



Rigging and Assembly Instructions

MTW Closed Circuit Fluid Coolers & MTC Evaporative Condensers

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Introduction

Thank you for purchasing your EVAPCO closed circuit fluid cooler or evaporative condenser. This manual will provide instructions for installation of MT closed circuit fluid coolers and evaporative condensers. If any questions arise during the installation, please contact your local EVAPCO representative or your local Evapco Headquarters.

Method of Shipment

All 4’ wide units are shipped as one fully assembled unit. All other units ship in 2 partially assembled sections. Refer to Table 1 below for the section of this manual to reference on your specific closed circuit fluid cooler or evaporative condenser model. Miscellaneous items such as sealer, bolts, nuts, washers and any other required materials are packaged and placed inside the basin or on the truck for shipment.

Before commencement of rigging and assembly, ensure all loose articles are removed from the basin. All personnel carrying out the rigging and assembly of any EVAPCO Closed Circuit Fluid Cooler or Evaporative Condenser should adhere to specific site safety rules and regulations. All equipment utilised must conform to Australian standards and relevant Workplace Health & Safety regulations, and must be used in accordance with the manufacturer’s instructions.

MTW Models	MTC Models	Box Size	Section	Page
MTW 4-3F6 to MTW 4-5G6	MTC-49A to MTC-79A	All 4x4	A	3
MTW 4-3E9 to MTW 4-5F9	MTC-80A to MTC-115A	All 4x9		
MTW 8-3G8 to MTW 8-4J8	MTC-134A to MTC-202A	8x8, < 3880mm tall	B	4
MTW 8-5G8 to MTW 8-5J8	MTC-117A to MTC-223	All remaining 8x8	C	5
MTW 8-3H12 to MTW 8-5L12	MTC-205A to MTC-348A	8x12		
MTW 10-3G10 to MTW 10-5M10	MTC-191A to MTC-373A	10x10		
MTW 11-3I11 to MTC 11-6N11	MTC-288A to MTC-524A	11x11		
MTW 12-3I12 to MTW 12-6N12	MTC-305A to MTC-557A	12x12		

Table 1 Rigging Manual Reference According to Model Number and Box Size

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 and/or PVC louvers. For extended storage beyond six months rotate the fan and fan motor shaft(s) monthly. The fan shaft bearings should also be purged and regreased prior to start-up if it has been stored.

Section A: Units Shipped Fully Assembled

All 4' wide units ship as one fully assembled section. All four (4) lifting ears on the casing section are to be used for lifting and final positioning of the unit, as shown in Figure 1 and Figure 2. Spreader bars are recommended for the lift and must be a minimum dimension of "H" above the lifting ears. See Table 2 for minimum "H" dimensions.

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" on page 10 for proper arrangement)

Ensure the unit orientation is correct with respect to pipe work before bolting down using an M16 concrete bolt (if using recommended pier support).

