



Baltimore Aircoil FCI / ECI LINES

Rigging and Assembly Instructions

Introduction

FCI Industrial Fluid Coolers and ECI Evaporative Condensers should be rigged and assembled as outlined in this bulletin. These procedures should be thoroughly reviewed prior to the rigging operation to acquaint all personnel with the procedures to be followed and to assure that all necessary equipment will be available.

Be sure to have a copy of the certified drawing including support requirements available for reference. If you do not have a copy of this drawing or if you need additional information about this unit, contact the local B.A.C. Representative. The model number and serial number of the unit are on the nameplate attached to the unit.

CHECK UNIT BEFORE RIGGING

When the unit is delivered to the site, it should be checked thoroughly, prior to off-loading, to ensure all required items have been received and are free of any shipping damage prior to signing the bill of lading. Damage not reported at time of delivery will be assumed to have taken place after delivery. The following parts should be inspected:

- Exterior Surfaces
- Fan(s)
- Fan Motor(s)
- Fan Guard
- Sump (if applicable)
- Air Inlet Louvres (if applicable)
- Water Distribution System
- Drift Eliminators
- Coils
- Float Valve Assembly (if applicable)
- Strainers (if applicable)
- Pulleys & Belts (if applicable)
- 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. The air inlet louvres ship loose with the unit (if applicable).

CHECK FOUNDATION BEFORE RIGGING

Prior to start with the rigging of the unit, check the foundations to ensure that they are in accordance with support drawing requirements.

UNIT WEIGHTS

Before rigging any FCI/ECI unit, the weight of each section should be verified from the unit certified drawing.

Note: these weights are **approximate** only and should be confirmed by weighing **before lifting** when available hoisting capacity provides little margin for safety.

ANCHORING

Caution: unit must be properly anchored in place before operation.

Holes suitable for bolts M10 or M16 are provided in the basin section for bolting the unit to the support beams. Refer to the suggested steel support drawing for location of the mounting holes. The unit must be level for proper operation. Anchor bolts must be provided by others.

SAFETY

Adequate precautions appropriate for the installation and location of these products should be taken to safeguard the equipment and the premises from damage and the public from possible injury.

For a discussion of Safety Precautions to be followed when operating or maintaining this equipment, please refer to the equipment's Operating and Maintenance Instructions.

NOTICE

Operation, maintenance and repair of this equipment should be undertaken only by personnel qualified to do so. Proper care, procedures and tools must be used in handling, lifting, installing, operating, maintaining and repairing this equipment to prevent personal injury and/or property damage.

WARRANTIES

Please refer to the Limitation of Warranties applicable to and in effect at the time of the sale/purchase of these products.

FREEZE PROTECTION

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

LOCATION

FCI/ECI Units must be located to insure an adequate supply of fresh air to all inlets. 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 intakes.

Allow at least one metre clearance between the air inlet and any solid obstruction.

Additionally, each unit should be located and positioned to prevent the introduction of discharge air into ventilation systems of the building on which the tower is located and of adjacent buildings. For detailed recommendations on FCI/ECI layout, please consult your local Baltimore Aircoil Representative.

RIGGING

All FCI/ECI Units are rigged in two sections. Fan cowl and casing with pan as indicated in Fig. 1. In special cases the pan can be separated from the casing. Consult your BAC representative.

The proper rigging sequence for units is to lift the casing and pan into place, on suitable supports. (Refer to SUPPORT section for details of supports.) Then lift the fan cowl into place. (This section sits loose on top of casing without bolts or sealer.)

NOTE: Suitable lifting lugs for the casing section are fitted on the top of the coil inside the casing.

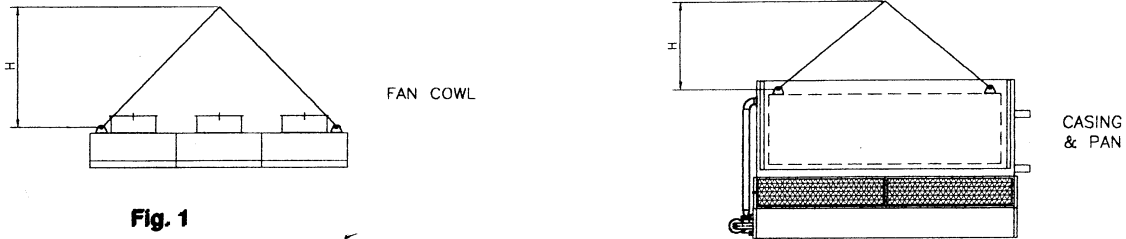


Fig. 1

Refer to TABLE 1 and TABLE 2 for dimension H and for eliminator positioning A to F.

ELIMINATOR POSITIONING AND INSTALLATION

Eliminators are installed by removing side panels and inserting eliminators as indicated in A to F. Then refit side panels.

