



## **WHERE'S THE BEST LOCATION FOR AN AIR CONDITIONER ON MY BOAT?**

### **AIR CONDITIONING UNIT**

Westerbeke/Rotary Aire Marine Climate Control units are quite compact, and will fit in any one of several locations on a typical boat. Usual locations would be in a closet, under a berth, a helm station or a dinette seat. The major consideration in selecting the best location is to make sure the space is large enough to accommodate the ducting.

**DO NOT** install a self-contained air conditioner in the engine room or an area where fuel vapors may be present. Your local Westerbeke / Rotary Aire dealer would be pleased to make specific recommendations for your boat.

### **WATER PUMP**

The optimum location for the water pump is below the waterline. We recommend that a self-priming pump be used in a sailboat due to heeling. A self-priming pump should also be used in any boat if the pump cannot be installed below the waterline.

### **THERMOSTAT CONTROLS**

Digital control is standard. It provides complete system control and monitoring from a four-button keypad and digital display.

In areas where moisture is a chronic problem, you may set the control in a "HUMIDITY MODE" and the air conditioning unit will automatically dehumidify the area, drawing up to several quarts of moisture out of the atmosphere hourly.

The digital control automatically monitors air temperature, water temperature, line voltage, compressor current and fan speed. Operational failure modes are visually indicated by the service light on the panel. There is also special time-delay circuitry to prevent nuisance tripping of circuit breakers when cooling or heating cycles are reversed too quickly.

### **WESTERBEKE RELIABILITY**

Each Westerbeke/Rotary Aire Marine Climate Control System is manufactured by Westerbeke in its own factory to the company's own stringent marine standards. Units are designed to be as trouble-free as possible in the marine environment. Each unit is backed by a TWO-YEAR limited warranty, and supported by our worldwide distributor network for optimum customer support. Westerbeke has an established reputation for building world-class marine products for over 75 years.



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## WHICH CLIMATE CONTROL SYSTEM IS RIGHT FOR MY BOAT?

Westerbeke/Rotary Aire Marine Climate Control systems are available in two sizes -10,000 BTU and 17,000 BTU. Both of these units provide boat owners with year round climate control - air conditioning in hot weather, heat in cold weather, and can also act as a dehumidifier. Westerbeke units are designed so that two or more units can be connected and, with additional air outlets, can provide sufficient cooling capacity for most pleasure craft regardless of size.

### **CALCULATING BTU'S NEEDED**

Selecting the proper air conditioning unit for your boat is quite simple. You begin by calculating the total BTU's (British Thermal Units) needed for your boat.

1. Measure the area to be cooled. (Measure the length, width and the average cabin height in the area.)
2. Using these three dimensions, calculate the cubic footage of the area. (Multiply the length times the width times the average cabin height.) This is the area's cubic footage.
3. Multiply the resulting cubic footage by a BTU factor as follows:
  - a. For below deck areas, multiply the cubic feet by 14 for temperate climate (16 for tropical climate).
  - b. For topside or salon areas, multiply the cubic feet by 17 for temperate climate (19 for tropical climate).

Temperate climate defined as: max. air temp.  $\leq 95^{\circ}\text{F}$ , max. water temp.  $\leq 80^{\circ}\text{F}$ , humidity = moderate.

Tropical climate defined as: max. air temp.  $\leq 110^{\circ}\text{F}$ , max. water temp.  $\leq 100^{\circ}\text{F}$ , humidity = high.

The resulting number will show the minimum BTU's needed for each area measured.

### **EXAMPLE CALCULATION (Temperate Climate)**

Assume you want to air condition three different areas on a typical boat as indicated on the diagram below:

	<u>Area A</u>	<u>Area B</u>	<u>Area C</u>	
Length	7'	10'	10'	
Width	7'	10'	10'	
Avg. Height	6'	7'	6'	

Calculate the cubic footage:

$$\text{Area A: } (7' \times 7' \times 6' = 294) \quad \text{Area B: } (10' \times 10' \times 7' = 700) \quad \text{Area C: } (10' \times 10' \times 6' = 600)$$

Then, calculate the minimum BTU's needed for each area:

	<u>Cu. Ft.</u>	<u>BTU Factor</u>	<u>BTU Requirements</u>
Area A	294	x 14	= 4,116 BTU
Area B	700	x 17	= 11,900 BTU
Area C	600	x 14	= 8,400 BTU

Area A and B combined require a total of 16,016 BTU, and can be served by one 17,000 BTU model.

Area C requires 8,400 BTU and can be served by one 10,000 BTU model.

*Note: These are general guidelines - other factors such as windows, insulation, curtains etc. may affect these calculations.*

*BTU/hr ratings based on typical environmental conditions. Output may be reduced with extreme air or water temperatures.*