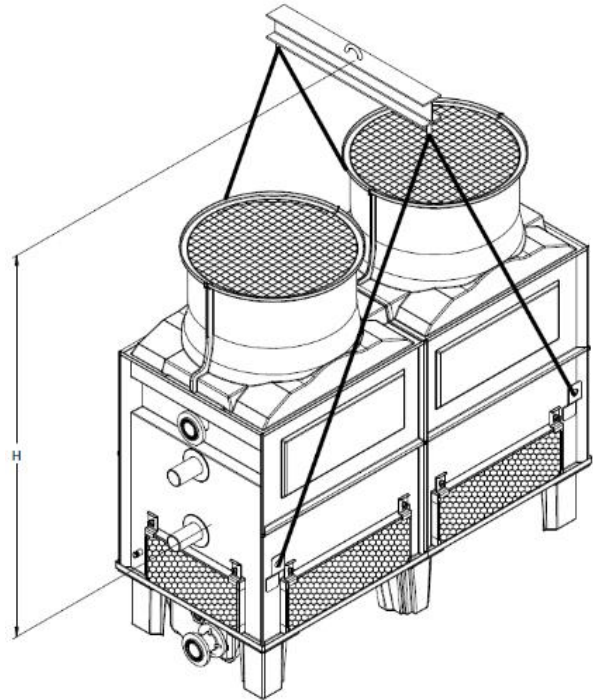


Figure 2 - Fully Assembled Unit, All 4'x9' models

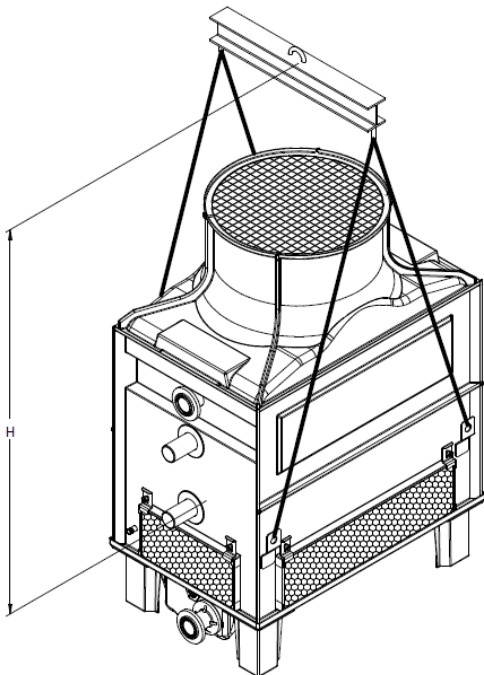


Figure 1 - Fully Assembled Unit, All 4'x6' models

Box Size (ftxft)	Min "H" Dim, Spreader Bar (ft/mm)
4x6	9 / 2743
4x9	10 / 3048

Table 2 – Minimum "H" Dimension

Section B: Units Shipped with Casing Section Attached to Basin Section

The unit shall arrive in two sections; the casing section bolted to the basin with and the fan section separately. The unit **may not** be rigged as a fully assembled tower.

Rigging Basin-Casing Section

Lifting Ears are located on the sides of the casing section for lifting and final positioning purposes as shown in Figure 3. The spreader bar of the crane must be a minimum dimension of "H" above the top of the lifting ears to prevent undue strain on the lifting devices. 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" on page 10 for proper arrangement.)

Bolt the basin-casing section to the plinths or steel supports and **remove the timber from the top of the casing section** prior to installing the fan.

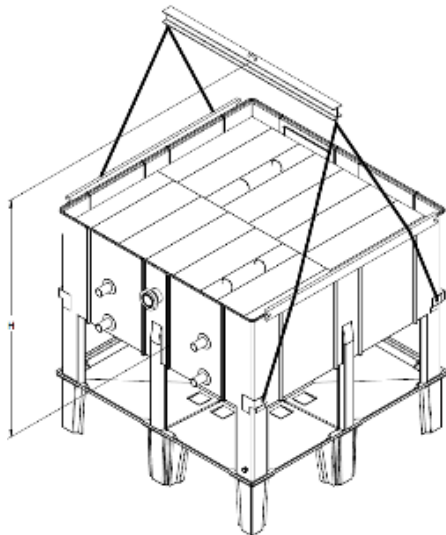


Figure 3 – Casing and Basin Rigging

Box Size (ftxft)	Min "H" Dim, Spreader Bar (ft/mm)
8x8	10 / 3048

Table 3 – Minimum "H" Dimension for Rigging Basin-Casing Sections

Rigging Fan Section

All fan sections are to be rigged as a four-point lift. The four pick points are on the mechanical equipment support as shown in Figure 4. The hook of the crane must be a minimum dimension "H" above the top section being lifted to prevent undue strain on the lifting lugs and the fiberglass. See Table 4 for the minimum "H" dimensions.

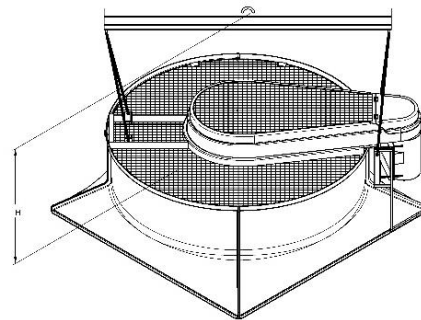


Figure 4 – Fan Section Rigging

Box Size (ftxft)	Min "H" Dim, Spreader Bar (ft/mm)
8x8	8 / 2438

Table 4 – Minimum "H" Dimension for Rigging Fan Section

The installer must ensure that the fan section is oriented such that the motor is accessible for maintenance. Orientation markings are on the individual fan sections to assist the installer.

The fan section will be set directly on top of the casing as shown in Figure 5 **No sealer tape is required between the fan and casing sections.**

Bolt the two sections together with the hardware provided in the rigging box as shown in Figure 6.

