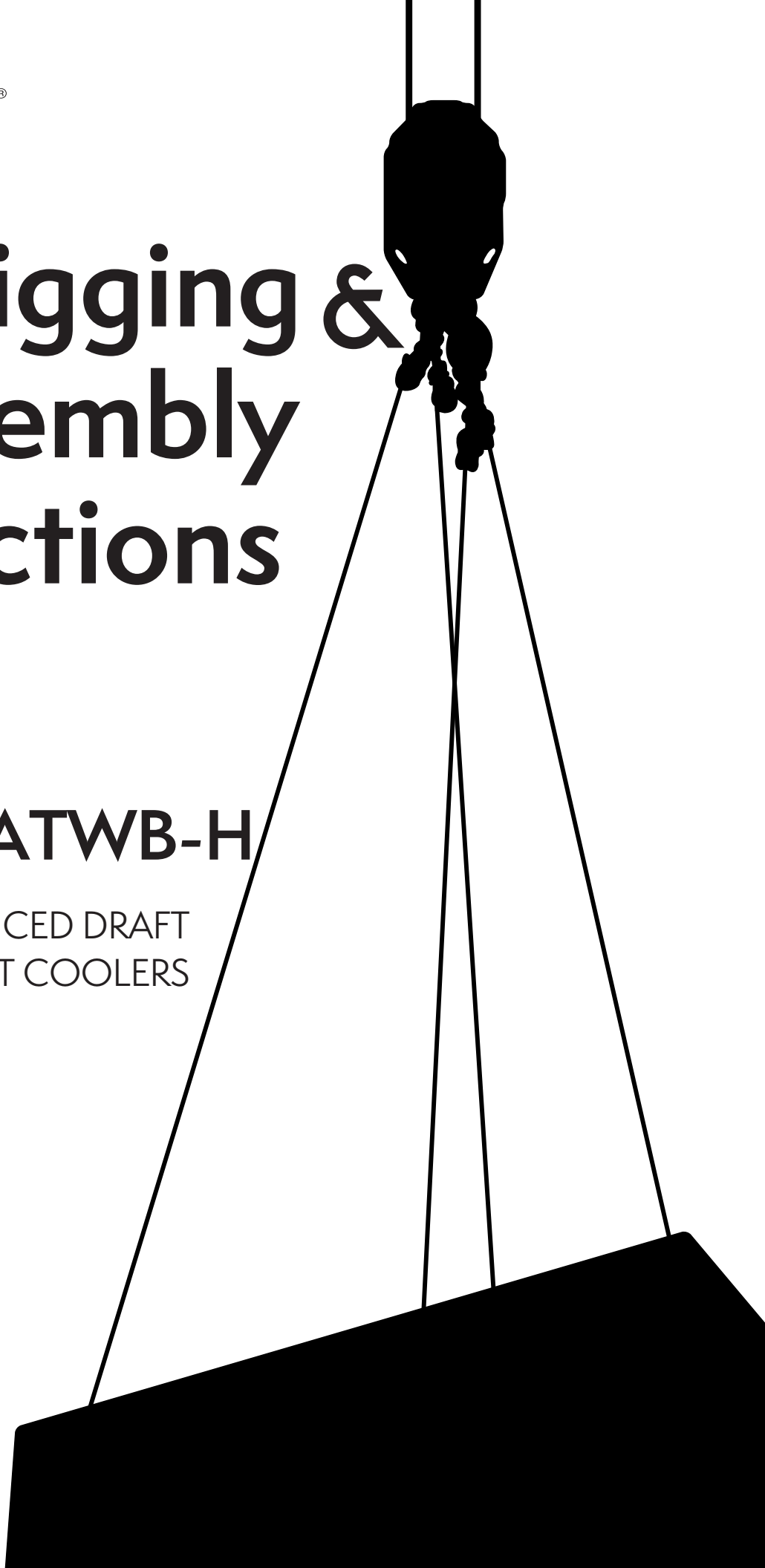
Rigging & Assembly Instructions

eco-ATWB-H

INDUCED DRAFT
CLOSED CIRCUIT COOLERS



Mr. GoodTower®

Bulletin EATWBH24RIG - Metric 12/24

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The eco-ATWB-H CLOSED CIRCUIT COOLER should be rigged and assembled using the instructions and recommendations outlined in this bulletin.

All personnel should review these procedures, as well as the latest industry-approved installation practices, prior to rigging and assembly. The information in this bulletin is for informational purposes only. These instructions do not purport to cover all variations and possible contingencies in connection with installation. Additionally, the procedures described herein are subject to change without prior notice, due to EVAPCO's ongoing research and development.

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Introduction

Thank you for purchasing your EVAPCO induced draft condenser or closed circuit cooler. This manual provides instructions and recommendations to safely and correctly install all eco-ATWB-H evaporative closed circuit coolers. It is recommended that all instructions provided in this manual be reviewed in detail prior to rigging and assembly. If at any point, specific circumstances not covered by this manual arise, please contact your local EVAPCO representative for assistance.

Proper care must be taken by all parties involved in handling and assembling the equipment to ensure that safe and thorough installation practices are implemented to prevent damage or injury to the equipment, persons, and environment involved.

Method of Shipment

The eco-ATWB-H induced draft coil products are shipped in three sections. These sections consist of the fan section, the coil section and the basin section. These sections have mating flanges and will join together in a waterproof joint when sealed and bolted together as described in the following instructions. Miscellaneous items, such as sealer, self-tapping screws and any other required materials, are packaged and placed inside the pan for shipment. For units consisting of multiple cells, drip channels and splash guards will ship loose in the basin for field installation.

For 8.5' (2.5m) and 17' (5.2m) wide units, the motors and drives are factory aligned and then shipped loose inside the basin section for mounting during installation. Refer to the "External Motor Installation" 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 ("square") has been altered, please contact the factory or your local EVAPCO representative for additional instructions to obtain proper section fit.

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 or PVC louvers. For extended storage beyond six months rotate the fan and fan motor shaft(s) monthly. Also, the fan shaft bearings should be purged and regreases prior to start-up.

International Building Code Provisions

The International Building Code (IBC) is a comprehensive set of regulations addressing the structural design and installation requirements for building systems – including HVAC and industrial refrigeration equipment. As of June 2008, all 50 states plus Washington D.C have adopted the International Building Code. The code provisions require that evaporative cooling equipment and all other components permanently installed on a structure must meet the same seismic design criteria as the building. The eco-ATWB-H Evaporative Closed Circuit Cooler is IBC compliant.

All items attached to the EVAPCO eco-ATWB-H Evaporative Closed Circuit Cooler must be independently reviewed and isolated to meet applicable wind and seismic loads. This includes piping, ductwork, conduit, and electrical connections. These items must be flexibly attached to the EVAPCO unit so as not to transmit additional loads to the equipment as a result of seismic or wind forces.

Structural Steel Support

8.5' (2.5m), 10' (3m) and 12' (3.6m) Wide Models

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. (See **Figure 1**.)

17' (5.2m), 20' (6m) and 24' (7.3m) Wide Models

Three structural "I" beams running the length of the unit are required for supporting the unit. Locate two beams underneath the outer flanges of the unit, and locate one beam longitudinally along the center of the unit. (See **Figure 2**)

All Models

Mounting holes, 3/4" (19mm) in diameter, are located in the bottom flange for bolting to the structural steel (see 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 to be 1/360 of the unit length, not to exceed 1/2" (13mm). 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 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.

Note: Consult IBC for required steel support layout and structural design.

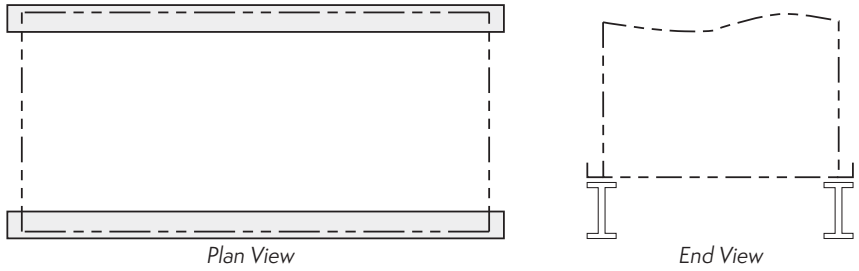


Figure 1 – Steel Support, 8.5' (2.5m), 10' (3m) and 12' (3.6m) wide models

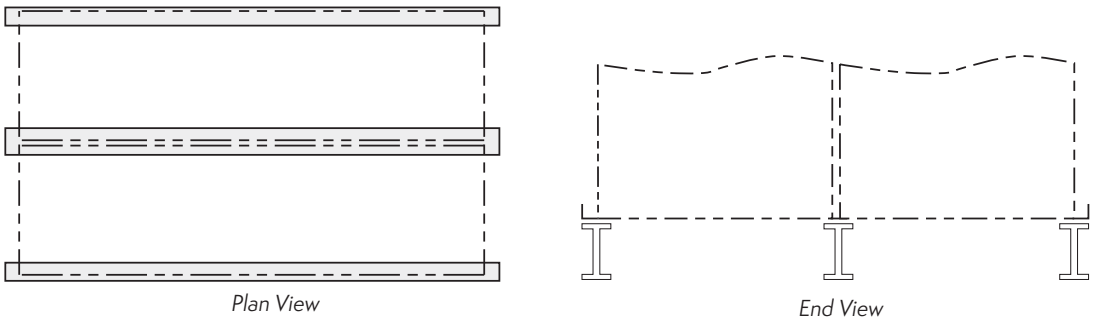


Figure 2 – Steel Support, 17' (5.2m), 20' (6m) and 24' (7.3m) wide models

Rigging Basin Sections

Lifting devices are located in the bottom corners of the basin section for lifting and final positioning purposes as shown in **Figures 3**. The hook of the crane must be a minimum dimension of "H" above the top of the section being lifted to prevent undue strain on the lifting devices. See **Table 1** for the minimum "H" dimension. These lifting devices should not be used for extended lifts or where any hazard exists unless safety slings are employed under the section. (See "Extended Lifts" section for proper arrangement.) Bolt the basin section to the steel support before rigging the coil/fan section.

