

Rigging and Assembly Instructions



PMCQ FORCED DRAFT EVAPORATIVE CONDENSERS



**For EVAPCO Authorized Parts and Service,
Contact Your Local Mr. GoodTower® Service Provider
or the EVAPCO Plant Nearest You**

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Method of Shipment

PMCQ Condensers are shipped with the top section(s) separate from the bottom section(s). These sections have mating flanges and will join together in a water-tight joint when sealed and bolted together as described in the following instructions. Miscellaneous items, such as sealer, fasteners and other required materials, are packaged and placed inside the pan for shipment.

Storage

Do not place tarps or other coverings over the top of the units if the units are to be stored before installation. Excessive heat can build up if the units are covered causing possible damage to the PVC eliminators. For extended storage beyond six months rotate the fans and fan motor shaft(s) monthly. Also, the fan shaft bearings should be purged and regreased prior to start-up.

General

For extended lifts, or where hazards may exist, it is recommended that safety slings and spreaders be employed for safety. Refer to the "Extended Lifts" section in this bulletin.

NOTE: All casing sections are factory inspected prior to shipment to verify proper fit for rigging. Please take extra care to handle and rig unit section per the instructions of this manual to avoid possible distortion and poor casing alignment. It is advisable to check each section upon receipt and during each lift to ensure that the factory alignment has not been altered. Should the field inspection indicate the section alignment has been altered out of square, please contact the factory or your local EVAPCO representative for additional instructions to obtain proper section fit.

Structural Steel Support

Two structural "I" beams running the length of the unit are required for supporting the unit. These beams should be located underneath the outer flanges of the unit.

Mounting holes, 19 mm in diameter, are located in the bottom flange for bolting to the structural steel. Refer to the recommended structural steel support drawing and certified print for exact bolt hole location. Bolt the bottom section to the steel support before rigging the top section.

Beams should be sized in accordance with accepted structural practices. Maximum deflection of the beam under the unit should be $1/360$ of the unit length, not to exceed 13 mm. Deflection may be calculated by using 55% of the operating weight as a uniform load on each beam (see certified print for operating weight).

The supporting "I" beams should be level to within 3 mm in 1,8 m before setting the unit. Do not level the unit by shimming between the bottom flange and the beams as this will not provide proper longitudinal support.

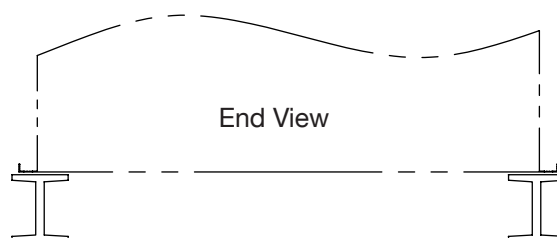
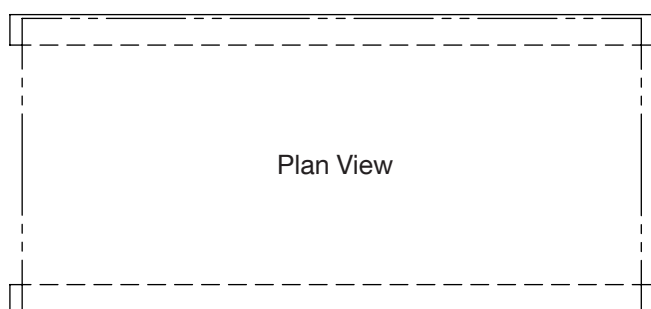


Figure 1 - Recommended Steel Support

Rigging Pan-Fan Section

U-bolts or similar lifting points are located in the pan-fan section for lifting and final positioning purposes as shown below in Figures 2 and 3. Units with lengths up to 6,1 m have 4 lift points. Units with lengths over 6,1 m have either 6 or 8 lift points.