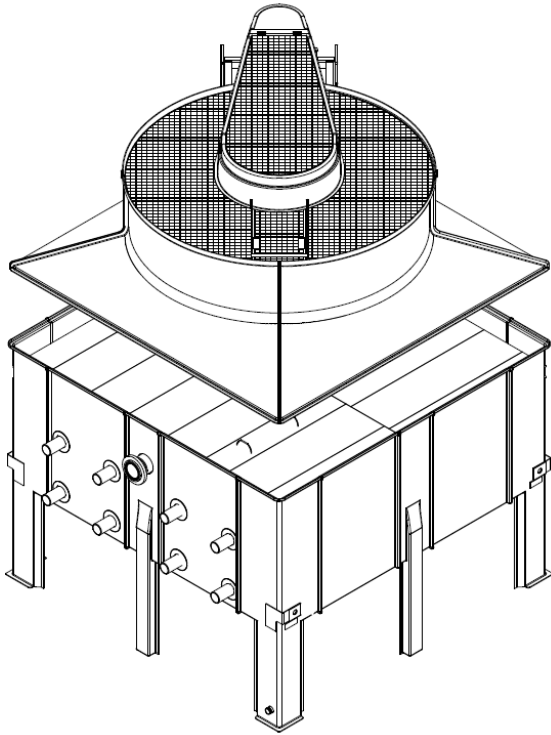


Figure 5 – Fan Section above Casing

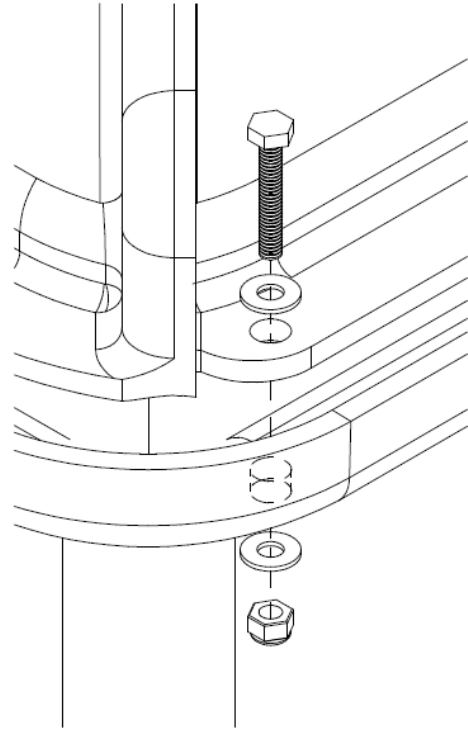


Figure 6 – Attachment Point

Section C: Units Shipped with Fan Section Sitting on Basin Section

These units shall arrive in two sections, the fan section shall be on the basin and the casing section separate. These units **may not** be rigged as a fully assembled tower.

Rigging Fan Section

The fan section should first be detached and lifted from the basin. All fan sections are to be rigged as a four-point lift. The four pick points are on the mechanical equipment support as shown in Figure 7. The hook of the crane or spreader bar must be a minimum dimension “H” above the top section being lifted to prevent undue strain on the lifting lugs and the fiberglass. See Table 5 for the minimum “H” dimensions.

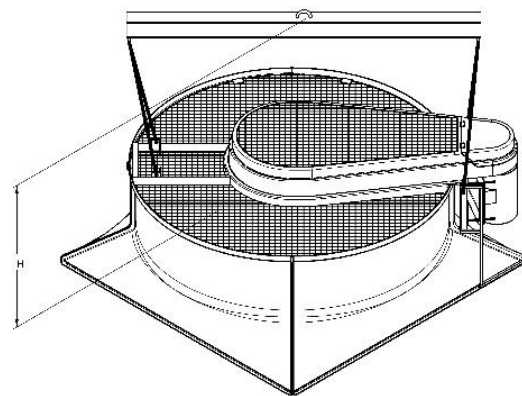


Figure 7 – Fan Section Rigging

Box Size (ft x ft)	Min "H" Dim Spreader Bar (ft/mm)
8x8 8x12	8 / 2438
10x10 11x11 12x12	10 / 3048

Table 5 – Minimum "H" Dimension for Rigging Fan Section

If the basin and fan section is required to be picked at the same time, then pass soft slings under the basin between the corner feet according to Figure 8. The minimum H dimension can be found in Table 6.

