



Rigging and Assembly Instructions

PMC-E / PMCQ FORCED DRAFT EVAPORATIVE CONDENSERS

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

EVAPCO, Inc. — World Headquarters & Research/Development Center

EVAPCO, Inc. • P.O. Box 1300 • Westminster, MD 21158 USA
PHONE: 410-756-2600 • FAX: 410-756-6450 • E-MAIL: marketing@evapco.com

EVAPCO North America

EVAPCO, Inc.

World Headquarters
P.O. Box 1300
Westminster, MD 21158 USA
Phone: 410-756-2600
Fax: 410-756-6450
E-mail: marketing@evapco.com

EVAPCO East

5151 Allendale Lane
Taneytown, MD 21787 USA
Phone: 410-756-2600
Fax: 410-756-6450
E-mail: marketing@evapco.com

EVAPCO Midwest

1723 York Road
Greenup, IL 62428 USA
Phone: 217-923-3431
Fax: 217-923-3300
E-mail: evapcomw@evapcomw.com

EVAPCO West

1900 West Almond Avenue
Madera, CA 93637 USA
Phone: 559-673-2207
Fax: 559-673-2378
E-mail: contact@evapcowest.com

EVAPCO Iowa

925 Quality Drive
Lake View, IA 51450 USA
Phone: 712-657-3223
Fax: 712-657-3226

EVAPCO Iowa Sales & Engineering

215 1st Street, NE
P.O. Box 88
Medford, MN 55049 USA
Phone: 507-446-8005
Fax: 507-446-8239
E-mail: evapcomn@evapcomn.com

Refrigeration Valves & Systems Corporation

A wholly owned subsidiary of EVAPCO, Inc.
1520 Crosswind Dr.
Bryan, TX 77808 USA
Phone: 979-778-0095
Fax: 979-778-0030
E-mail: rvs@rvscorp.com

McCormack Coil Company, Inc.

A wholly owned subsidiary of EVAPCO, Inc.
P.O. Box 1727
6333 S.W. Lakeview Boulevard
Lake Oswego, OR 97035 USA
Phone: 503-639-2137
Fax: 503-639-1800
E-mail: mail@mmccoil.com

EvapTech, Inc.

A wholly owned subsidiary of EVAPCO, Inc.
8331 Nieman Road
Lenexa, KS 66214 USA
Phone: 913-322-5165
Fax: 913-322-5166
E-mail: marketing@evaptech.com

Tower Components, Inc.

A wholly owned subsidiary of EVAPCO, Inc.
5960 US HWY 64E
Ramseur, NC 27316
Phone: 336-824-2102
Fax: 336-824-2190
E-mail: mail@towercomponentsinc.com

EVAPCO Newton

701 East Jourdan Street
Newton, IL 62448 USA
Phone: 618-783-3433
Fax: 618-783-3499
E-mail: evapcomw@evapcomw.com

EVAPCO Europe

EVAPCO Europe, N.V. European Headquarters

Industrieterrein Oost 4010
3700 Tongeren, Belgium
Phone: (32) 12-395029
Fax: (32) 12-238527
E-mail: evapco.europe@evapco.be

EVAPCO Europe, S.r.l.

Via Ciro Menotti 10
I-20017 Passirana di Rho
Milan, Italy
Phone: (39) 02-939-9041
Fax: (39) 02-935-00840
E-mail: evapcoeuropa@evapco.it

EVAPCO Europe, S.r.l.

Via Dosso 2
23020 Piateda Sondrio, Italy

EVAPCO Europe, GmbH

Bovert 22
D-40670 Meerbusch, Germany
Phone: (49) 2159-69560
Fax: (49) 2159-695611
E-mail: info@evapco.de

EVAPCO Middle East DMCC

Reef Tower, 29th Level, Cluster O,
Jumeirah Lake Towers, P.O. Box 5003310
Dubai, U.A.E.
Ph: (971) 4-448 7242 - Fx: (971) 4-448 7112
info@evapco.ae

EVAPCO Air Solutions a/s

A wholly owned subsidiary of EVAPCO, Inc.
Knøsgårdvej 115
DK-9440 Aabybro Denmark
Phone: (45) 9824 4999
Fax: (45) 9824 4990
E-mail: info@flexcoil.dk

EVAPCO S.A. (Pty.) Ltd.

