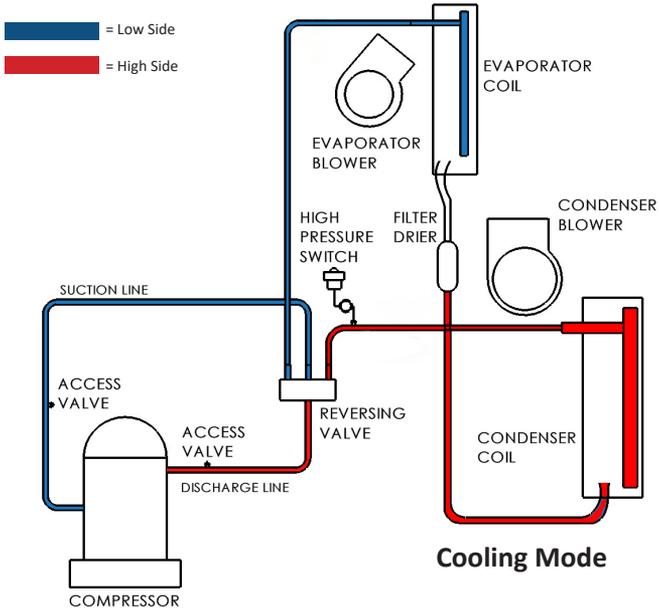
When necessary maintenance steps as outlined above are followed, the air conditioner will provide long and reliable service. The refrigeration and electrical circuits of the system should only be serviced by a fully qualified service technician.