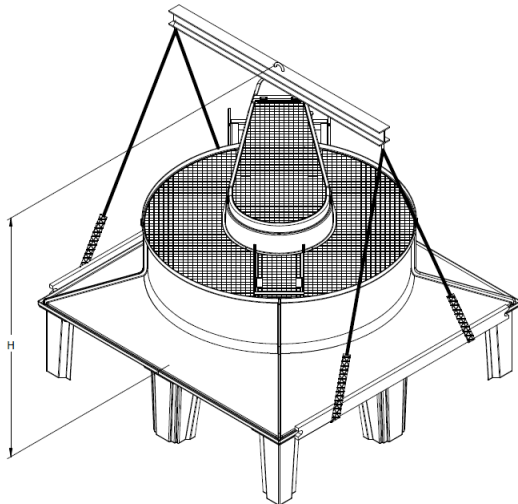


Figure 8 – Lifting Fan and Basin Sections Together

Box Size (ft x ft)	Min "H" Dim Spreader Bar (ft/mm)
8x8	8 / 2438
8x12 10x10 11x11 12x12	12 / 3658

Table 6 – Minimum "H" Dimensions for Rigging the Basin Section

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" on page 10 for proper arrangement.)

The installer must ensure that the fan section is oriented such that the motor is accessible for maintenance. Orientation markings are on the individual fan sections to assist the installer. The fan section will then be set directly on top of the casing as shown in Figure 9. **No sealer tape is required between the fan and casing sections.**

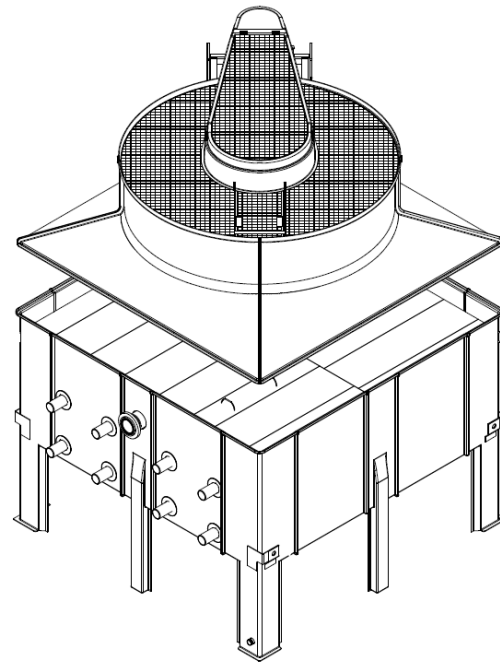


Figure 9 – Fan Section above Casing

Bolt the two sections together with the hardware provided in the rigging box as shown in Figure 10.

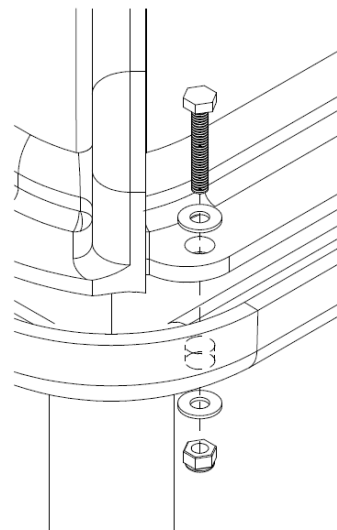


Figure 10 – Attachment Point

Rigging Basin Section

The basin sections are placed into position using soft slings. Pass the slings below and between the basin and basin feet as shown in Figure 11. The spreader bar of the crane must be a minimum dimension of “H” above the lip of the basin to prevent undue strain on the fiberglass. Refer to Table 7 for the minimum “H” dimensions. Ensure that the basin is oriented correctly with respect to the pipe work and the rest of the unit. Then, bolt the basin to the plinths (hardware not provided).

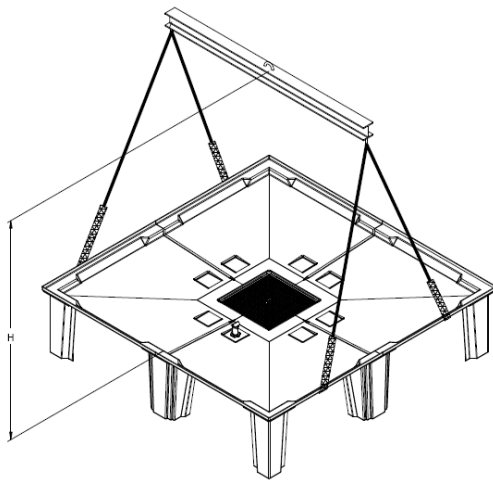


Figure 11 – Basin Section Rigging

Box Size (ft x ft)	Min “H” Dim Spreader Bar (ft / mm)
8 x 8	8 / 2438
8 x 12 10 x 10 11 x 11 12 x 12	12 / 3658

