



# Baltimore Aircoil

## RCT-2000 COOLING TOWER

### RIGGING AND ASSEMBLY MANUAL

## INTRODUCTION

RCT-2000 Cooling Towers should be rigged and assembled as outlined in this bulletin. The procedures should be thoroughly reviewed prior to the actual rigging operation to acquaint all personnel with the procedures to be followed and to assure that all necessary equipment will be available at the job site. Be sure to have a copy of the certified drawing available for reference. If you need additional information about this unit, contact the local B.A.C. Representative using the phone number on the unit nameplate. The model number and serial number of the unit are listed on the nameplate.

## CHECK UNIT BEFORE RIGGING

When the unit is delivered to the job site, it should be checked thoroughly prior to signing the bill of lading to ensure all required items have been received and are free of any shipping damage. The following parts should be inspected:

- ⇒ Exterior Surfaces
- ⇒ Fan and Fan Shaft
- ⇒ Fan Shaft Bearings
- ⇒ Fan Motor
- ⇒ Sheaves and Belt Drive
- ⇒ Fan Guard
- ⇒ Water Distribution System
- ⇒ Wet Deck Surface (Fill)
- ⇒ Float Valve Assembly (if applicable)
- ⇒ Strainers (if applicable)
- ⇒ Drift Eliminators
- ⇒ Louvres
- ⇒ Miscellaneous Items: All bolts, nuts, washers and sealer tape required to assemble sections or component parts are furnished by B.A.C. and shipped with the unit. A checklist inside the envelope attached to the side of the unit marked "For Riggers" indicates what miscellaneous parts are included with the shipment and where they are packed.

## ANCHORING

**CAUTION:** Unit must be properly anchored in place before operation begins.

Holes suitable for M16 bolts are provided in the basin section for bolting the unit to the supports. Refer to the suggested support drawing for location of the mounting holes. The unit must be level for proper operation. Anchor bolts must be provided by others. Support beams must also be level. Shim if necessary to level unit.

## UNIT WEIGHTS

Before rigging any RCT-2000 unit, the weight of each section should be verified from the unit certified drawing.

**SAFETY WARNING:** Adequate precautions appropriate for the installation and location of this product should be taken to protect the public from possible injury & safeguard the equipment and the premises from damage. Operation, maintenance, & repair of this equipment should be undertaken only by personnel qualified to do so. Proper care, procedures, & tools must be used in handling, lifting, installing, operating, maintaining, & repairing this equipment to prevent personal injury and/or property damage.

**WARNING:** PVC eliminators on this product are not designed to support the weight of a person or to be used as storage or work surface for any equipment or tools. Use of these plastic eliminators as a walking, working or storage surface may result in injury to personnel or damage to equipment. Units with PVC eliminators should not be covered with a clear plastic tarpaulin.

**WARRANTIES:** Please refer to the Limitation of Warranties applicable to & in effect at the time of the sale/purchase of these products.

**LOCATION:** RCT-2000 Cooling Towers must be located to ensure an adequate supply of fresh air to the fans. When units are located adjacent to walls or in enclosures, care must be taken to ensure that the warm saturated discharge air is not deflected and short-circuited back to the air intake(s). Also each unit should be located and positioned to **prevent the introduction of discharge air into the ventilation system** of the building on which the unit is located & of adjacent buildings.

For detailed recommendations on RCT-2000 layouts, please consult your local Baltimore Aircoil Representative.

**WARNING:** When the fan speed of any unit is to be changed from the factory set speed, including the use of a variable speed device, steps **must** be taken to avoid operating at or near the fan's "critical speed", which could result in fan failure and possible injury or damage. Consult your local B.A.C. Representative on any such applications.

**WARNING:** Drawing weights are *approximate* only. They should be confirmed by weighing, before lifting, when available hoisting capacity provides little margin for safety. Also before lifting ensure that no water, ice, snow or other debris has collected in the unit. Such accumulations will add substantially to the equipment's lifting weight.

## RIGGING

To simplify shipping, rigging and installation all RCT-2000 Cooling Towers are shipped in major sections consisting of a basin assembly(s) and one or more casing/roof deck sections (see **Table 1**).

**WARNING** - Unless units ship fully assembled, basin & casing/roof deck sections must be rigged separately. Never assemble the unit before lifting as the lifting devices provided on the unit are not designed to support the weight of the entire assembled unit.

**THE USE OF SAFETY SLINGS IS RECOMMENDED FOR EXTENDED LIFTS OR WHENEVER HAZARDS EXIST.**

The proper rigging sequence for the RCT-2000 series is to lift the basin section(s) into place. On multi-section basins lift each section into place separately (as shown in figure 2b) and then bolt sections together. Next, lift each casing section into place and secure to the pan section (see figure 4). If motor(s) are supplied loose fit the motors. **At the completion of this stage a crane is no longer required.**

Finally securely bolt the unit to supporting steel and on multi-section basins grout the joint between sections.