A licensed manufacturer of EVAPCO, Inc.
18 Quality Road
Isando 1600
Republic of South Africa
Phone: (27) 11-392-6630
Fax: (27) 11-392-6615
E-mail: evapco@evapco.co.za

Evap Egypt Engineering Industries Co.

A licensed manufacturer of EVAPCO, Inc.
5 El Nasr Road
Nasr City, Cairo, Egypt
Phone: 2 02 24022866/2 02 24044997
Fax: 2 02 24044667/2 02 24044668
E-mail: Primacool@link.net/Shady@primacool.net

EVAPCO Asia/Pacific

EVAPCO Asia/Pacific Headq.

1159 Luoning Rd. Baoshan Ind. Zone
Shanghai, P. R. China,
Postal Code: 200949
Phone: (86) 21-6687-7786
Fax: (86) 21-6687-7008
E-mail: marketing@evapcochina.com

EVAPCO (Shanghai) Refrigeration Equipment Co., Ltd.

1159 Luoning Rd., Baoshan Industrial Zone
Shanghai, P.R. China, Postal Code: 200949
Phone: (86) 21-6687-7786
Fax: (86) 21-6687-7008
E-mail: marketing@evapcochina.com

Beijing EVAPCO Refrigeration Equipment Co., Ltd.

Yan Qi Industrial Development District
Huai Rou County
Beijing, P.R. China, Postal Code: 101407
Phone: (86) 10 6166-7238
Fax: (86) 10 6166-7395
E-mail: evapcobj@evapcochina.com

EVAPCO Australia (Pty.) Ltd.

34-42 Melbourne Road
P.O. Box 436
Riverstone, N.S.W. Australia 2765
Phone: (61) 2 9627-3322
Fax: (61) 2 9627-1715
E-mail: sales@evapco.com.au

EvapTech Asia Pacific Sdn. Bhd

A wholly owned subsidiary of EvapTech, Inc.
IOI Business Park, 2/F Unit 20
Persiaran Puchong Jaya Selatan
Bandar Puchong Jaya,
47170 Puchong, Selangor, Malaysia
Phone: (60-3) 8070 7255
Fax: (60-3) 8070 5731
E-mail: marketing-ap@evaptech.com

Visit EVAPCO's Websites at:

www.evapco.eu
www.mrgoodtower.eu

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Method of Shipment

PMC-E / 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 watertight 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, PVC louvers, or PVC fill. **For extended storage beyond six months rotate the fan 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, 3/4" (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 1/2" (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 1/8" (3 mm) in 6' (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.

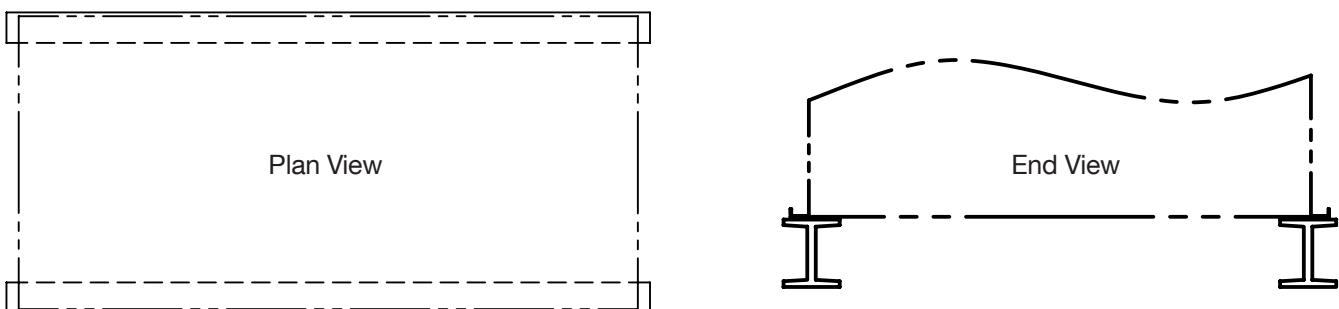


Figure 1 - Recommended Steel Support

Rigging Pan-Fan Section

U-bolts or similar lifting points are located in the panfan section for lifting and final positioning purposes as shown below in Figures 2 and 3. Units with lengths up to 20' (6 m) have 4 lift points. Units with lengths over 20' (6 m) have either 6 or 8 lift points.