Rigging Section Width	Rigging Section Length	Minimum "H" Dimension	Number of Lifting Devices
8.5 ft (2.5m)	9 ft (2.7m)	10 ft (3m)	4
	12 ft (3.6m)	15 ft (4.6m)	4
	14 ft (4.3m)	17 ft (5.2m)	4
	18 ft (5.5m)	19 ft (5.8m)	4
	21 ft (6.4m)	22 ft (6.7m)	4
10 ft (3m)	12 ft (3.6m)	15 ft (4.6m)	4
	18 ft (5.5m)	19 ft (5.8m)	4
12 ft (3.6m)	12 ft (3.6m)	15 ft (4.6m)	4
	14 ft (4.3m)	17 ft (5.2m)	4
	18 ft (5.5m)	19 ft (5.8m)	4
	20 ft (6m)	21 ft (6.4m)	4

Table 1 – Basin Sections Minimum "H" Dimension

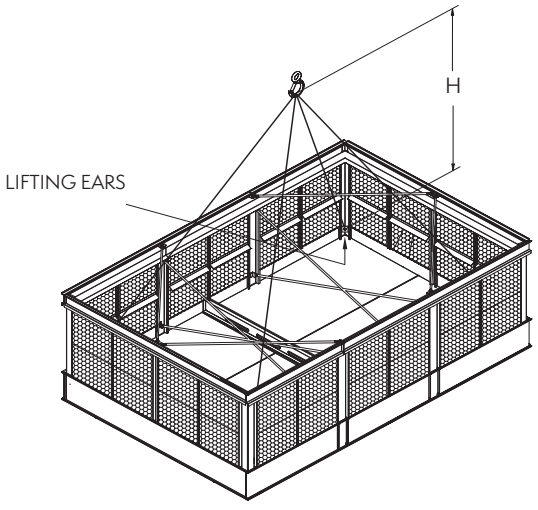


Figure 3 – Basin Section up to 21' (6.4m) long

Joining Multi-Cell Units Basin Sections

Basin Sections - 10′ (3m) & 12′ (3.6m) Wide Models (24′ (7.3m) to 40′ (12.2m) Long)

The bottom sections are shipped separately and are furnished with a connecting equalizer flume between them. In addition to the equalizer flumes, these units are provided with drip channels and splash guards to keep water from exiting between the cells. The equalizer flume is factory installed on one section for field connection to the other. It is important to connect the equalizer flume to balance the water level in the pans for proper pump suction operation. The following procedures are to be performed in sequence.

1. Install the basin section with the factory installed flume on it as described earlier.
2. Clean the flanges on the equalizer flume on the end to be field connected. Apply a layer of sealer tape on the flange centered between the hole centers and the outside edge. Remove paper backing strip from the sealer tape. (See **Figure 4**.)
3. Clean the mating surface of the equalizer opening of any dirt, grease or moisture.
4. Rig the second basin section adjacent to the equalizer flume on the steel support as shown in **Figure 5**.
5. Align the bolt holes in the equalizer flume and equalizer opening with drift pins (drift pins provided by others) while drawing the second basin section against the flanged connection.
6. Install 3/8" (10mm) bolts, nuts and washers in every hole around the equalizer opening and tighten. Cut off excess sealer tape.
7. Bolt the second basin section to the steel support.
8. Place the drip channel over the adjoining pan section flanges. Secure by installing 5/16" (8mm) self-tapping screws through the retaining clips into the end panels. For stainless steel construction, secure by installing 1/4" (6mm) stainless steel bolts through the retaining clips into brass rivnuts secured in the end panel. (See **Figure 6**.)
9. Place the vertical splash guard in the bend of the vertical supports. Attach the vertical splash guard using 5/16" (8mm) tappers. For stainless steel construction, attach the vertical splash guard using 5/16" (8mm) stainless steel nuts and bolts. (See **Figure 4**.)

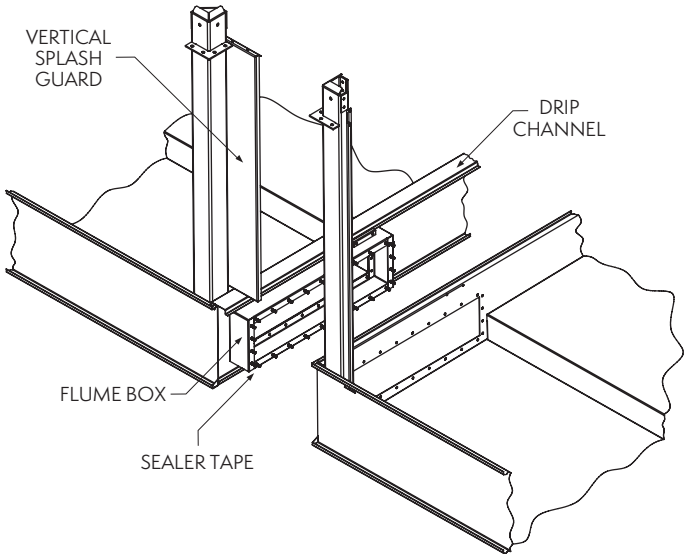


Figure 4 – Equalizer Flume Connection, 12′ (3.6m) Wide Models

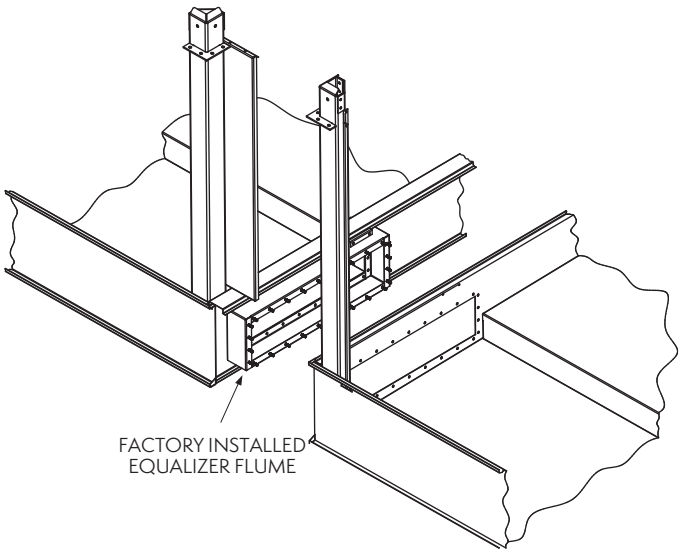


Figure 5 – Equalizer Flume Rigging Detail, 12′ (3.6m) Wide Models

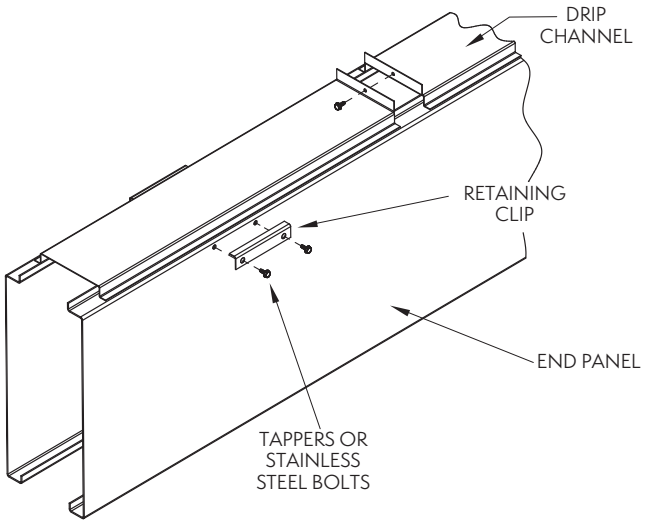


Figure 6 – Drip Channel Installation

Joining Multi-Cell Units Basin Sections

Basin Sections - 17′ (5.2m), 20′ (6m) & 24′ (7.3m) Wide Models (12′ (3.6m) to 20′ (6m) Long)

On 17′ (5.2m), 20′ (6m) and 24′ (7.3m) wide models the equalizer flume is located on the sides of adjoining basin sections. This flume is shipped loose and must be installed to both basin sections. In addition to the equalizer flume, these units are provided with drip channels and splash guards to keep water from exiting between the cells. The following procedure should be performed in order to assure proper assembly.