Table 1 gives the recommended method for rigging each section of any RCT-2000 unit. With the information from the table and the additional instructions on pages 2, 3 and 4 the rigging of a RCT-2000 Cooling Tower can be quickly accomplished.

**Table 1**

Nominal Box Size ft x ft	SINGLE FAN UNITS							TWIN FAN UNITS							TRIPLE FAN UNITS							
	5 x 5	6 x 6	7 x 7	8 x 8	9 x 9	10 x 10	11 x 11	5 x 10	6 x 12	7 x 14	8 x 16	9 x 18	10 x 20	11 x 22	5 x 15	6 x 12	7 x 21	8 x 24	9 x 27	10 x 30	11 x 33	
NO. OF BASINS SECTIONS	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3
NO. OF CASING/ROOFDECKS	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3
H <sub>1</sub> (see fig 2a)	1200	1600	1900	2200	2400	2700	2900	1200	1600	1900	2200	2400	2700	2900	1200	1600	1900	2200	2400	2700	2900	
H <sub>2</sub> (see fig 3)	1700	1900	2200	2500	2700	3000	3300	1700	1900	2200	2500	2700	3000	3300	1700	1900	2200	2500	2700	3000	3300	
L (see fig 3)	1674	1979	2284	2589	2894	3198	3499	1674	1979	2284	2589	2894	3198	3499	1674	1979	2284	2589	2894	3198	3499	

## DRIFT ELIMINATORS

Drift eliminators are factory installed. Check before start-up for any sections that may have been dislodged during shipment or handling. Replace in proper position if required.

## AIR INLET LOUVRES

Air inlet louvres are a lift and drop in design. They are to be installed with flutes facing downwards into basin. A shorter louvre is provided to fit over the quick fill/makeup.

## BASIN LEGS (where supplied loose)

## SECTION ASSEMBLY

Position the basin section(s) on the tower support. See Fig.2a for lifting method per basin section & Fig.2b if multiple sections.