Table 7 – Minimum “H” Dimension for Rigging Basin Section

Sealer Tape Application

Before assembling the basin and casing section, wipe the perimeter of the basin lip to remove any dirt or moisture. Two strips of sealer tape should be placed over the mounting hole centreline at the corner and intermediate bolting locations. At the corner and intermediate attachments, ensure that the sealer tape overlap as showing in Figure 12 and Figure 13.

Always remove the paper backing from the sealer tape.

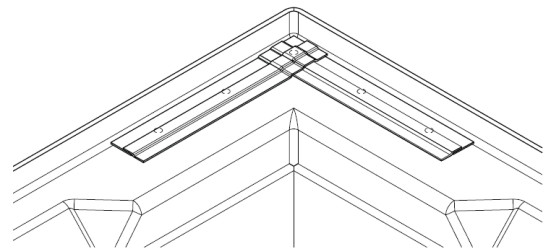


Figure 12 – Corner Sealer Tape Application

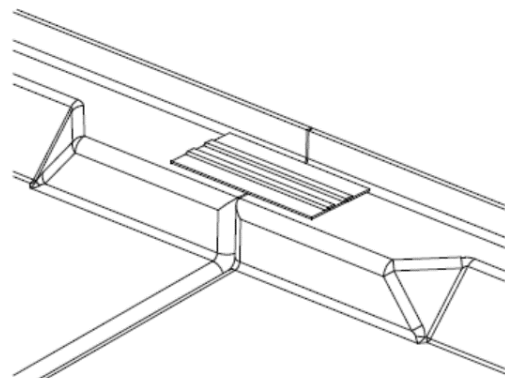


Figure 13 – Intermediate Sealer Tape Application

Rigging Fan-Casing Sections

All casing sections are to be rigged as a four-point lift. The four pick points are on the side of the tower as shown in Figure 14. The hook of the crane must be a minimum dimension “H” above the lifting ears to prevent undue strain on the lifting lugs and fiberglass. See Table 8 for the minimum “H” dimensions.

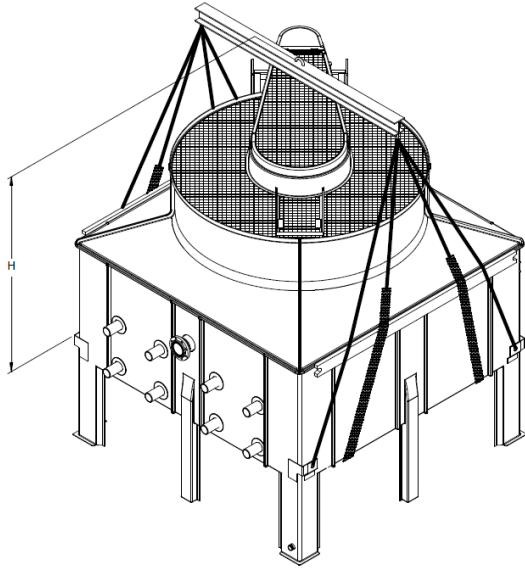


Figure 14 – Fan Casing Section Rigging

Box Size (ft x ft)	Min “H” Dim Spreader Bar (ft/mm)
8x8	10 / 3048
8x12 10x10 11x11 12x12	12 / 3658

Table 8 – Minimum “H” Dimension for Rigging Fan-Casing Section

Lower the fan-casing section and place it on the basin section as shown in Figure 15 and Figure 16. Bolt the two sections together with the hardware provided in the rigging box. Orientation markings are on the individual sections to assist the installer with assembly.



Figure 15 – Corner Attachment

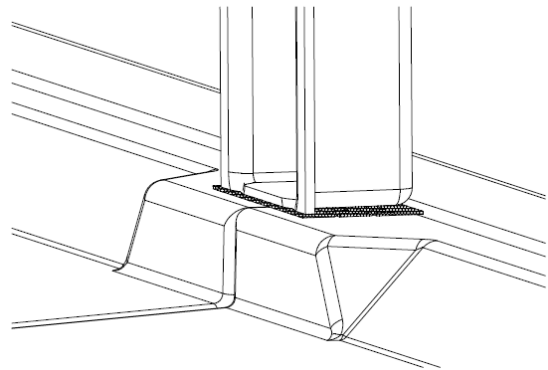


Figure 16 – Intermediate Attachment

Pump Installation

The pump and associated pipework is packaged and shipped loose from the unit. Once final assembly of the whole unit is completed, install the pump and pipework. Hardware is provided in the rigging box.