1. Install one basin section of the unit on structural steel and secure as described earlier.
2. Mating flanges which will make contact with others should be cleaned to remove dirt, grease and moisture. Apply a layer of sealer tape on one side panel centered over the flume box holes as shown in **Figure 7**. Remove paper backing strip from the sealer tape.
3. The side of the flume box which has studs installed in it should now be connected to the side panel. The studs are pushed through the sealer tape and holes of the side panel and are secured by washers, lock washers and nuts.
4. Clean the mating flanges on the equalizer flume on the end to be field connected. Apply a layer of sealer tape on the flange, centered between the hole centers and the outside edge. Remove paper backing strip from the sealer tape.
5. Clean the mating surface of the side panel of any dirt, grease or moisture. Rig the second basin section adjacent to the equalizer flume on the steel support.
6. Align the bolt holes in the equalizer flume and equalizer opening with drift pins while drawing the second basin section against the first as shown in **Figure 7**.
7. Install 3/8" (10mm) bolts, nuts and washers in every hole around the equalizer opening and tighten. Cut off excess sealer tape to prevent strainer blockage
8. Bolt the second basin section to the steel support.
9. Place the drip channel over the adjoining pan section flanges. Secure by installing 5/16" (8mm) self-tapping screws through the retaining clips into the side panel. For stainless steel construction, secure by installing 1/4" (6mm) stainless steel bolts through the retaining clips into brass rivnuts secured in the side panel. (See **Figures 7 & 8**.)
10. Fasten the drip channel sections together, end to end, by driving a self-tapping 5/16" (8mm) screw through the section end with the larger hole into the mating end with the smaller hole. Stainless steel units will use 5/16" (8mm) stainless steel nuts, bolts, and washers. (See **Figure 8**.)
11. Place the vertical splash guard in the bend of the vertical supports. Attach the vertical splash guard using 5/16" (8mm) tappers. For stainless steel construction, attach the vertical splash guard using 5/16" (8mm) stainless steel nuts and bolts.(See **Figure 9**.)

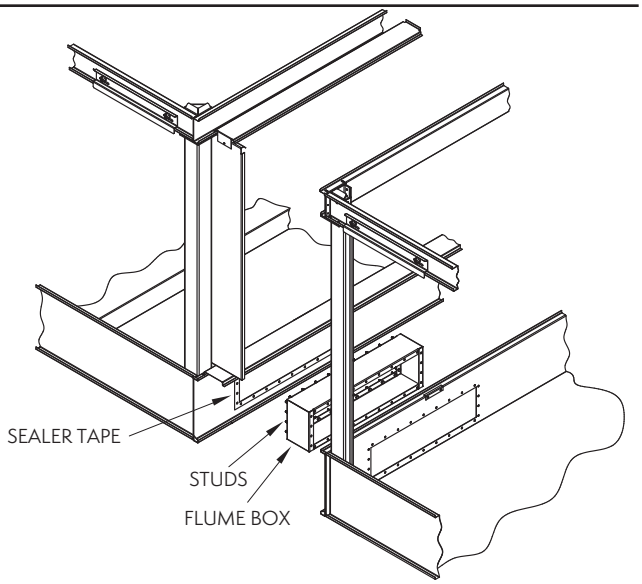


Figure 7 – Equalizer Flume Assembly, 17′ (5.2m), 20′ (6m) & 24′ (7.3m) Wide Models

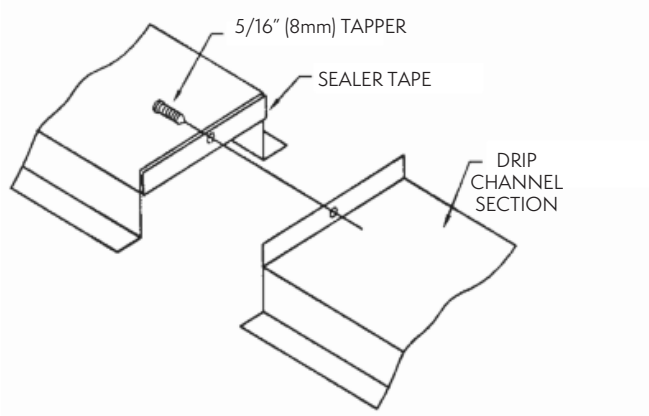


Figure 8 – Drip Channel Assembly

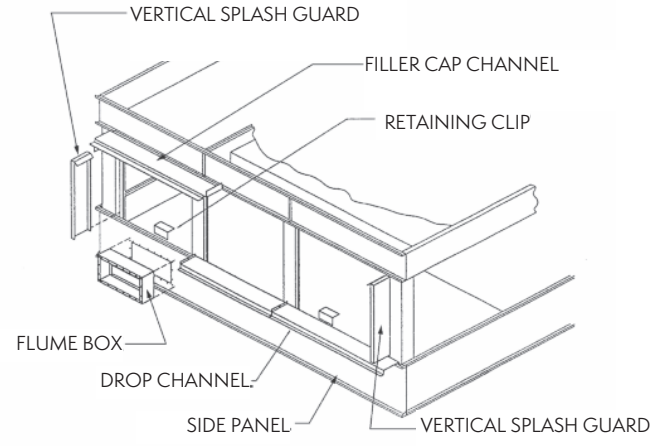


Figure 9 – Drip Channel and Splash Guards, 17′ (5.2m), 20′ (6m) & 24′ (7.3m) Wide Models

Applying Sealer Tape

Once the bottom section has been set on the supporting steel and bolted in place, the top flanges should be wiped down to remove any dirt or moisture. Sealer tape should be placed over the mounting hole centerline on the side flanges. Apply two strips of sealer tape, one partially overlapping the other, on the end flanges.

The sealer tape should overlap on the corners as shown in **Figure 10.** 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.**

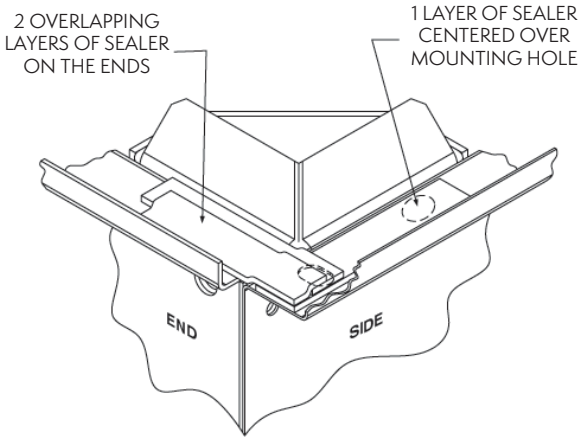


Figure 10 – Proper Sealer Tape Application

Rigging Coil Sections

Four lifting ears are provided in the lower corners of coil sections for lifting into final position. Some 18' (5.5m) long sections and longer will have two additional lifting ears in the middle of the section. Use all lifting ears. A spreader beam must be used for lifting the coil section(s) as shown in **Figures 11 and 12.** The hook of the crane must be a minimum dimension "H" above the top section being lifted to prevent undue strain on the lifting ears. See **Table 2** for the coil sections minimum "H" dimension.

These lifting devices should not be used for extended lifts or where any hazard exists unless safety slings are employed under the section. (See "Extended Lifts" for proper arrangement.)

Rigging Section Width	Rigging Section Length	Minimum "H" Dimension	Number of Lifting Devices
8.5 ft (2.5m)	9 ft (2.7m)	9 ft (2.7m)	4
	12 ft (3.6m)	12 ft (3.6m)	4
	14 ft (4.3m)	14 ft (4.3m)	4
	18 ft (5.5m)	17 ft (5.2m)	4
	21 ft (6.4m)	19 ft (5.8m)	4
10 ft (3m)	12 ft (3.6m)	12 ft (3.6m)	4
	18 ft (5.5m)	17 ft (5.2m)	6
12 ft (3.6m)	12 ft (3.6m)	12 ft (3.6m)	4
	14 ft (4.3m)	14 ft (4.3m)	4
	18 ft (5.5m)	17 ft (5.2m)	6
	20 ft (6m)	18 ft (5.5m)	6

Table 2 – Coil Sections Minimum "H" Dimension

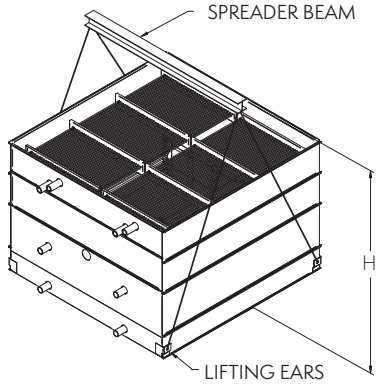


Figure 11 – Four Point Lift

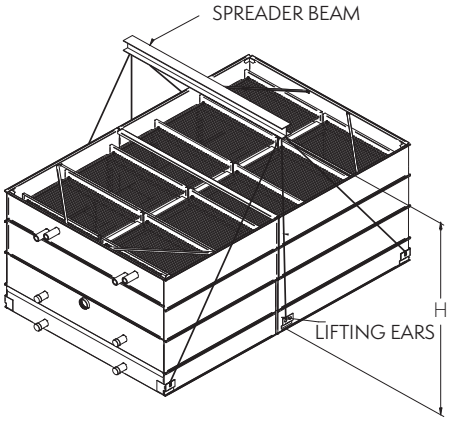


Figure 12 – Six Point Lift

Rigging Fan Section

The 8.5' (2.5m) wide one-fan unit fan sections will be provided with four U-Bolts located on the top of the fan deck. A spreader beam must be used for lifting the top section(s) as shown in **Figure 13a**. The 8.5' (2.6m) wide two-fan unit fan sections will be provided with eight U-Bolts located on the top of the fan deck as shown in **Figure 13b**.The 10' (3m) and 12' (3.6m) wide cell's fan sections will be provided with a lifting ear located on the motor support in addition to two U-Bolts located on the top of the fan deck (See **Figure 14**.) Use all lifting ears. The hook of the crane must be a minimum dimension "H" above the fan section being lifted to prevent undue strain on the lifting ears. See **Table 3** for the fan sections minimum "H" dimension.