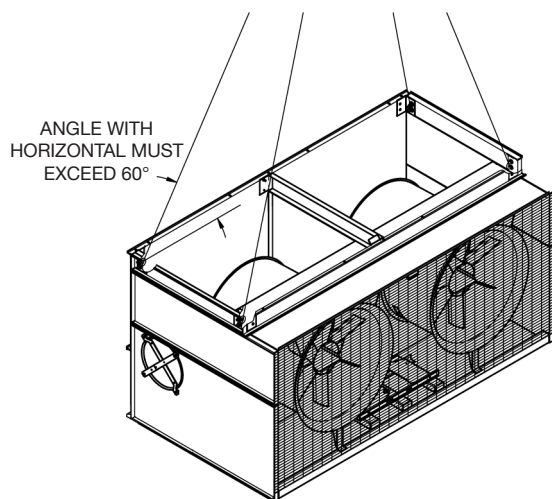


Figure 2 - Pan - Fan Section (up to 6,1 m Long)

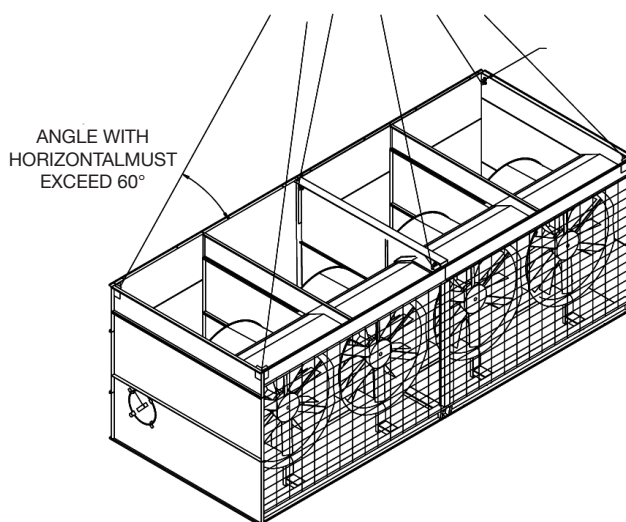


Figure 3 - Pan - Fan Section (over 6,1 m Long)

Extended Lifts

The recommended method for extended lifts is to use slings under the unit (Figure 4). Spreader bars should always be used between the cables at the top of the section to prevent damage to the upper flanges.

Note: The lifting points should be used for final positioning only and for lifting where no danger exists. If they are used for extended lifts, safety slings and spreader bars should be provided under the sections as shown.

Safety slings, spreaders, and skids should be removed before final positioning of the unit.

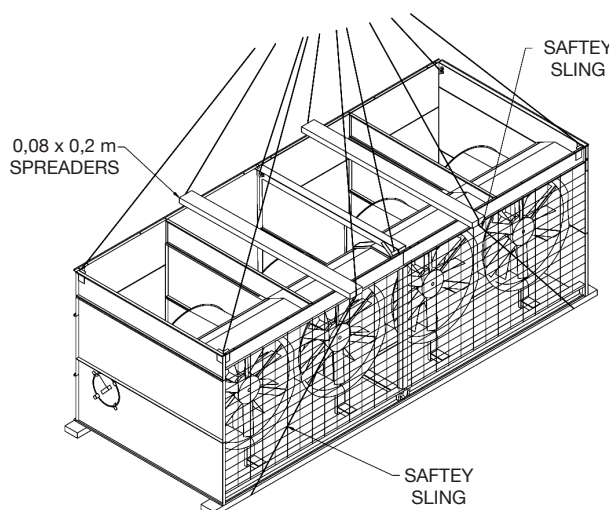


Figure 4 - Proper Rigging Method for Extended Lifts

Applying Sealer Tape

Once the bottom section has been set on the supporting steel and bolted in place, wipe the top flanges to remove any dirt or moisture. Place sealer tape over the mounting hole centerline on the side flanges. **Apply two strips of sealer tape, one partially overlapping the other, on the end flanges.** (Note: Sealer tape is applied completely around the perimeter of the section.)

The sealer tape should overlap on the corners as shown in Figure 5. **Do not splice the sealer tape along the end flanges and preferably not on the side flanges if it can be avoided. Always remove the paper backing from the sealer tape.**

For units which have two coil sections, sealer tape must be applied to all internal flanges (Figure 6).