8' Wide Units

The bottom vertical riser assembly and pump assembly are fitted at the factory and shipped as a sub-assembly. Lift the sub-assembly and fix onto the pump bracket using M10 bolts. Install the top vertical riser assembly and pump suction assembly with reference to Figure 17 for 8'x8' units and Figure 18 for 8'x12' units.

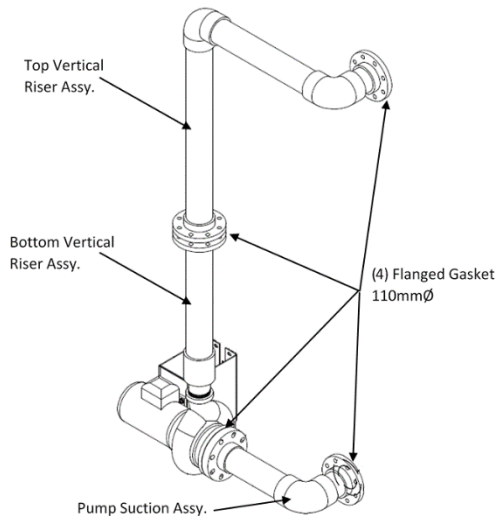


Figure 17 – Water Distribution Assembly (8'x8' models)

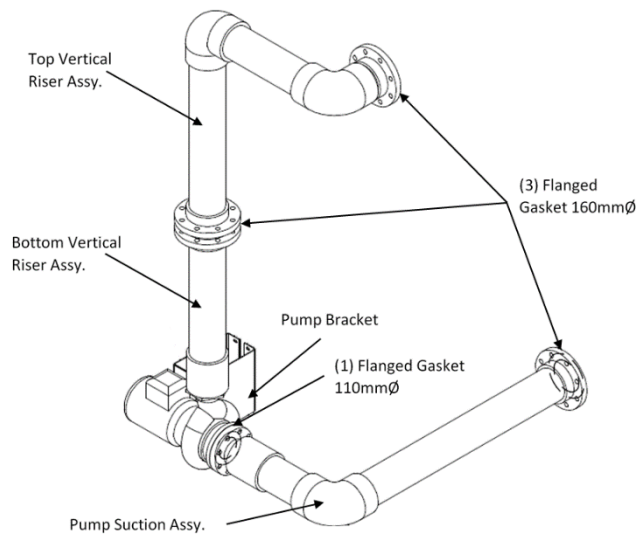


Figure 18 – Water Distribution Assembly (8'x12' models)

10' 11' & 12' Wide Units

Remove the FRP foot from the basin and position the pump stand such that it is supporting the basin. A strip of sealer tape should be placed on the steel frame between the pump and the FRP basin. Fix the pump stand and basin together using M10 bolts.

Connect the pump suction assembly followed by the bottom and vertical riser assemblies with reference to Figure 19.

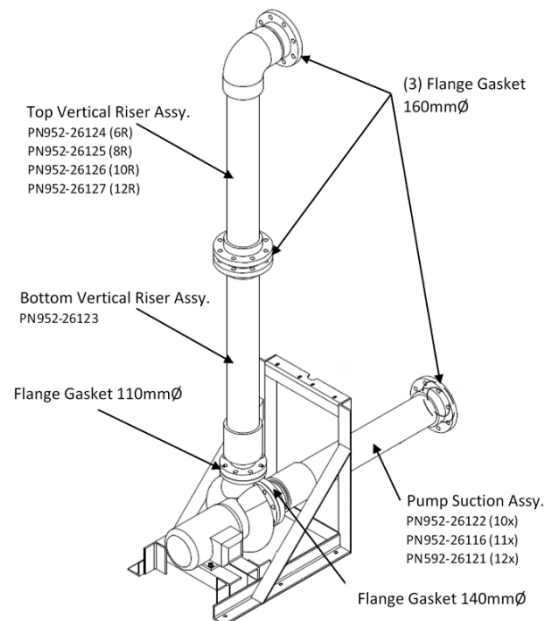


Figure 19 – Water Distribution Assembly (10', 11' and 12' wide models)

Extended Lifts

Important: The lifting devices and lifting lugs 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. Safety slings and skids must be removed before final positioning of the units. Refer to Figure 20 to Figure 23 below.