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

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

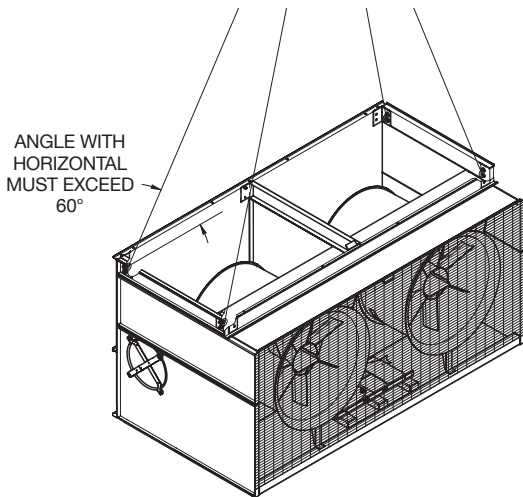


Figure 2 - Fan Section (up to 20' [6 m] Long)

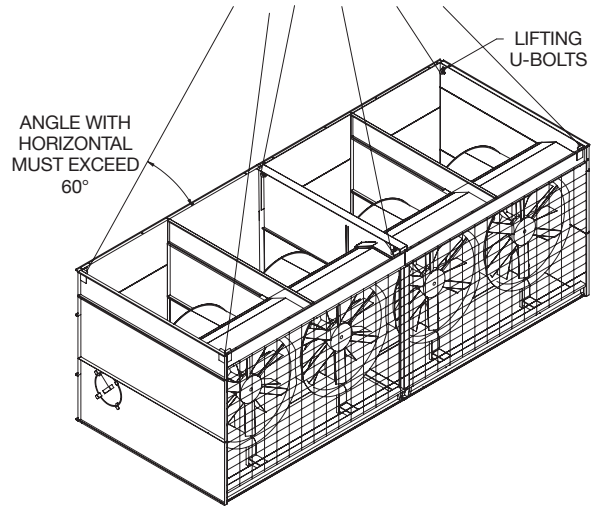


Figure 3 - Pan - Fan Section (over 20' [6 m] Long)

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.

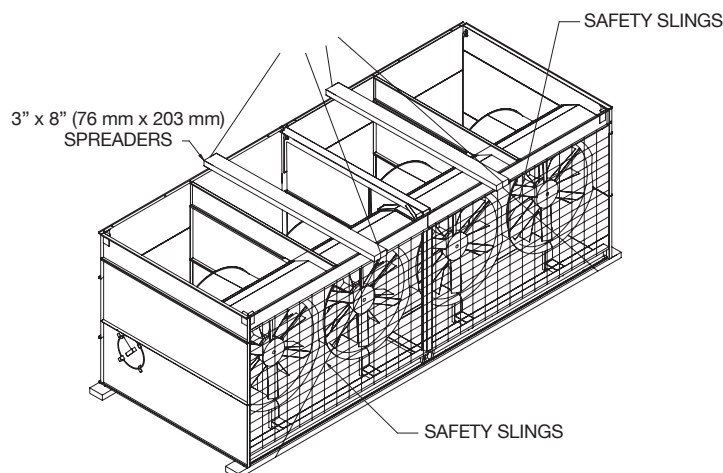


Figure 4 - Proper Rigging Method for Extended Lifts

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).