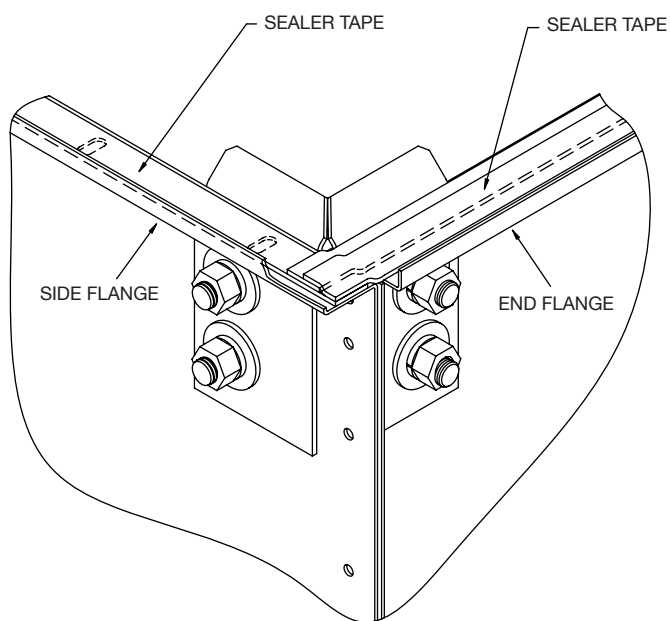


Figure 5 - Proper Sealer Tape Application

Two strips of sealer tape should be applied on ends of unit and internal flanges

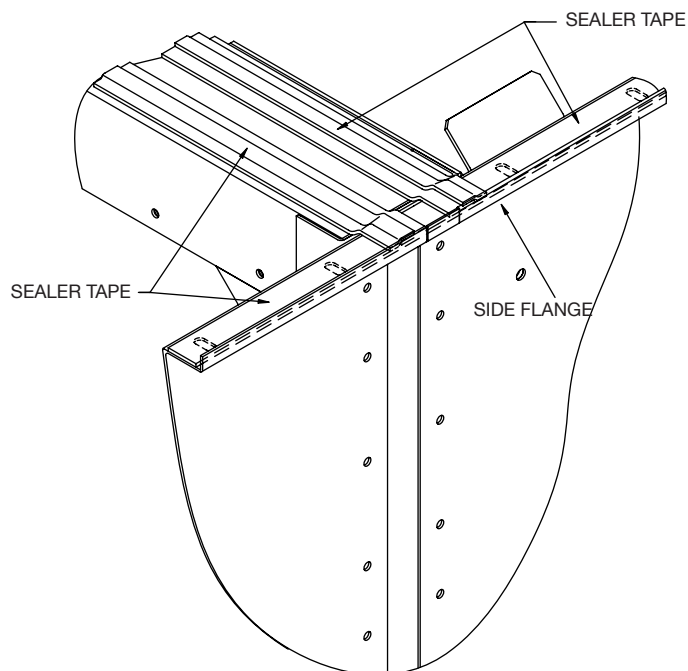


Figure 6 - Sealer Detail for Center Joint of Units with two Coil Sections

Rigging Coil Casing Section

The lifting points of the coil section(s) are on the outside of the casing section (Figures 7 & 8). These lift points are for lifting and final positioning.

For 5,5 m long and longer models, six lifting points are provided as shown in Figure 8. Refer to the certified drawing for the coil section weight.

Note:

Use all of the U-bolts or lift points provided for lifting.

Use appropriate shackles for lifting.

Oversized shackles will not fit in our lifting ears.

Always use safety slings for extended lifts or where any hazard exists. See the “Extended Lifts” section in this bulletin.

Caution: Do not assemble sections and attempt to lift the entire unit. The lift points are designed to carry only the weight of their individual section.