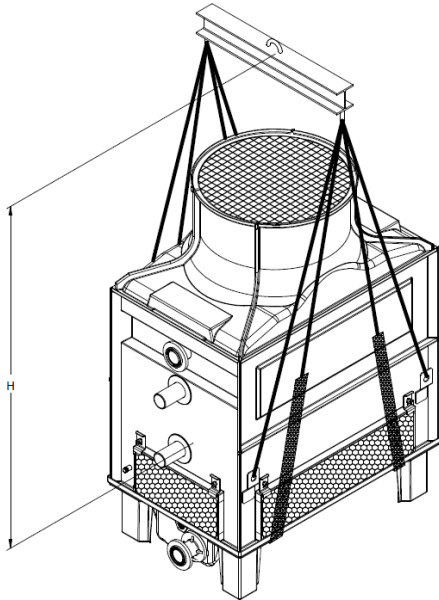


Figure 20 – Safety Slings for Extended Lift on 4 x 6

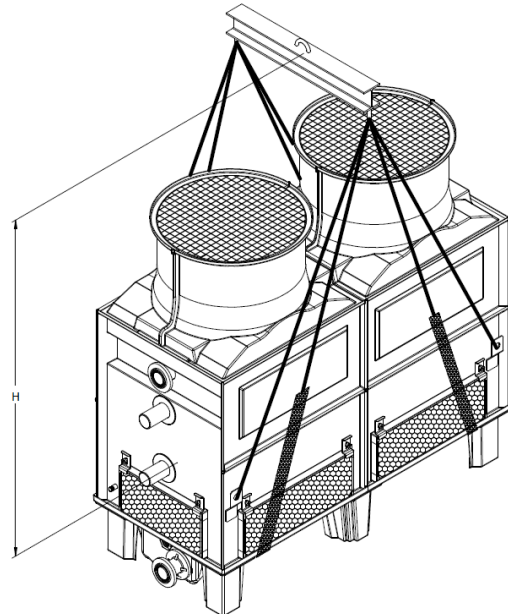


Figure 21 – Safety Slings for Extended Lift on 4 x 9

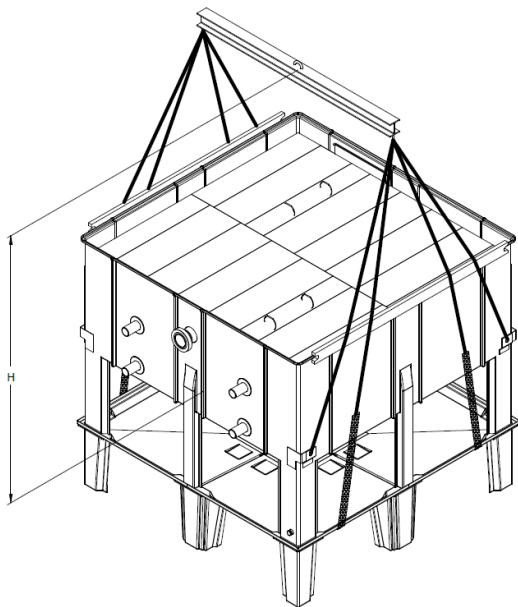


Figure 22 – Safety Slings for Extended Lift on Fan-Casing Section

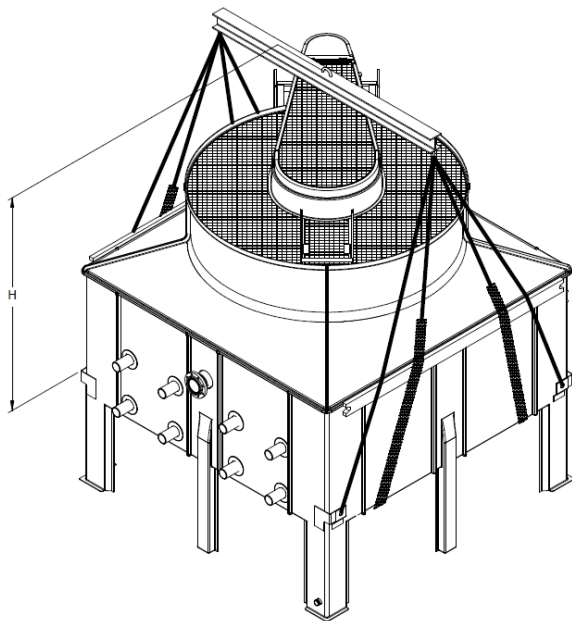


Figure 23 – Safety Slings for Extended Lift on Casing-Basin Section

General Information & Maintenance Start-up Details

Shipping Chocks and Debris

Remove any chocks that have been placed inside the unit for shipping purposes. Clean all debris from the basin prior to start-up. Ensure all louvers are in place and secured with retainer clips as shown in Figure 24.