# 2OAC(H)1211 INTERIOR VIEW

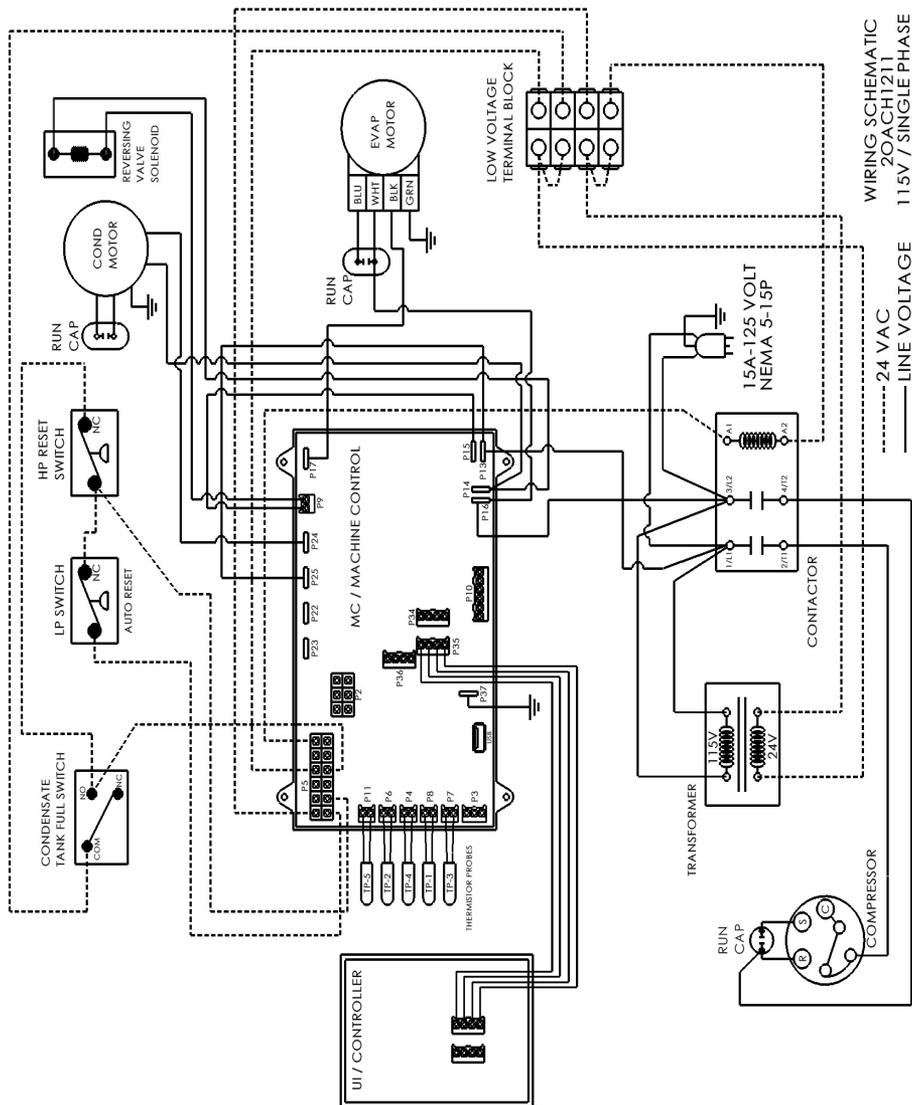


**Note: Reversing valve only on 2OACH1211 Heat Pump Units**

# 2OACH1211 PIPING SCHEMATIC



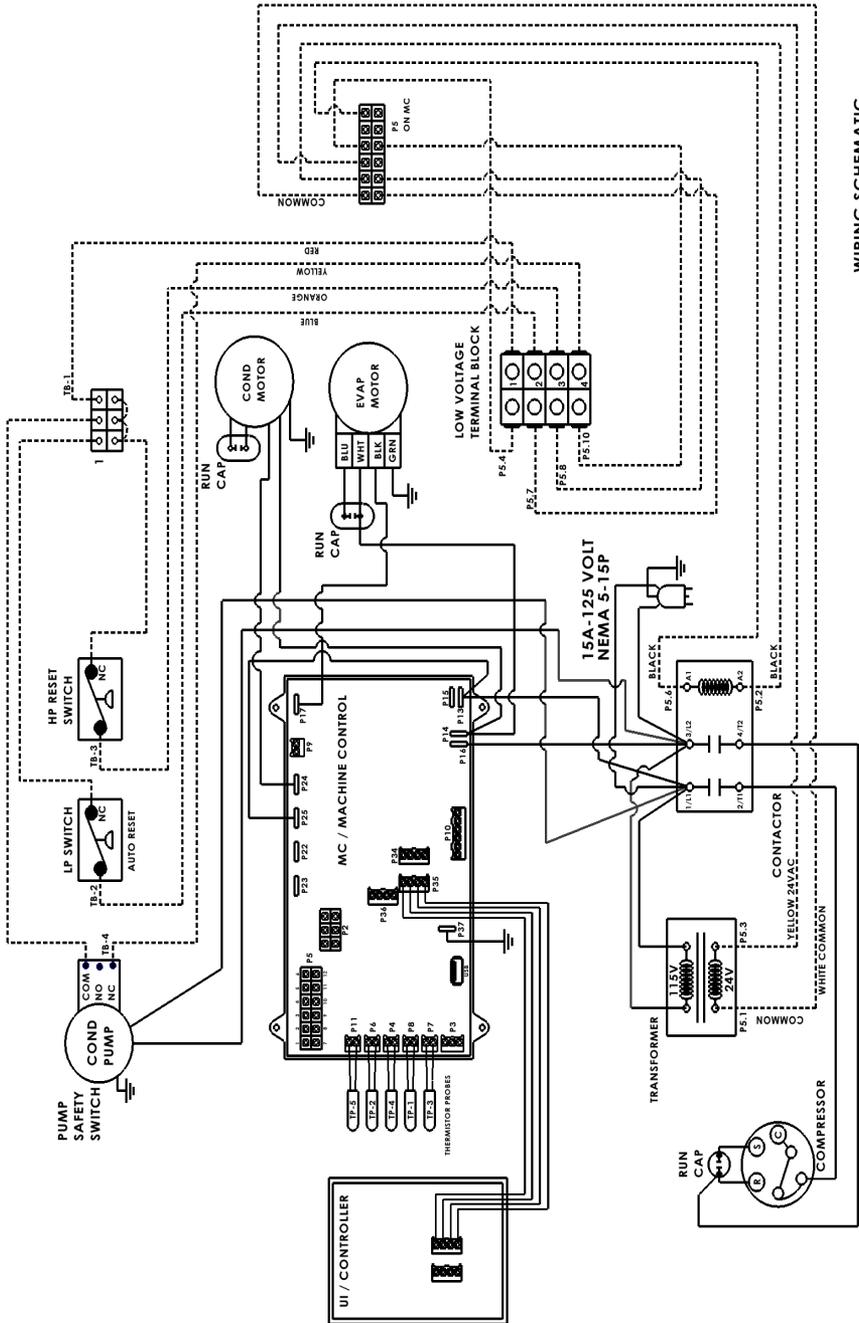
# 2OACH1211 WIRING DIAGRAM



WIRING SCHEMATIC  
2OACH1211  
115V / SINGLE PHASE

24 VAC  
LINE VOLTAGE

# 2OAC1211 WIRING DIAGRAM



----- 24 VAC  
 ----- 115V / SINGLE PHASE  
 ----- LINE VOLTAGE

WIRING SCHEMATIC  
 2OAC1211

# **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 material 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 the five year limited warranty of the compressor are included in the one year limited warranty, but not 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 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 approval from the Manufacturer. All returns must be freight prepaid.
- B) 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 EXPRESSED OR IMPLIED, AND ALL SUCH OTHER WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANT ABILITY 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 OF 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 JURISDICTION.**

**⚠️ WARNING**

Failure to adhere to described instructions may result in serious injury or death.

**NOTICE**

Failure to adhere to instructions below may result in immediate or premature component failure.

## ADDITIONAL SAFETY WARNINGS AND NOTICES

Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.

The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).

Do not pierce or burn.

Be aware that refrigerants may not contain an order.

Keep any required ventilation openings clear of obstruction.

Servicing shall be preformed only as recommended by the manufacturer.

Ducts connected to an appliance shall not contain a POTENTIAL IGNITION SOURCE.

For appliances using A2L REFRIGERANTS connected via an air duct system to one or more rooms, the supply and return air shall be directly ducted to the space. Open areas such as false ceilings shall not be used as a return air duct.

The appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervised not to play with the appliance.

For unit operation, minimum permissible distance to adjacent structures, See figure on page 7 of this manual. Additional clearance may be required when using duct adapter kits.

It is not recommended to use the unit at elevations above 7,000 feet.