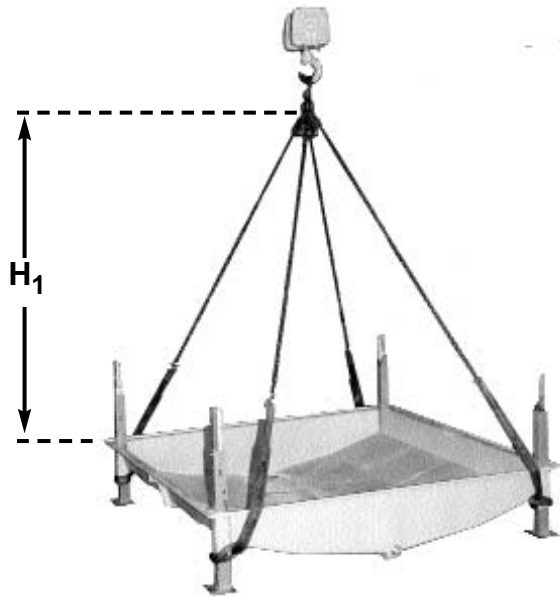


Figure 2a - Lifting basin section

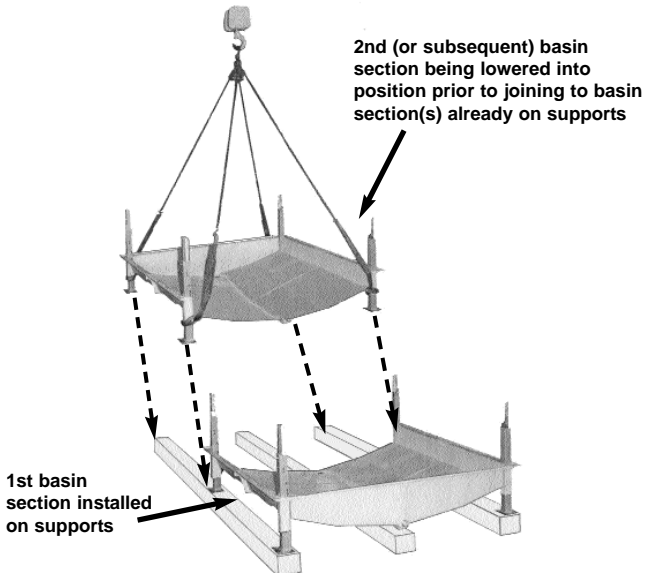


Figure 2b - Installing Multi-section basin

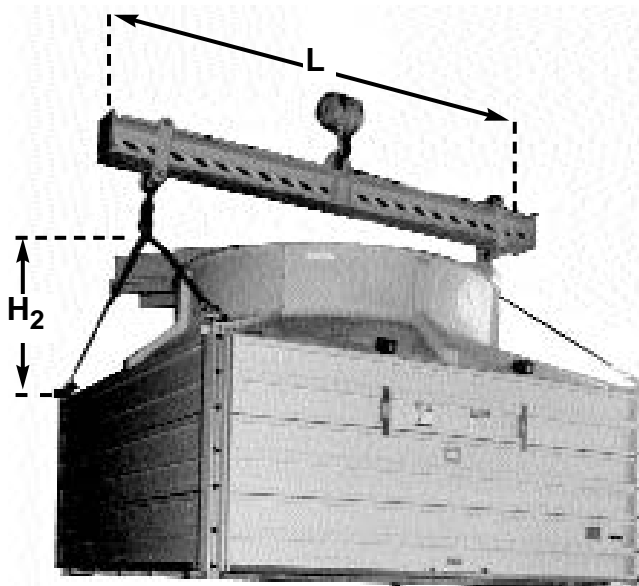


Figure 3 - Lifting casing/roofdeck section

## JOINING CASING TO PAN

Apply a small amount of sealer around the louvre posts in each corner of the basin section. Lift the casing section(s) (see Fig.3) & lower into place using the pan-to-casing joining brackets as a guide to fit into the casing section corner posts (see Fig. 4a). Bolt the two sections together at each post (see Fig. 4b).



Figure 4a - Joining Casing to Pan section

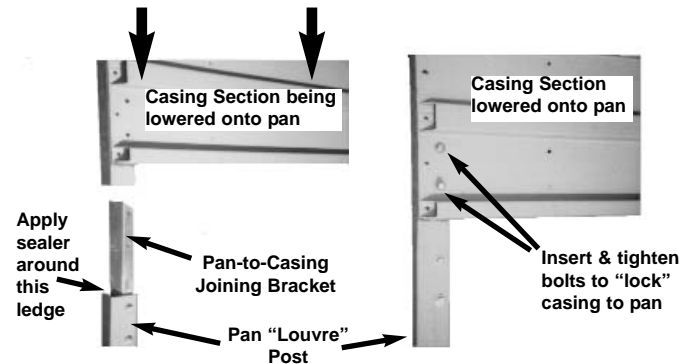


Figure 4b - Joining Casing to Pan section

## FLOAT VALVE

If the unit has shipped without the float arm/ball assembly attached this should be installed as per figure 5 below before louvres are installed.



Figure 5 - Attaching float arm

## PIPING

All piping **must be supported external** to the tower and restraint provided to ensure no vertical or horizontal movement of the piping. All piping and supports are to be furnished by others.

## FAN SPEED

When the fan speed of this product is to be changed from the factory set speed, including the use of a variable fan speed control device, steps must be taken to avoid operating at or near the fan's "critical speed" which could result in fan failure and possible injury or damage.

## BLEED LINE INSTALLATION

On all RCT-2000 units install a bleed line with valve between the system circulating pump discharge riser and a convenient drain. Locate the bleed line in a portion of the riser piping that drains when the pump is off.

**CAUTION:** The bleed valve should always be open when the unit is in operation, unless the bleed rate is automatically controlled by a water treatment system. Recommended bleed rates may be found in the Operating and Maintenance Manual or by consulting a competent water treatment specialist.

## FREEZE PROTECTION

This product must be protected by mechanical and operational methods against damage and/or reduced effectiveness due to possible freeze up. Please contact the local B.A.C. Representative for recommended protection alternatives.

## INSPECTION

Prior to start-up, the following services, which are described in detail in the RCT-2000 Cooling Tower Operating and Maintenance Manual, must be performed:

- ⇒ Inspect general condition of unit.
- ⇒ Inspect fans, motors, bearings, drives, and belts for condition and alignment.
- ⇒ Lubricate all bearings and purge them of old grease.
- ⇒ Check fans and air inlet areas for obstructions.
- ⇒ Clean and flush basin, depressed sump and strainer.
- ⇒ Inspect spray nozzles and heat transfer section.
- ⇒ Check make-up valve and basin water level.

Proper start up procedures and scheduled periodic maintenance will prolong the life of the equipment and ensure the trouble-free performance for which the unit is designed.



# Baltimore Aircoil

### OFFICES WORLDWIDE:

**CALIFORNIA, USA:** BALTIMORE AIRCOIL COMPANY, TEL: 1-559/673-9231, FAX: 1-559/673-5095  
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**DALIAN, CHINA:** DALIAN BINGSHAN BALTIMORE AIRCOIL REFRIGERATION COMPANY, LTD., TEL: (86)(411)469-4854, FAX: (86)(411)469-4844  
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