These lifting devices should not be used for extended lifts or where any hazard exists unless safety slings are employed under the section. (See "Extended Lifts" for proper arrangement.) Note: For 8.5' (2.5m) and 17' (5.2m) wide models, mount the external motor prior to rigging as detailed in the "External Motor Installation" section.

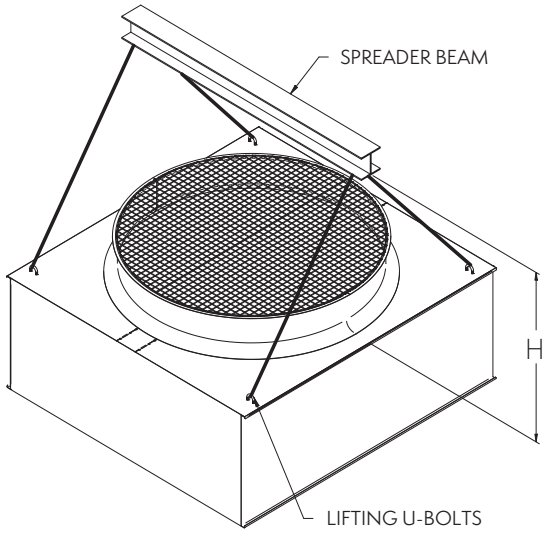


Figure 13a – 8.5'(2.5m) wide One-Fan Unit Fan Section

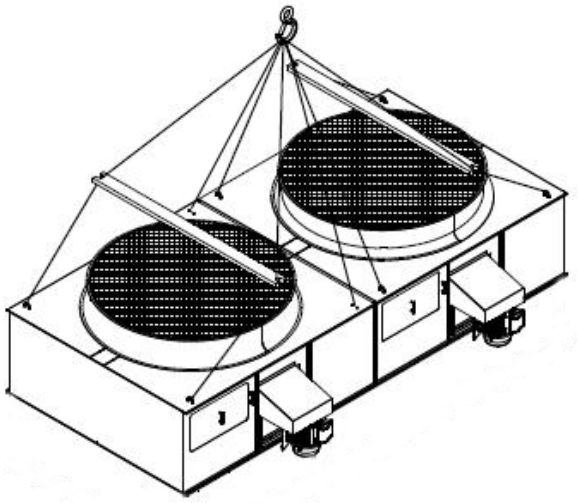


Figure 13b – 8.5'(2.5m) wide Two-Fan Unit Fan Section

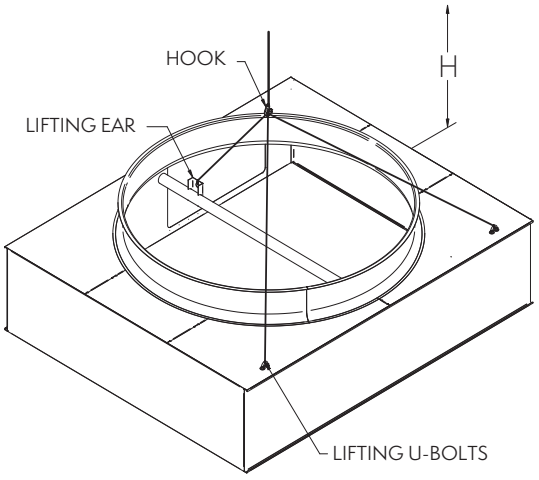


Figure 14 – Three Point Lift

Rigging Section Width	Rigging Section Length	Minimum "H" Dimension	Number of Lifting Devices
8.5 ft (2.5m)	9 ft (2.7m)	9 ft (2.7m)	4
	12 ft (3.6m)	12 ft (3.6m)	4
	14 ft (4.3m)	14 ft (4.3m)	4
	18 ft (5.5m)	17 ft (5.2m)	8
	21 ft (6.4m)	19 ft (5.8m)	8
10 ft (3m)	12 ft (3.6m)	12 ft (3.6m)	3
	18 ft (5.5m)	17 ft (5.2m)	3
12 ft (3.6m)	12 ft (3.6m)	12 ft (3.6m)	3
	14 ft (4.3m)	14 ft (4.3m)	3
	18 ft (5.5m)	17 ft (5.2m)	3
	20 ft (6m)	18 ft (5.5m)	3

Table 3 – Fan Sections Minimum "H" Dimension

Extended Lifts

IMPORTANT: The lifting devices and "U" bolts should be used for final positioning only and for lifting where no danger exists. If they are used for extended lifts, safety slings should be provided under the sections.

The preferred method for extended lifts is to use slings under the unit. (See **Figure 15.**) Spreader bars should always be used between the cables at the top of the section to prevent damage to the upper flanges or fan cylinders.

Safety slings and skids should be removed before final positioning of the unit. Refer to **Tables 1, 2 and 3** for minimum "H" dimensions.

Move basin extended lift and casing extended lift behind each standard section.

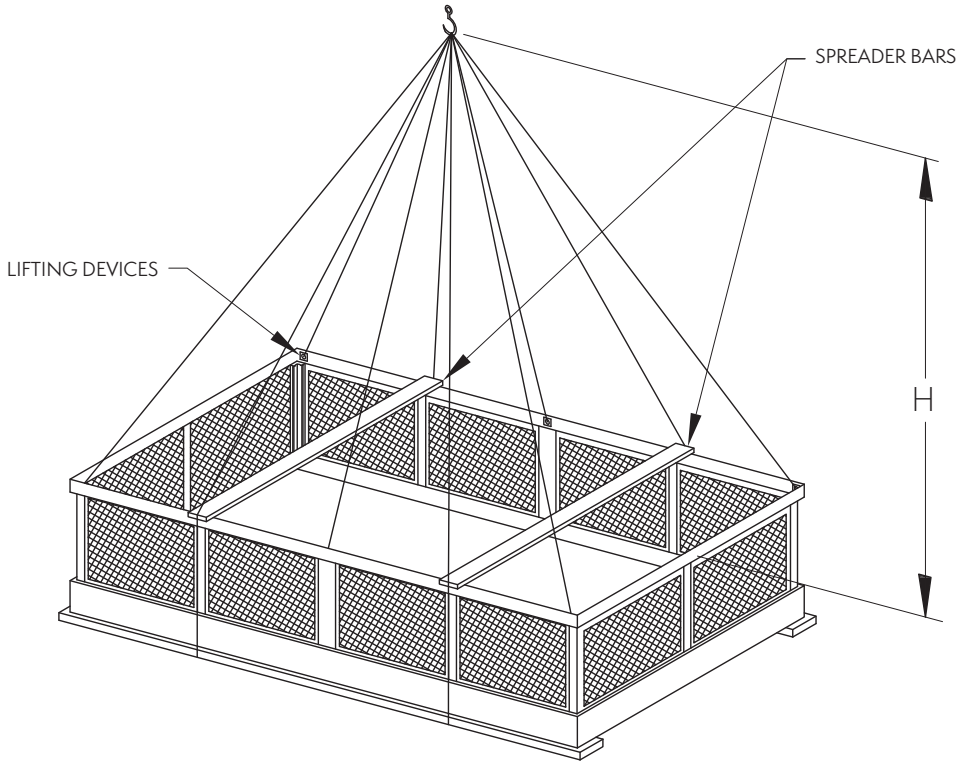


Figure 15 – Extended Lifts, Basin Section

Assembly of the Coil Section to the Basin Section

Section (8.5' (2.5m), 10' (3m) and 12' (3.6m) Wide Models)

Before assembling the coil section to the basin section, remove any loose parts shipped in the pan. Four lifting ears are provided in the corners of most coil sections for lifting into final position. 18' (5.5m), 20' (6m) and 21' (6.4m) long sections will have two additional lifting ears in the middle of the section. Use all lifting ears. When lifting the coil sections, use the lifting ears at the bottom of the coil section. The hook of the crane must be a minimum dimension "H" above the top section being lifted to prevent undue strain on the lifting ears. See **Table 2** for the minimum "H" dimension. These lifting devices should not be used for extended lifts or where any hazard exists unless safety slings are employed under the section. (See Extended Lifts' for proper arrangement.)

Before assembling the coil section to the basin section, wipe the flanges on the bottom of the coil section and apply sealer tape to the basin section. Check to see that the access doors are in the correct position relative to the coil section (see certified print). Units are also provided with match markings on each section, as shown in Appendix A. Place nuts and bolts in all four corner bolt holes. Then continue to install the rest of the nuts and bolts working from the corners towards the center. Nuts and bolts are required on the end flanges. Drift pins are provided in rigging box to assist with alignment.