**WARNING**

Failure to adhere to described instructions may result in serious injury or death.

**NOTICE**

Failure to adhere to instructions below may result in immediate or premature component failure.

**INFORMATION ON SERVICING**

**CHECKS TO THE AREA:** Prior to beginning work on systems containing FLAMMABLE REFRIGERANTS, safety checks are necessary to ensure that the risk of ignition is minimized.

**WORK PROCEDURE:** Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapor being present while the work is being performed.

**GENERAL WORK AREA:** All maintenance staff and others working in the local area shall be instructed on the nature of the work being carried out. Work in confined spaces shall be avoided.

**CHECKING FOR PRESENCE OF REFRIGERANT:** The area shall be checked with an appropriate refrigerant detector prior to, and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.

**PRESENCE OF A FIRE EXTINGUISHER:** If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available at hand. Have a dry powder or CO2 fire extinguisher adjacent to the charging area.

**NO IGNITION SOURCES:** No person carrying out work in relation to a REFRIGERATING SYSTEM which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of a fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. A "NO SMOKING" sign shall be displayed.

**VENTILATED AREA:** Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

**CHECKS TO THE REFRIGERATING EQUIPMENT:** Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance. The following checks shall be applied to installations using

**FLAMMABLE REFRIGERANTS:**

**R-454B  
A2L**

- The actual REFRIGERANT CHARGE is in accordance with the room size within which the refrigerant containing parts are installed
- The ventilation machinery and outlets are operating adequately and are not obstructed
- If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant
- Marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected

Refrigerating pipe or components are to be installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

**CHECKS TO ELECTRICAL DEVICES:** Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties advised.

**WARNING**

Failure to adhere to described instructions may result in serious injury or death.

**NOTICE**

Failure to adhere to instructions below may result in immediate or premature component failure.