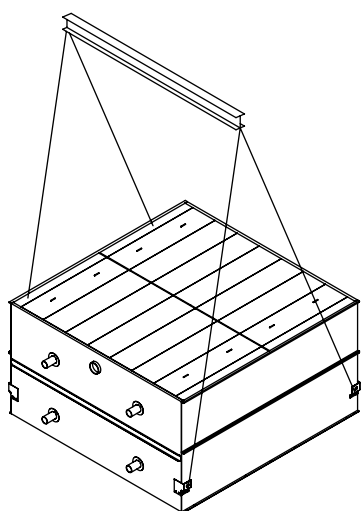


Figure 7 - Large Coil Section (3,6 m Long Units)

PMCQ 316 to PMCQ 493 &
PMCQ 734 to PMCQ 986

PMCQ 399 to PMCQ 561 &
PMCQ 798 to PMCQ 1122

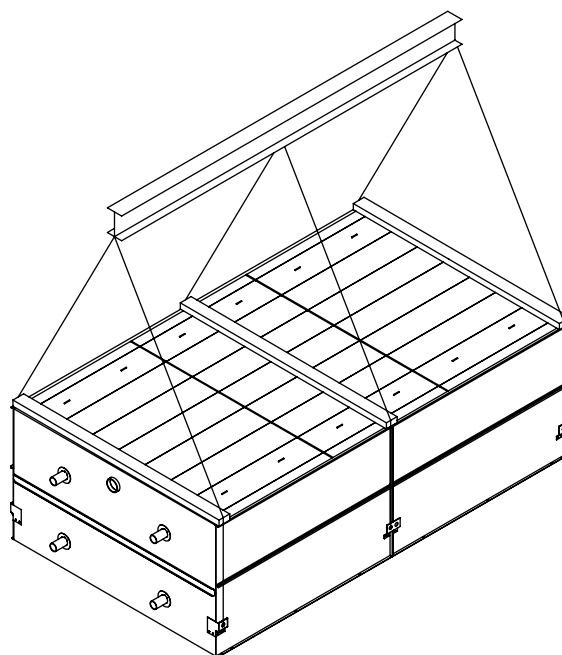


Figure 8 - Large Coil Section (5,5 m Long and Up)

PMCQ 476 to PMCQ 740 &
PMCQ 952 to PMCQ 1480

PMCQ 603 to PMCQ 893 &
PMCQ 1206 to PMCQ 1786

Assembly of the Coil Section to the Pan-Fan Section

Before assembling the coil/fan section to the basin section, remove any loose parts shipped in the pan.

Wipe the flanges on the bottom of the coil section. Check to see that the water distribution connection on the coil section is in the correct position relative to the pan-fan section (see certified print).

Lower the coil section to within several centimeters of the pan-fan section making sure the two sections do not touch and the sealer is not disturbed. **Place drift pins (see Figure 9) in at least 3 of the corner mounting holes and gradually lower the coil section into place using the drift pins to guide the section down accurately onto the mating flange.** **On long sections, 5,5 m and longer, drift pins should be used midway along the sides as well.**

Place fasteners in all four corner bolt holes. **Then continue to install the rest of the fasteners working from the corners toward the center, using drift pins to align the holes.** A fastener must be installed in every hole on the side flanges although none are required on the end flanges.

For units with two coil sections, mount the first as described, and then follow the same procedure for the second section.