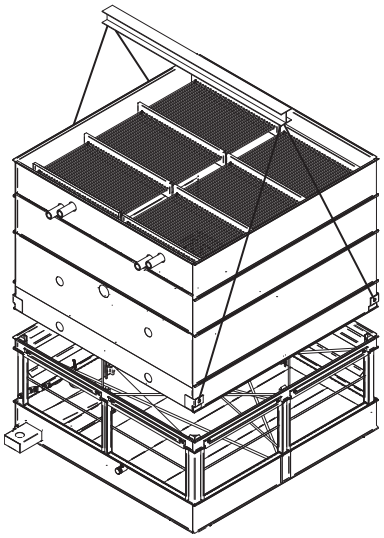


Figure 16 – Mating Upper Section to Basin Section

Note: 3/8" (10mm) stainless steel nuts, bolts and washers are used for stainless steel construction.

Assembly of the Fan Section to the Coil/Basin Section

Section (8.5' (2.5m), 10' (3m) and 12' (3.6m) Wide Models)

Lifting devices are provided on the top of fan sections for lifting into final position (See **Figure 17**). See page 7 for the number of lifting devices and their locations. Use all U-Bolts. The hook of the crane must be a minimum dimension "H" above the top section being lifted to prevent undue strain on the lifting ears. See **Table 3** for the minimum "H" dimension. These lifting devices should not be used for extended lifts or where any hazard exists unless safety slings are employed under the section. (See Extended Lifts' for proper arrangement.)
Note: For 8.5' (2.5m) wide models, mount the external motor prior to rigging as detailed in the "External Motor Installation" section.

Before assembling the fan section to the coil section, wipe the flanges on the bottom of the fan section and apply sealer tape. Check to see that the motor access doors are in the correct position relative to the coil section (see certified print). Units are also provided with match markings on each section, as shown in Appendix A. Place nuts and bolts in all four corner bolt holes. Then continue to install the rest of the nuts and bolts working from the corners towards the center. Nuts and bolts are required on the end flanges. Drift pins are provided in rigging box to assist with alignment.

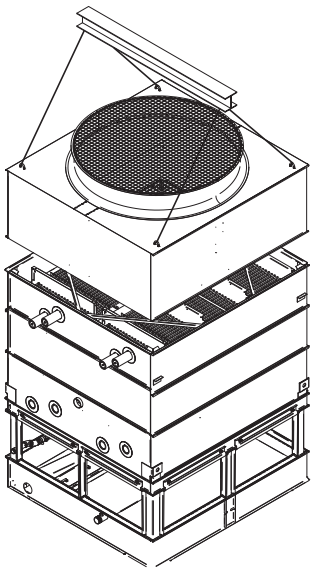


Figure 17 – Mating Fan Section to Coil/Basin

Note: 3/8" (10mm) stainless steel nuts, bolts and washers are used for stainless steel construction.

Assembly of the Fan Section to the Coil Section

Section (17' (5.2m), 20' (6m) and 24' (7.3m) Wide Models)

Fan Section Will Need To Be Mounted to the Coil Section First.

Lifting devices are provided on the top of fan sections for lifting into final position (See **Figure 18**). See page 7 for the number of lifting devices and their locations. Use all U-Bolts. The hook of the crane must be a minimum dimension "H" above the top section being lifted to prevent undue strain on the lifting ears. See **Table 3** for the minimum "H" dimension. These lifting devices should not be used for extended lifts or where any hazard exists unless safety slings are employed under the section. (See Extended Lifts' for proper arrangement.)
Note: For 17' (5.2m) wide models, mount the external motor prior to rigging as detailed in the "External Motor Installation" section.

Before assembling the fan section to the coil section, wipe the flanges on the bottom of the fan section and apply sealer tape. Check to see that the motor access doors are in the correct position relative to the coil section (see certified print). Units are also provided with match markings on each section, as shown in Appendix A. Place nuts and bolts in all four corner bolt holes. Then continue to install the rest of the nuts and bolts working from the corners towards the center. Nuts and bolts are required on the end flanges. Drift pins are provided in rigging box to assist with alignment.

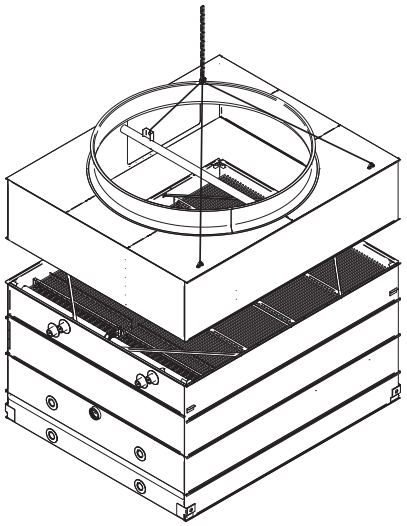


Figure 18 – Mating Fan Section to Coil Section

Note: 3/8" (10mm) stainless steel nuts, bolts and washers are used for stainless steel construction.

Assembly of the Fan/Coil Section to the Basin Section

Section (17' (5.2m), 20' (6m) and 24' (7.3m) Wide Models)

Before assembling the fan/coil section to the basin section, remove any loose parts shipped in the pan. Four lifting ears are provided in the corners of most coil sections for lifting into final position. 18' (5.5m), 20' (6m) and 21' (6.4m) long sections will have two additional lifting ears in the middle of the section. Use all lifting ears. When lifting assembled fan/coil sections, use the lifting ears at the bottom of the coil section and not the U-Bolts of the fan section. The hook of the crane must be a minimum dimension "H" above the top section being lifted to prevent undue strain on the lifting ears. See **Table 2** for the minimum "H" dimension. These lifting devices should not be used for extended lifts or where any hazard exists unless safety slings are employed under the section. (See Extended Lifts' for proper arrangement.)

Before assembling the fan/coil section to the basin section, wipe the flanges on the bottom of the coil section and apply sealer tape to the basin section. Check to see that the access doors are in the correct position relative to the basin section (see certified print). Units are also provided with match markings on each section, as shown in Appendix A. Place nuts and bolts in all four corner bolt holes. Then continue to install the rest of the nuts and bolts working from the corners towards the center. Nuts and bolts are required on the end flanges. Drift pins

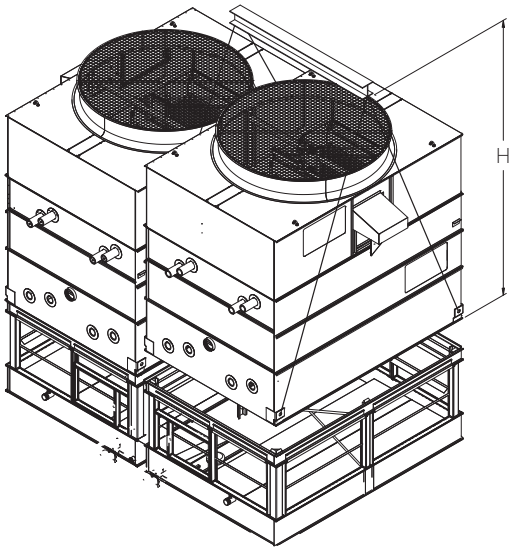


Figure 19 – Mating Fan/Coil Section to Basin Section

Note: 3/8" (10mm) stainless steel nuts, bolts and washers are used for stainless steel construction. For multi-cell units, the side flanges located in between cells can be accessed from inside the unit. Bolts can be driven upward through the mating flanges if access is restricted.

Mounting Fan Screens

10′ (3m) & 12′ (3.6m) Wide by 12′ (3.6m) or 24′ (7.3m) Long Models
20′ (6m) & 24′ (7.3m) Wide by 12′ (3.6m) Long Models
In certain situations some units may be shipped with the fan screens in the basin. Under these circumstances use the following procedures to mount the fan screen on the discharge cylinder.

WARNING: DO NOT WALK ON THE FAN SCREENS AT ANY TIME!

1. Place both halves of the fan screen on top of the discharge cylinder. Each half will be tagged to match markings on the cylinder. Align the eyelets of the fan screen with the holes that can be found on the perimeter of the discharge cylinder.
2. At each hole, attach the fan screen to the discharge cylinder as shown in **Figure 20**.
3. Join the two screen halves with wire clips (**Figure 21**). There should be 4 wire clips on each side of the fan screen. Space the wire clips evenly across the radius of the fan screen as shown in **Figure 22**.