## INFORMATION ON SERVICING (CONTINUED)

Checks to Electrical devices (cont)

Initial safety checks shall include:

- The capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking
- That no live electrical components and wiring are exposed while charging, recovering or purging the system
- That there is continuity of earth bonding

**REPAIRS TO SEALED COMPONENTS:** During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. if it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point of a potentially hazardous situation. Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to the original specification, damage to seals, incorrect fitting of glands, etc. ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications. Sealed electrical components shall be replaced.

**REPAIR TO INTRINSICALLY SAFE COMPONENTS:** Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.

Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating. Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

**CABLING:** Check that the cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

**DETECTION OF FLAMMABLE REFRIGERANTS:** Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch or any other detector using a naked flame shall not be used.

The following leak detection methods are deemed acceptable for all refrigerant systems. Electronic leak detectors may be used to detect refrigerant leaks but, in the case of FLAMMABLE REFRIGERANTS, the sensitivity may not be adequate, or may need re-calibration. Detection equipment shall be calibrated in a refrigerant-free area. Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25% maximum) is confirmed. Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work. If a leak is suspected, all naked flames shall be removed/extinguished. If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated by means of shut off valves in a part of the system remote from the leak.

**REMOVAL AND EVACUATION:** When breaking into the refrigerant circuit to make repairs—for any other purpose—conventional procedures shall be used. However, for FLAMMABLE REFRIGERANTS it is important that the best practice is followed since flammability is a consideration. The following procedure shall be adhered to: Remove refrigerant; Purge the circuit with inert gas (optional for A2L): Evacuate (optional for A2L): Continuously flush or purge with inert gas when using flame to open circuit and open the circuit

**WARNING**

Failure to adhere to described instructions may result in serious injury or death.

**NOTICE**

Failure to adhere to instructions below may result in immediate or premature component failure.

## INFORMATION ON SERVICING (CONTINUED)

The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, refrigerant purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). When the final oxygen-free nitrogen charge is used, the system shall be vented to the atmospheric pressure to enable work to take place. The outlet for the vacuum pump shall not be close to any potential ignition sources, and ventilation shall be available.

**CHARGING PROCEDURES:** In addition to conventional charging procedures, the following requirements shall be followed. Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them. Cylinders shall be kept in an appropriate position according to the instructions. Ensure that the REFRIGERATING SYSTEM is earthed prior to charging the system with refrigerant. Label the system when charging is complete. Extreme care shall be taken not to overfill the REFRIGERATING SYSTEM. Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

**DECOMMISSIONING:** Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to reuse of recovered refrigerant. It is essential that the electrical power is available before the task is commenced. Become familiar with the equipment and its operation. Isolate system electrically. Before attempting the procedure, ensure that mechanical handling is available, if required, for handling refrigerant cylinders; all personal protective equipment is available and being used correctly; the recovery process is supervised at all times by a competent person; recovery equipment and cylinders conform to the appropriate standards.

Pump down the system, if possible. If a vacuum is not possible, make a manifold so that the refrigerant can be removed from various parts of the system. Make sure that the cylinder is situated on the scales before recovery takes place. Start the recovery machine and operate in accordance with instructions. Do not overfill cylinders, no more than 80% volume liquid charge. Do not exceed the maximum working pressure of the cylinder, even temporarily. When cylinders have been filled correctly and the process completed make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off. Recovered refrigerant shall not be charged into another REFRIGERATING SYSTEM unless it has been cleaned and checked.

**LABELING DECOMMISSIONED EQUIPMENT:** Equipment shall be labeled stating that it has been decommissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing FLAMMABLE REFRIGERANTS, ensure that there are labels on the equipment stating the equipment contains FLAMMABLE REFRIGERANT.

**RECOVERY:** When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely. When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labeled for that refrigerant, i.e. special cylinders for the recovery of refrigerant. Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs. The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant. If in doubt, the manufacturer should be consulted. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. The recovered refrigerant shall be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders. If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that the flammable refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from the system, it shall be carried out safely.

# END USER INFORMATION

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

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

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

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

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

**For Technical Support or Service parts,  
Contact our Keep Cool Team  
@ 847-583-0311**

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Please register online at**

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