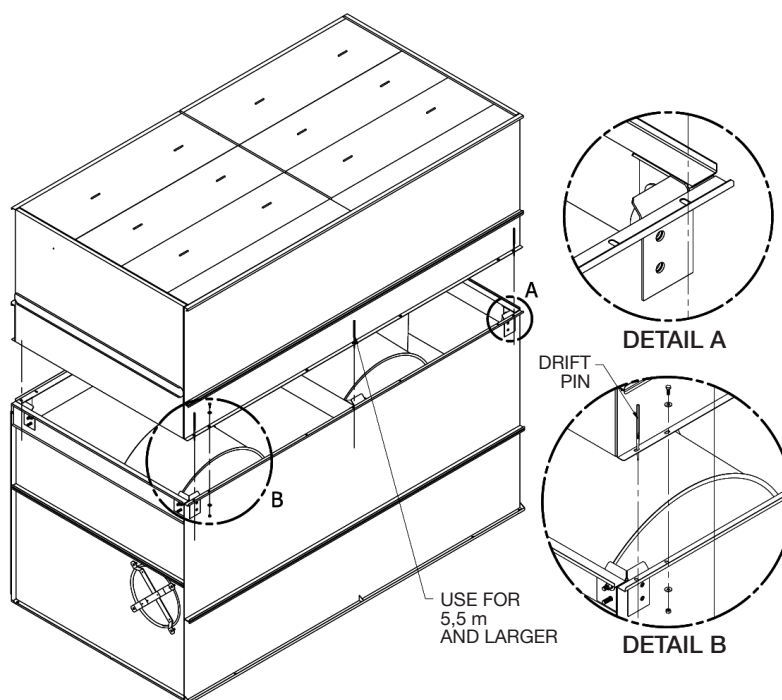


Figure 9 - Mating Upper Section to Basin Section

Rigging Hardware

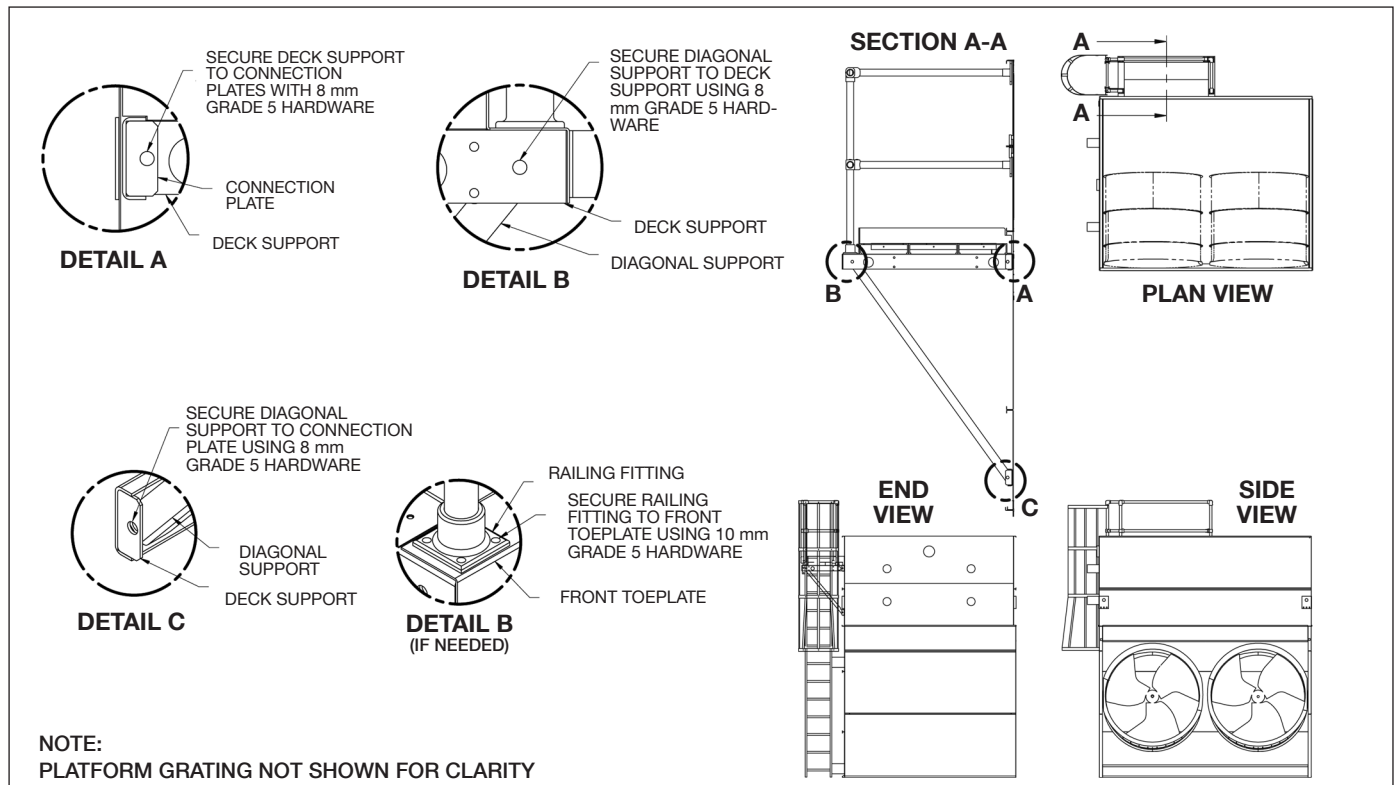
The following table lists those parts which are shipped together with the unit(s) for field assembly.