A 3V6

B 3V9

C 3V12 / 4V12 / 6V12

D 6V18

E 10V12 / 8V12

F 10V18 / 8V18

TABLE 1

EVAPORATIVE CONDENSERS						
MODEL NO.	SHIPPING MASS KG	OPERATING MASS KG	W.CRS mm	L.CRS mm	H	ELIMINATOR POSITIONING
ECI 30 - 65	1220	1700	1000	1850	1700	A
ECI 72 - 90	1840	2630	1000	2770	2600	B
ECI 100 - 135	1840	2630	1000	3690	3500	C
ECI 150 - 205	3190	5280	1384	3690	3500	C
ECI N205 - N270	5350	7550	1960	3690	3500	C
ECI N300 - N400	8120	11420	1960	5530	5300	D
ECI S300 - S350	6510	9670	2410	3690	3500	E
ECI S403 - S504	9730	14600	2410	5530	5300	F
ECI 320 - 420	8200	13450	2980	3690	3500	E
ECI 450 - 680	12300	20200	2980	5530	5300	F

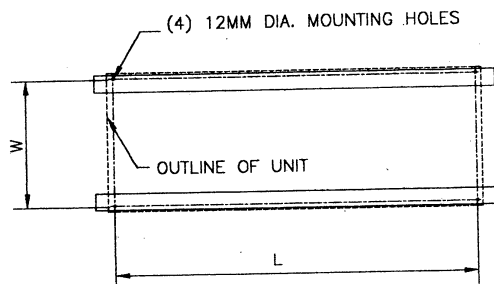
TABLE 2

INDUSTRIAL FLUID COOLERS						
MODEL NO.	SHIPPING MASS KG	OPERATING MASS KG	W.CRS mm	L.CRS mm	H	ELIMINATOR POSITIONING
FCI 18-0 to 18-3	1220	1700	1000	1850	1700	A
FCI 27-1 to 27-3	1840	2630	1000	2770	2600	B
FCI 36-2 to 36-3	1840	2630	1000	3690	3500	C
FCI 50-1 to 50-3	3190	5280	1384	3690	3500	C
FCI 70-1 to 70-4	5400	7600	1960	3690	3500	C
FCI 95-2 to 95-4	6510	9670	2410	3690	3500	C
FCI 105-1 to 105-4	8120	11420	1960	5530	5300	D
FCI 120-1 to 120-3	7400	12550	2980	3690	3500	E
FCI 145-1 to 145-4	9730	14600	2410	5530	5300	F
FCI 180-1 to 180-4	12050	19950	2980	5530	5300	F

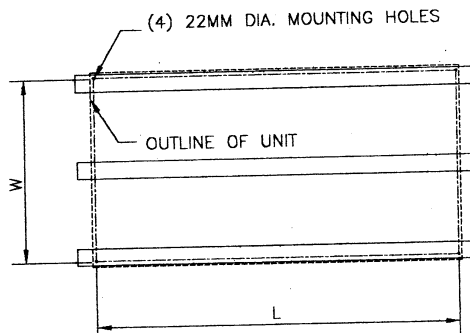
Where a height restriction exists and dimension h cannot be attained a spreader bar MUST be used. Consult your local BAC Representative for more information.

SUPPORT

- The recommended support arrangement for ECI/FCI units consists of two parallel I-beams extending the full length of the unit. Supports and anchor bolts are to be designed and furnished by others.
- All supporting beams are to be flush and level at top and must be oriented relative to gauge line as shown.
- Recommended design loads for each beam should be 60% of the total unit operative weight applied as a uniform load to each beam. Beams should be designed in accordance with standard structural practice. The maximum allowable deflection of beams under the unit shall be 8mm.
- Mounting holes are 12mm diameter up to model ECI-205 and FCI-50-3. Larger sizes all 22mm diameter holes in positions indicated.
- If vibration isolators are used a rail or channel must be provided between the unit and the isolators to provide continuous unit support. Additionally the support beams should be designed to accommodate the overall length and mounting hole location of the isolators which may differ from those of the unit. Refer to vibration isolator drawings for these data.
- Refer to certified drawings for actual shipping and operating mass.



ECI 30 TO ECI 205
FCI 18-0 TO FCI 50-3



ECI N205 TO ECI N400
ECI 320 TO ECI 680
FCI 70-1 TO FCI 180-4
ECI S300 TO ECI S504

AIR INLET LOUVRES

Air inlet louvres are installed by setting each louvre assembly on the lower sill of the basin. They are held in place with clips and knobs. The air inlet louvres must be installed as marked ("top" and "outside") to ensure proper tower operation.

PIPING

All piping must be supported external to the tower and restraint provided to insure no vertical or horizontal movement of the piping. All piping and supports are to be furnished by others. Piping should be arranged to minimise flow-back into the tower when the circulating pump is switched off.

Water inlet connection is supplied with a flange according to SABS 1123-1000/3. Water outlet connection is stud profile - bolt circle to fit SABS 1123-1000/3 flange (supplied by the customer).

Apply sealer tape or other suitable gasket material around bolts to seal mating flange. Nuts and mating flange must be supplied by others.

Flow control valves on the inlets are recommended on multi-cell towers to insure proper water distribution and are to be furnished by others.

BLEED LINE INSTALLATION

FCI/ECI units have a bleed line installed with valve between the system recirculating pump discharge riser and the overflow connection.

The bleed valve should always be open when the unit is in operation. Guidelines for establishing proper bleed rates may be found in the FCI/ECI Operating and Maintenance Manual, ZABM ECI 01.

INSPECTION

Prior to start-up, the following services, which are described in detail in the FCI/ECI Operating and Maintenance manual, ZABM ECI 01, must be performed:

- Inspect general condition of unit.
- Inspect fans and motors for condition.
- Check fans and air inlet areas for obstructions.
- Clean and flush basin, depressed sump and strainer.
- Inspect spray nozzels 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.

FLOAT VALVE

A low pressure (0 to 200 kpa) float valve is supplied for water make-up. Except when units are transported in one piece, the lever arm and float ball assembly are shipped separately and must be fitted on site. See Operating and Maintenance, ZABM ECI 01, instructions for information on setting the water level.



Baltimore Aircoil