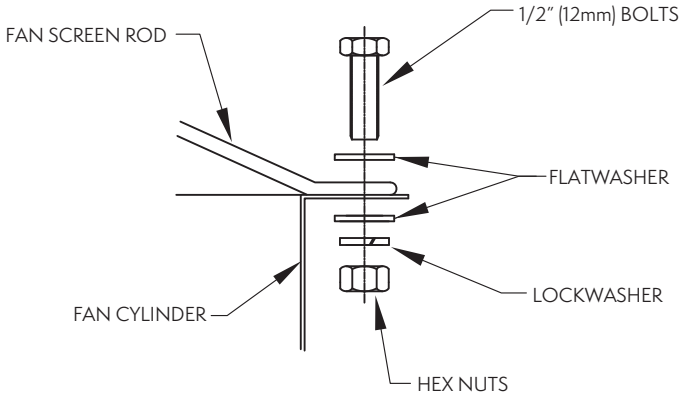


Figure 20 – Attaching Fan Screen to Cylinder

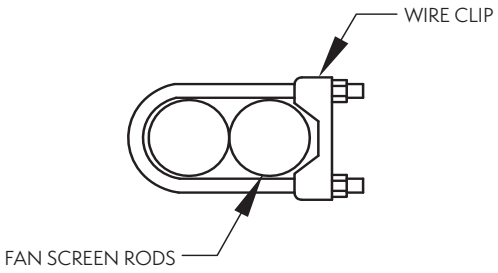


Figure 21 – Wire Clip Arrangement

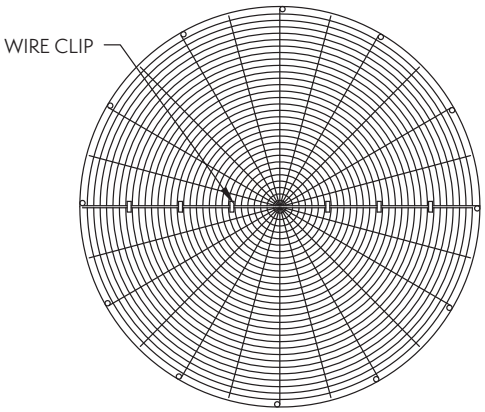


Figure 22 – Wire Clip Spacing

10′ (3m) & 12′ (3.6m) Wide by 14′ (4.3m) through 20′ (6m) Long Models
10′ (3m) & 12′ (3.6m) Wide by 28′ (8.5m) through 40′ (12.2m) Long Models
20′ (6m) & 24′ (7.3m) Wide by 14′ (4.3m) through 20′ (6m) Long Models

On these models, the fan screen is supported from underneath by an "X" shaped support frame.

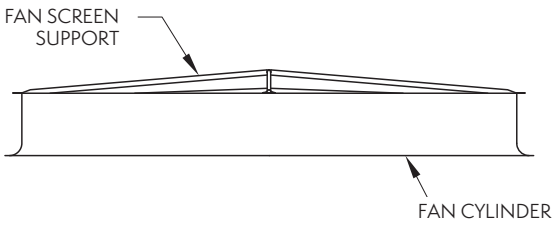


Figure 23 – Support Frame Installation

WARNING: DO NOT WALK ON THE FAN SCREENS AT ANY TIME!

1. Set the support frame across the top of the discharge cylinder (See **Figure 23**).
2. Place both halves of the fan screen on top of the support frame. Each half will be tagged to match markings on the cylinder. Align the eyelets of the fan screen with the holes on the cylinder perimeter.
3. Join the two screen halves with wire clips (See **Figure 21**). There should be four clips on either side of the fan screen. Space them evenly as shown in **Figure 22**.
4. At each hole, attach the fan screen to the discharge cylinder as shown in **Figure 20**. At the four points where the support frame meets the cylinder, bolt the support frame to the cylinder together with the fan screen.

Field Assembly of Optional Working Platform and Ladder

The working platform/ladder assemblies are shipped in the basin of the unit. In some cases they are shipped separately due to basin accessories that interfere with storage. The platform is partially assembled prior to shipment for minimal field assembly.

The platform and ladder assembly should be attached after the unit is fully rigged following the instructions below in Figure 24.

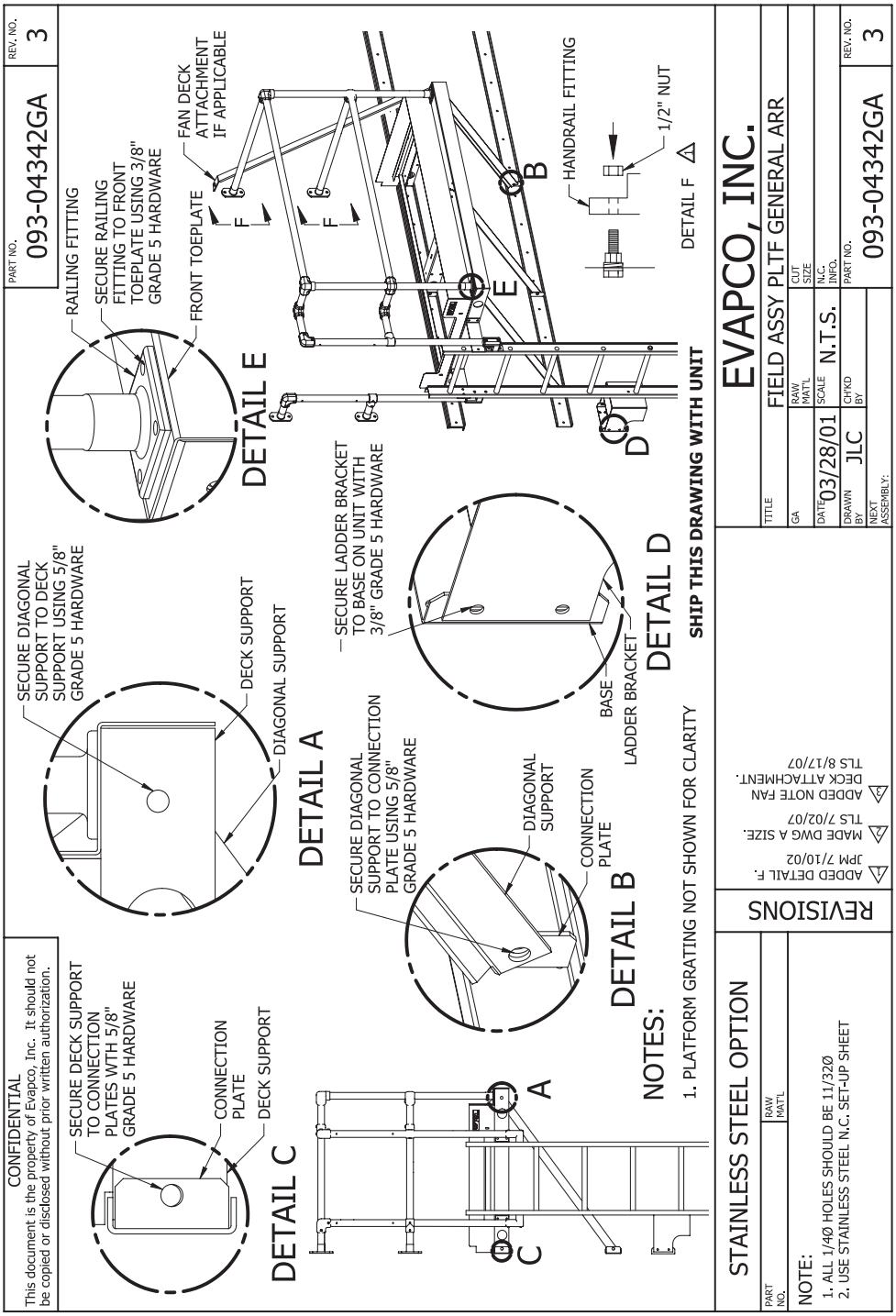


Figure 24 – Field Assembly of Optional Working Platform and Ladder

Optional Motor and Gear Box Davit 8.5' (2.5m), 10' (3m) and 12' (3.6m) Wide Cells

A removable, dual point motor davit is provided on 8.5' (2.5m), 10' (3m) and 12' (3.6m) wide cells for both the Powerband Belt Drive System and the optional gear drive system (**Figure 25**.)

This accessory is available to aid in the removal of fan motors and gear boxes. The assembly consists of a davit and a mounting base/channel that is attached to the side of the unit next to the access door. Both of these items will ship loose in the unit's basin.

Use the following procedure to install the mounting channel.

1. Place the mounting channel on the factory-installed mounting brackets near the access door.
2. At each hole, attached the mounting channel to the bracket using 3/8" (10mm) hardware as shown in **Figure 26**.

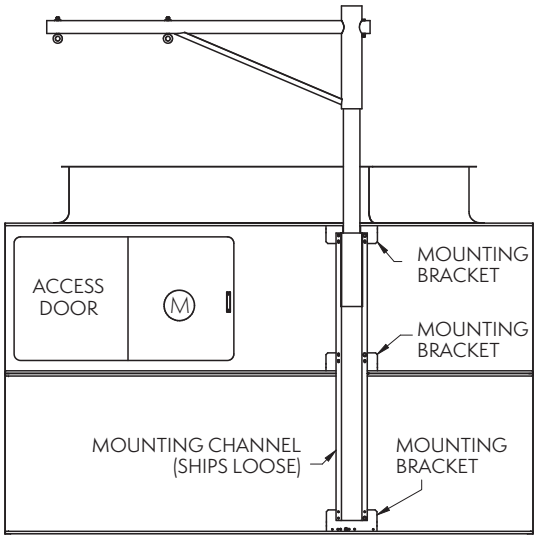


Figure 25 - Dual-Point Davit Arrangement

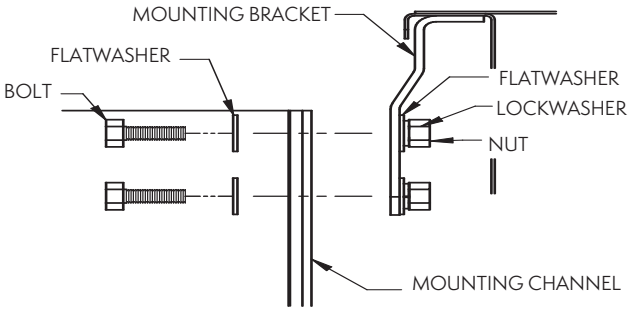


Figure 26 - Mounting Channel Installation

Optional Discharge Hood Damper

Section Assembly

Once the upper section (casing/fan section) has been secured to the bottom section, inspect the top of the upper section to ensure removal of any shipping blocks or other obstructions. Lower the discharge hood damper section onto the top of the upper section while aligning the holes located in each corner.