Model	Plan Area	Bolt ¹	Lock Nut ¹	Washer ¹	Sealer Tape
PMCQ-316 to PMCQ-493	3Mx12	14	14	28	4
PMCQ-476 to PMCQ-740	3Mx18	16	16	32	5
PMCQ-734 to PMCQ-986	3Mx24	28	28	56	8
PMCQ-952 to PMCQ-1480	3Mx36	32	32	64	10
PMCQ-399 to PMCQ-561	12x12	14	14	28	5
PMCQ-603 to PMCQ-845	12x18	16	16	32	6
PMCQ-765 to PMCQ-893	12x20	16	16	32	6
PMCQ-798 to PMCQ-1122	12x24	28	28	56	10
PMCQ-1206 to PMCQ-1690	12x36	32	32	64	12
PMCQ-1618 to PMCQ-1786	12x40	32	32	64	12

¹ - 8 mm Diameter Hardware

Field Assembly of External Service Platform and Ladder

The external service platform and ladder assemblies are shipped separate from the unit. The platform is partially assembled prior to shipment to minimize field assembly. The platform and ladder assembly should be attached after the unit is fully rigged following the instructions below.





Final Assembly & Start Up Details

Shipping Materials

Remove any wood chocks, spare parts, or miscellaneous items that have been placed inside the unit for shipping purposes. Clean all debris from the basin.

Pump Discharge Line

Connect the riser pipe from the pump discharge on the pan-fan section to the riser pipe on the coil section using the flexible connection and hose clamps provided.

Bleed-off Line

A bleed-off line and valve are installed on the unit when shipped with a pump. On units shipped without a pump (remote sump applications), make sure a bleed-off line and valve are properly sized and installed on the discharge side of the pump and connected to a convenient drain. In either case, the bleed-off valve should be fully open.

Float Valve Adjustment

The float valve is pre-set at the factory, however adjustment should be checked after rigging. Raise or lower the float by using the wing nuts on the vertical threaded rod. Do not adjust the horizontal rod. At initial start-up, the water level should be 20 mm below the center of the overflow connections.

For the operating level, please see the O&M Manual - section "Operating Level of Water in Cold Water Basin".

Strainer

Remove the strainer and inspect for any debris which may have accumulated below the suction hood. Reinstall the strainer in the basin to ensure that it is in its proper location over the pump suction.

Screens

Protective air inlet screens are provided across the front of the fan section of all models.

Fan Rotation

Bump start and check the fans for proper rotation. Directional arrows are placed on the inside of the axial fan cylinders.

Pump Rotation

After filling the basin to overflow with fresh water, bump start and check the pump for proper rotation. Directional arrows are found on the pump impeller housing.

Maintenance

Once installation is complete and the unit is turned on, it is important that it be properly maintained. Maintenance is not difficult or time consuming but must be done regularly to assure maximum trouble free performance of the unit. Refer to the maintenance instructions enclosed with the unit for proper maintenance procedures.

Also, proper freeze protection must be provided if the unit is located in a cold climate. Refer to the factory supplied Maintenance Instructions and Checklist as well as factory product bulletins for further information.