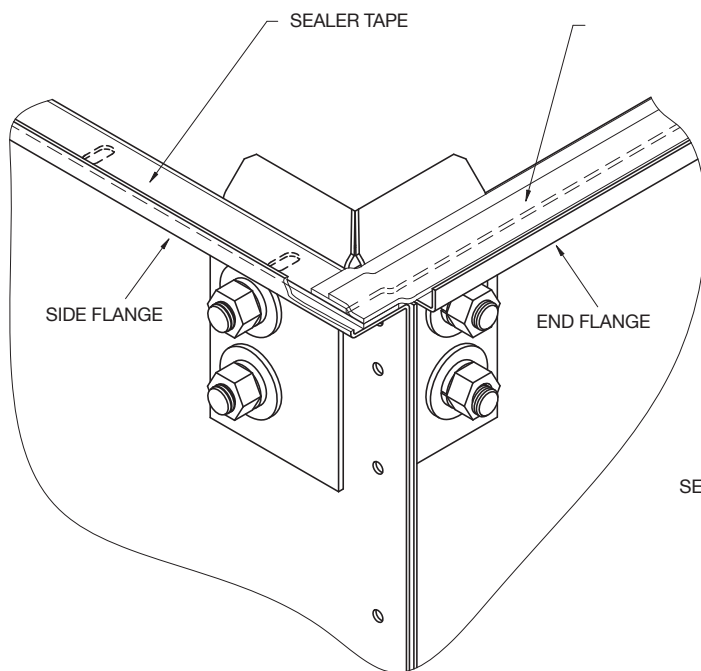


Figure 5 - Proper Sealer Tape Application

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

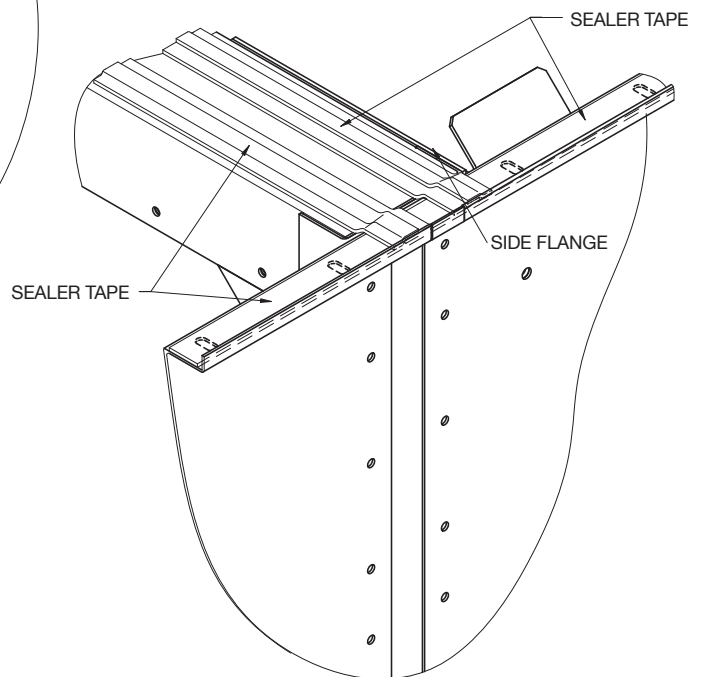


Figure 6 - Sealer Detail for Center Joint of Units with two Coil Sections

Rigging Coil Casing Section

U-bolts or lift points are located inside the casing on the four corners of the coil for small single coil casing sections. These lift points are for lifting and final positioning (Figure 7). On larger coil sections that have two coils, the lifting points are on the outside of the casing section (Figures 8 & 9).

The end and center eliminator sections on small, single coil sections should be removed before lifting from the U-bolts or lift points.

For 18' (5.5 m) long and longer models, six lifting points are provided as shown in Figure 9. Refer to the certified drawing for the coil section weight.

Note: Use all of the U-bolts or lift points provided for lifting. 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 U-bolts and lift points are designed to carry only the weight of their individual section.

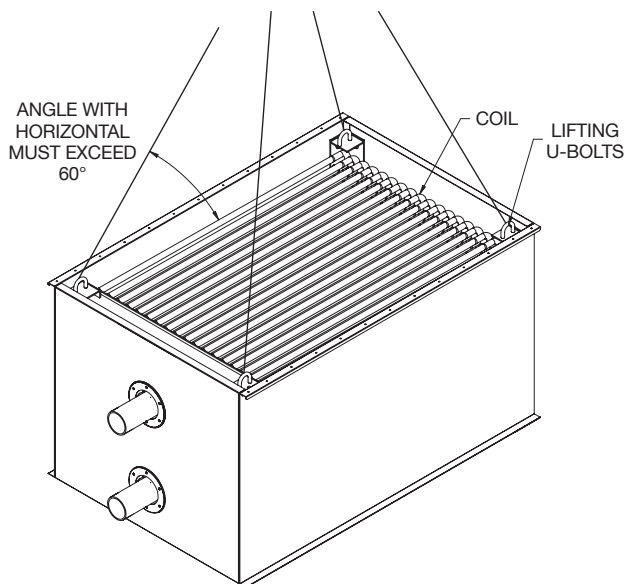


Figure 7 - Small, Single Coil Sections
(PMC-175E to 375E)