Place self-tapping bolts in all four corner bolt holes. Continue to install the rest of the self-tapping bolts working from the corners toward the center. A self-tapper must be installed in every hole on the side flanges although none are required on the end flanges.

NOTE: Do not use U-bolts to lift the discharge hood damper section when attached to another part of the equipment. Always lift the hood separately.

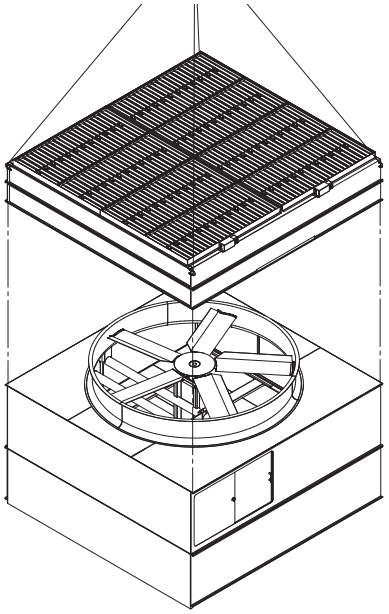


Figure 27 - Mating Discharge Hood Damper Section to Coil/Fan Section

External Motor Installation

8.5' (2.5m) and 17' (5.2m) Wide Models

Use the following procedure to install the mounting channel.

1. Study **Figure 28** before installing the motor base on the unit.
2. Insert the lifting device into "U" bolt A on motor base B.
3. Lift the motor base and insert the pivot pin C down into hole E and pivot pin F into hole D.
4. Install washer and nut (do not overtighten) on pivot pins. Install jam nut on pivot pin C.
5. Insert "J" bolts G into holes H. Install flat washers and cotter pins. Place nuts and washers on threaded portion of "J" bolts. These will be behind the motor base installed in the next step.
6. Insert "J" bolts into holes J in the motor base. Install flat washers, lock washer and nuts. Remove lifting device from the "U" bolt on the motor base. Position motor base toward casing of unit for belt installation.
7. Install Powerband belt K (**Figure 29**) around fan sheave and motor sheave. Tighten belt by adjusting nuts on "J" bolts. Do not overtighten the belts. The center of the belt should deflect approximately 3/4" (19mm) with moderate hand pressure.
8. Measure to see that the top and bottom of the motor base are the same distance out from the casing of the unit. This should ensure that the sheaves are properly aligned as they have been pre-set at the factory.
9. As a final check, lay a straight edge from sheave to sheave. There should be four point contact. (See **Figure 30**.) Adjust the position of the motor sheave as necessary.
10. To install Motor Guard L, match up hinges and install hinge pins M. (**See Figure 29**.)
11. Close Motor Guard and install (2) wing bolts N.

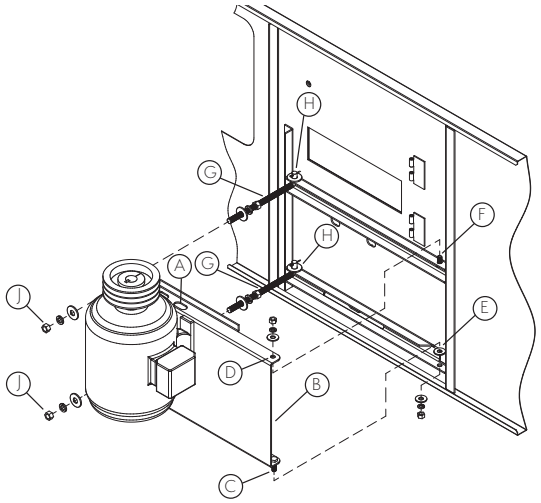


Figure 28 – External Motor Installation

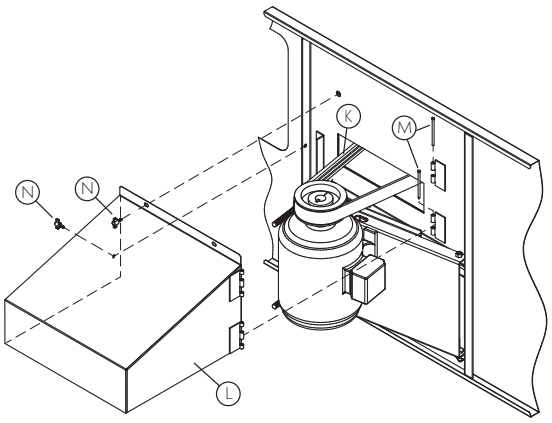


Figure 29 – Motor Guard and Powerband Belt Installation

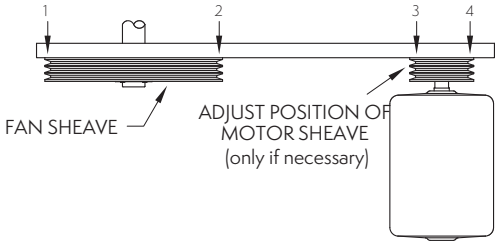


Figure 30 – Sheave Alignment Check

Start-Up Details

Debris
Clean all debris from the basin prior to start-up. Close and secure all access doors.

Pump Discharge Line
Connect the riser pipe from the pump discharge on the basin section to the riser pipe on the coil/fan 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.

Strainer
Check the strainers, if applicable, in the basin section to make certain they are in the proper location over the pump suction, along side of the anti-vortex hood. (See **Figure 31**.)

Screens
Protective fan screens are provided across the top of the fan cylinders of all models. Check and tighten all bolts.

Float Valve Adjustment
The float valve is pre-set at the factory; however, adjustment should be checked after rigging. The float valve should be adjusted so that the centerline of the float is at the measurement shown in **Table 4** from the basin bottom. Raise or lower the float by using the wing nuts on the vertical threaded rod only. Do not adjust the horizontal rod.

Starting Sequence
Before starting the unit, check that all access openings, safety screens and covers are in place. Start the unit as outlined below:

1. Fill the pan to the overflow level.
2. Bump start and check the spray water pump(s) for proper rotation. Directional arrows are found on the pump impeller housing.
3. Bump start and check the fan(s) for proper rotation. Directional arrows are placed on the side of the fan cylinder.

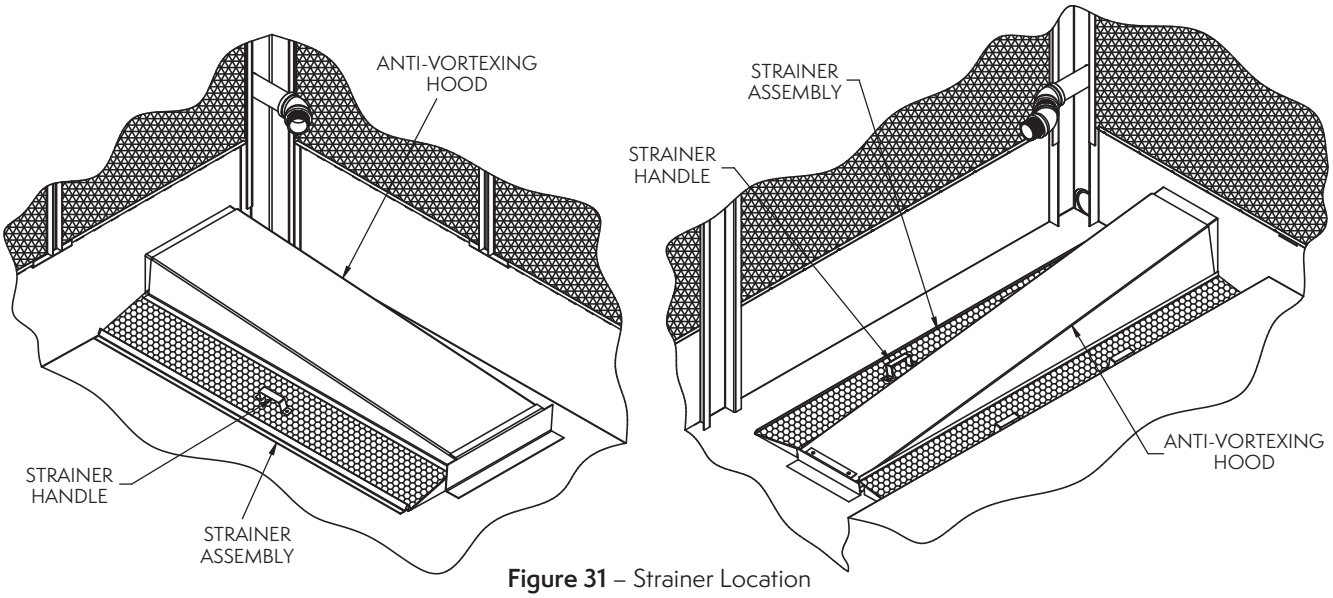


Figure 31 – Strainer Location

Unit Length	Level
All Models	11 inches (300mm)

Table 4 – Float Valve Adjustment 8.5' (2.5m) through 24' (7.3m) Wide Models

Maintenance

Once the 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 full performance of the unit. Refer to the maintenance instructions enclosed with the unit for proper maintenance procedures.