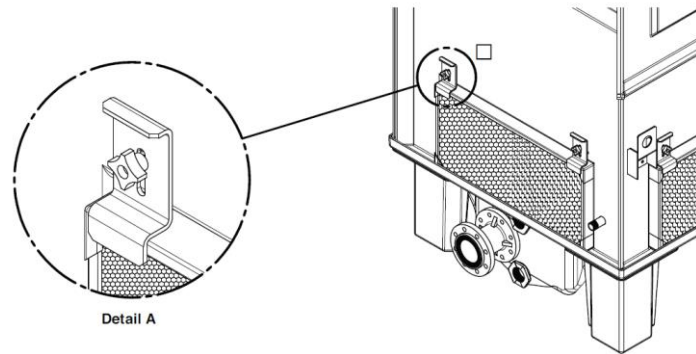


Figure 24 – Louver Retainer Clips

Bleed-off Line, Overflow and Drain

Make sure a bleed line and valve, overflow and drain are installed on the pump discharge side of the system piping to a convenient drain. The bleed-off valve should be open. For installation details, see the Operation and Maintenance Instructions.

Strainer

Check the strainer(s) in the basin to make sure they are in the proper location over the pump suction, alongside of the anti-vortex hood as shown in Figure 25. Strainers are integral to 4' & 8' hoods whilst larger units have screens with anti-vortex baffles connected to them

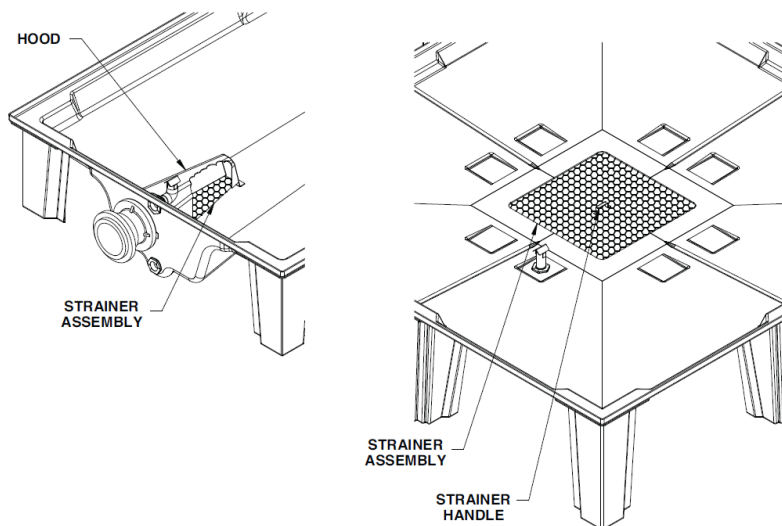


Figure 25 – Strainer Locations



Adjustment of Float Valve

The float valve should be adjusted to maintain the proper water level as specified in the maintenance instructions. At start-up, the basin should be filled to the overflow level. The water level can be checked during operation by opening the removable louver section at the valve while the pump is running and the fans are off.

The operating water level is to be set approximately 101mm below the overflow (all coolers and condensers).

Screens

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

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 basin 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.

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.



Field Assembly of External Platform and Ladder

The external platform and ladder assemblies are shipped on the truck. The platform is partially assembled prior to shipment. One external platform and ladder is provided per unit.

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

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<p>Step 1</p> <p>Attach the support bracket to the frame with 8 x M12 bolts</p> <p>DETAIL C</p>																							
<p>Step 2</p> <p>Attach the crossbeams to the support bracket with 4 x M12 bolts</p> <p>DETAIL A</p>																							
<p>Step 3</p> <p>Attach the ladder to the platform with 3 x M12 bolts. Fasteners are attached to the platform.</p> <p>DETAIL B</p>																							
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<p>REVISIONS</p>																							
<p>EXTERNAL SERVICE PLATFORM</p> <p>REV. NO. 1</p>																							



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