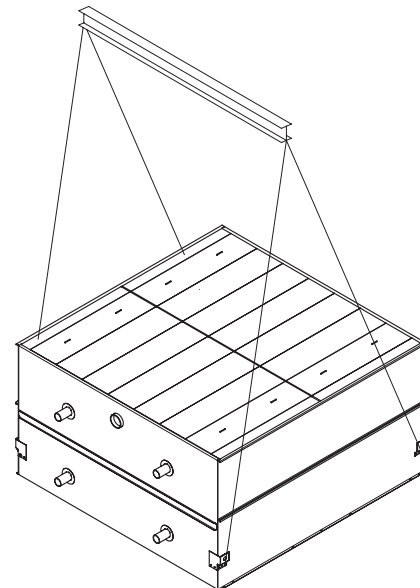


Figure 8 - Large Coil Section (12' [3.6 m] Long Units)
(PMC-332E to 519E & PMC-772E to 1038E)
(PMC-420E to 631E & PMC-890E to 1261E)

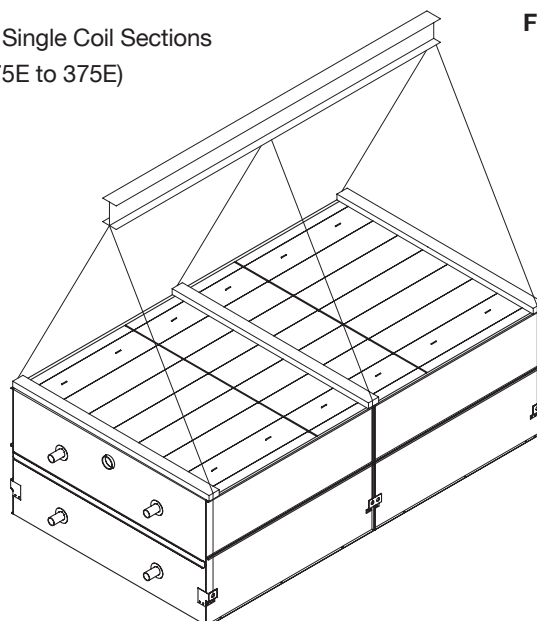


Figure 9 - Large Coil Section (18' [5.5 m] Long and Up)
(PMC-503E to 778E & PMC-1006E to 1556E)
(PMC-634E to 1258E & PMC-1269E to 1985E)

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 inches of the pan-fan section making sure the two sections do not touch and the sealer is not disturbed. **Place drift pins (see Figure 10 to 11) 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, 18' (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.