Protection

Proper freeze protection must be provided if the unit is located in a cold climate. Refer to maintenance instructions as well as product bulletins for further information.

Rigging Hardware Parts List

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

Unit No.	Flume Hardware	Rigging Joint Hardware	Sealer Tape	ZM® Nozzles
eco-ATWB-H 9x9	0	14	4	2
eco-ATWB-H 9x12	0	18	5	2
eco-ATWB-H 9x14	0	22	5	2
eco-ATWB-H 9x18	0	26	5	2
eco-ATWB-H 9x21	0	30	6	2
eco-ATWB-H 17x12	22	36	10	2
eco-ATWB-H 17x 14	22	44	10	2
eco-ATWB-H 12x12	0	18	5	2
eco-ATWB-H 12x14	0	22	6	2
eco-ATWB-H 12x18	0	26	6	3
eco-ATWB-H 12x20	0	30	7	3
eco-ATWB-H 12x24	26	36	10	3
eco-ATWB-H 12x28	26	44	12	3
eco-ATWB-H 12x36	26	52	12	4
eco-ATWB-H 12x40	26	60	14	4
eco-ATWB-H 24x12	26	36	10	3
eco-ATWB-H 24x14	26	44	12	3
eco-ATWB-H 24x18	26	52	12	4
eco-ATWB-H 24x20	26	60	14	4

Table 5 – Rigging Hardware

Notes:
1. 3/8 x 1-1/2" (10mm x 38mm) bolt, hex nut, lockwasher, flat washer.
2. 5/16 x 1" (8mm x 25mm) or 3/8 x 1" (10mm x 25mm) tapper. Stainless units use 5/16" (8mm) nuts and bolts.

Accessory Location Checklist

Accessories can ship in a variety of locations depending on the type of accessory, the size of the unit and the accessories purchased with the unit. See **Table 6** for a guide to accessory location.

Unit Accessories	Shipping Location
Aluminum Ladder	Shipping Location is Unit and Accessory Dependent - If Space is Available: Strapped Inside Unit Basin - If No Space is Available: Shipped Separately on Truck Bed
Cap Channels for Multi Cell Units	Strapped Inside Unit Basin
Discharge Attenuation	Mounted Loosely, Bolted on Basin
Discharge Hood with Dampers	Mounted Loosely, Bolted on Basin
Electric Basin Heater	Shipping Location is Unit Dependent - End Mounted Heater: Installed in Unit Basin - Side Mounted Heater: Strapped Inside Unit Basin
Electric Basin Heater Control Panel	Shipping Location is Dependent on Control Panel Size - If Space is Available: Mounted on Unit Basin - If No Space is Available: Boxed, Wrapped and Wire Tied Inside Unit Basin
Electric Basin Heater Low Water Cutout	Shipped in Rigging Box
Electric Basin Heater Thermostat	Shipping Location is Unit Dependent - End Mounted Thermostat: Mounted on Unit Basin - Side Mounted Thermostat: Shipped in Rigging Box
Electronic Water Level Control Probes	Mounted in PVC standpipe
Electronic Water Level Control PVC Standpipe	Strapped Inside Unit Basin
External Service Platform with Ladder	Shipping Location is Unit and Accessory Dependent - If Space is Available: Strapped Inside Unit Basin - If No Space is Available: Crated and Shipped Separately on Truck Bed
Factory Mounted Crossover Piping	Welded to Coil Connections
Fan Screens (If not mounted)	Shipping Location is Unit and Accessory Dependent - If Space is Available: Strapped Inside Unit Basin - If No Space is Available: Crated and Shipped Separately on Truck Bed
Fan Screens (If not mounted)	Shipping Location is Unit and Accessory Dependent - If Space is Available: Strapped Inside Unit Basin - If No Space is Available: Crated and Shipped Separately on Truck Bed
Flume Plate	Mounted to Flume Box
Hot Water or Steam Coil	Installed in Unit Basin
Low Water Cutoff for Pump	Shipped in Rigging Box
Remote Sump Trash Screen	Installed In Unit Basin
Rigging Hardware	Shipped in Rigging Box
Safety Cage	Attached to the Ladder
Sealer Tape	Shipped in Rigging Box
Splash Guards for Multi Cell Units	Strapped Inside Unit Basin
Sump Sweeper Piping with and without High Flow Eductors	Installed in Unit Basin
Vibration Isolation Rails	Shipping Location is Unit and Accessory Dependent - If Space is Available: Strapped Inside Unit Basin - If No Space is Available: Shipped Separately on Truck Bed
Vibration Switch	Mounted in Fan Section
Motor Davit and Base	Shipping Location is Unit and Accessory Dependent - If Space is Available: Strapped Inside Unit Basin - If No Space is Available: Crated and Shipped Separately on Truck Bed
Water Level Indicator	Strapped Inside Unit Basin
Water Silencers	Installed in Unit Basin

Table 6 – Unit Accessory Shipping Location

Appendix A

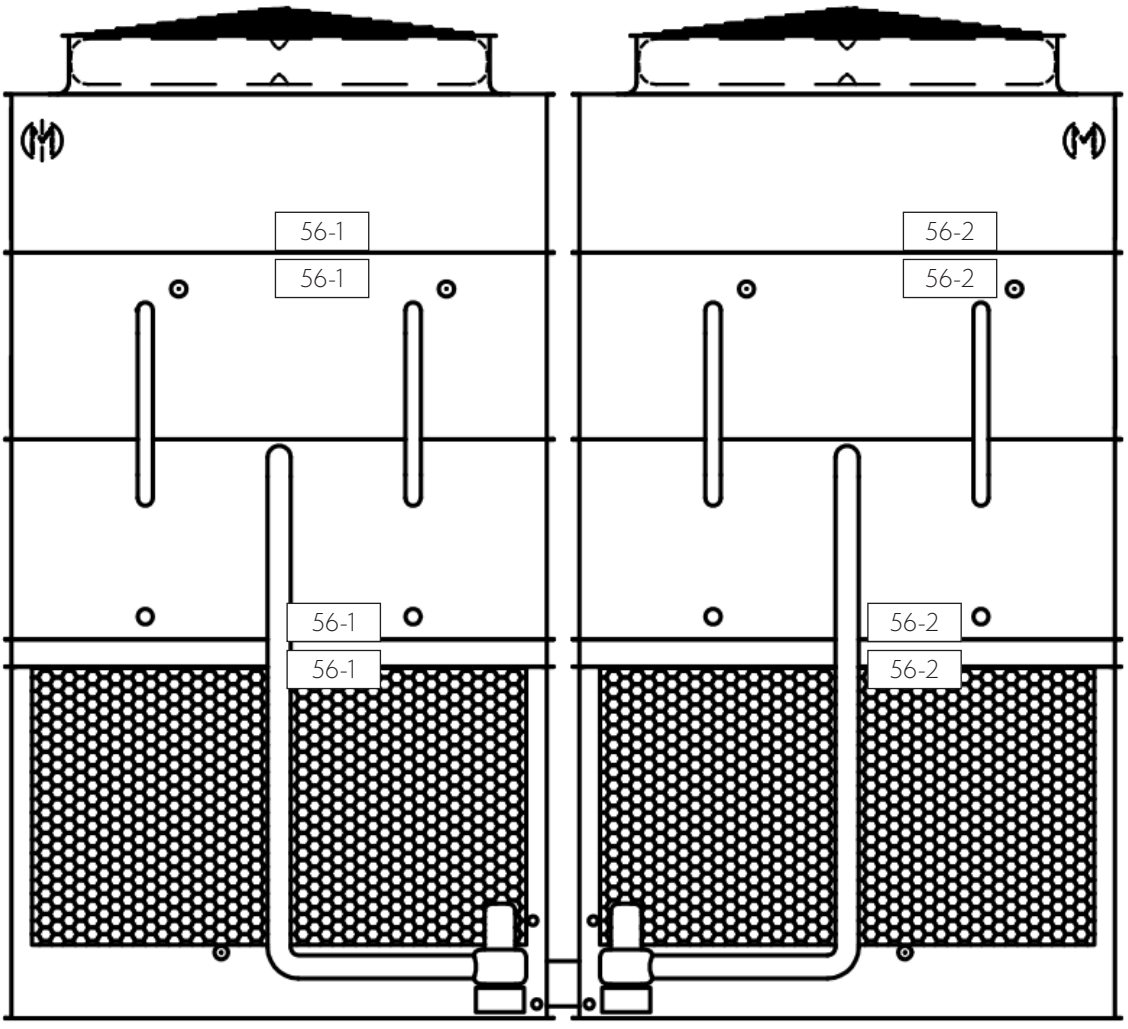
Units are provided with match markings on each section. Standard match marking location is at the rigging seam on the connection face. Standard match marking designation is shown below:

XX – Y
- Y: Cell Number Designator
- XX: Last 2 Digits of Serial Number

Example:

Serial Number: 23p123456 Number of Cells: 2

Match Marks: Cell #1: 56-1 Cell #2: 56-2



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