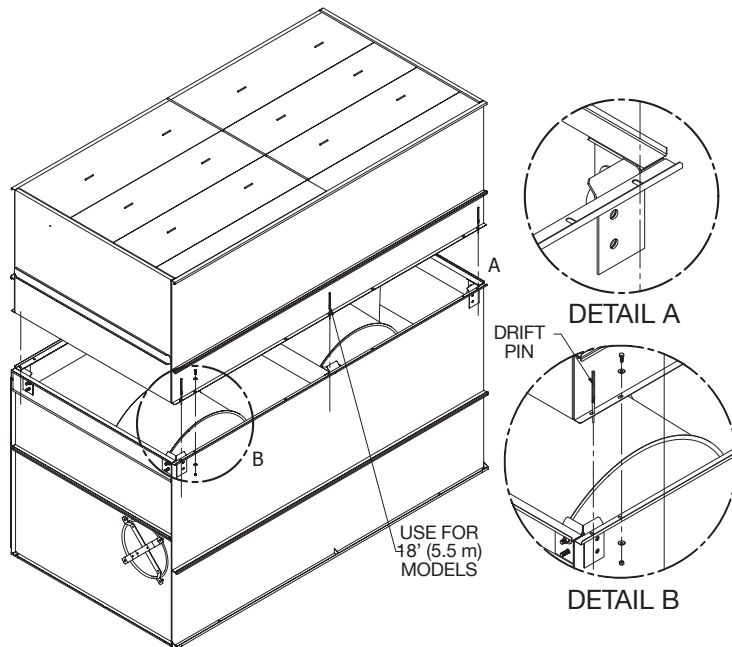


Figure 10 - Mating Upper Section to Basin Section
(PMC-250E to 375E)

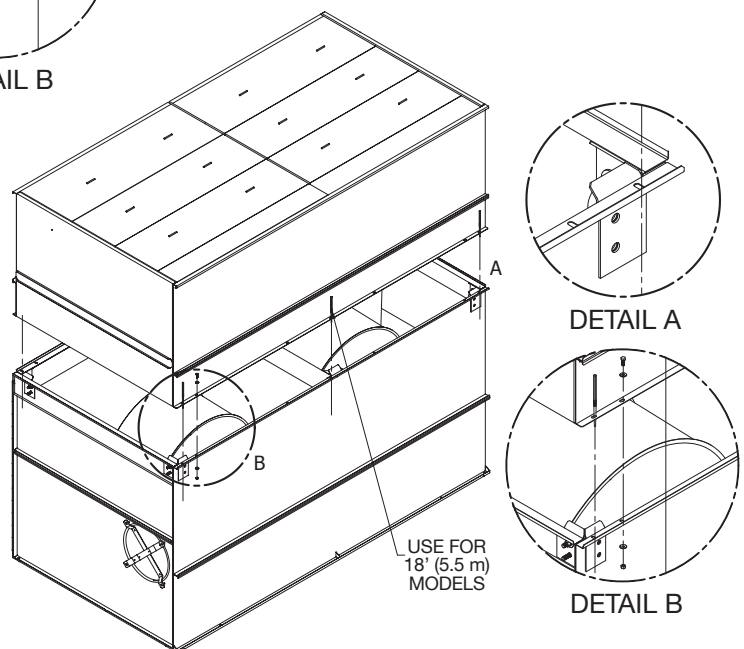


Figure 11 - Mating Upper Section to Basin Section
(PMC-332E to 1985E)

Rigging Hardware

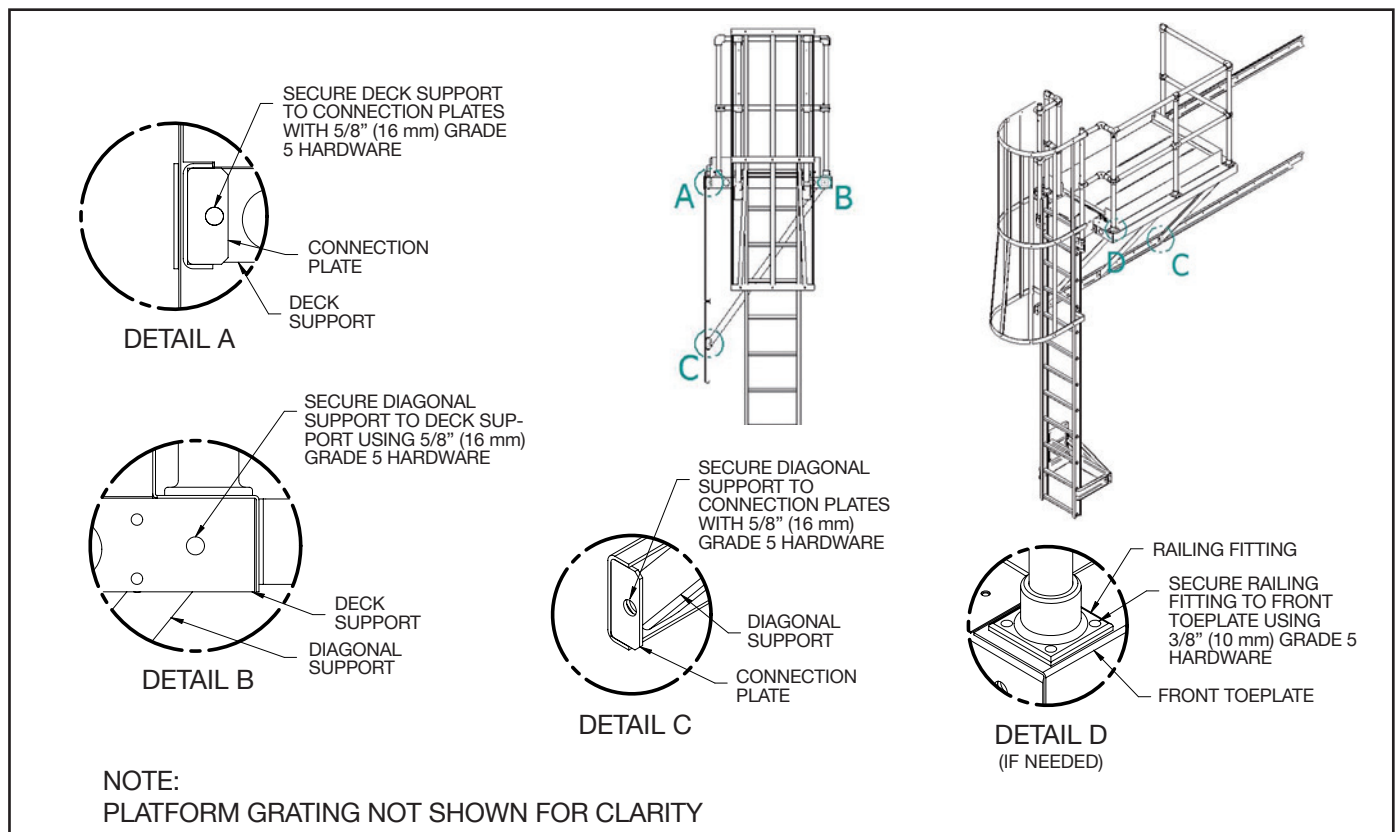
The following table lists those parts which are shipped together with the unit(s) for field assembly.

Model	Box Size	Bolt ¹	Lock Nut ¹	Washer ¹	Sealer Tape
PMC-175E to 240E	5' x 12' (1.5 x 3.6 m)	14	14	28	3
PMC-250E to 375E	5' x 18' (1.5 x 5.4 m)	16	16	32	4
PMC-332E to 519E	3M x 12' (3 x 3.6 m)	14	14	28	4
PMC-503E to 778E	3M x 18' (3 x 5.4 m)	16	16	32	5
PMC-772E to 1038E	3M x 24' (3 x 7.2 m)	28	28	56	8
PMC-1006E to 1556E	3M x 36' (3 x 10.8 m)	32	32	64	10
PMC-420E to 631E	12' x 12' (3.6 x 3.6 m)	14	14	28	5
PMC-634E to 934E	12' x 18' (3.6 x 5.4 m)	16	16	32	6
PMC-811E to 992E	12' x 20' (3.6 x 6 m)	16	16	32	6
PMC 974E to 1258E	12' x 24' (3.6 x 7.2 m)	28	28	56	10
PMC-840E to 1261E	12' x 24' (3.6 x 7.2 m)	28	28	56	10
PMC-1269E to 1877E	12' x 36' (3.6 x 10.8 m)	32	32	64	12
PMC-1705E to 1985E	12' x 40' (3.6 x 12 m)	32	32	64 </td <td>12</td>	12

¹ 3/8" (10 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. At initial start-up, the water level should be adjusted so that the center of the float is 1" (25 mm) below the center of the overflow connections when the valve is in the fully closed position. Raise or lower the float by using the wing nuts on the vertical threaded rod. Do not adjust the horizontal rod.

During normal operation, when the unit is under load, the water level should be adjusted so that the operating level is 3" to 4" (76 to 102 mm) below the overflow.

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. Screens are not provided on the bottom of the fan section since most of the units are mounted on steel beams, either on the roof or at ground level. If units are installed in an elevated position, bottom screens are recommended for safety protection and should be provided by the installing contractor.

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.