



**BALTIMORE
AIRCOIL COMPANY**



PF2

PC2

Counterflow Induced Draft Coil Products

RIGGING & ASSEMBLY INSTRUCTIONS



**PF2 Closed Circuit Cooling Towers and PC2
Evaporative Condensers should be rigged and
assembled as outlined in this manual.**

These procedures should be thoroughly reviewed prior to the actual rigging and assembly of the equipment to acquaint all personnel with procedures to be followed and to ensure that all necessary equipment will be available beforehand. If outstanding circumstances require a departure from the procedures outlined in this manual, contact your local BAC Representative for guidance.



Be sure to have a copy of the submittal drawings available for reference. If you do not have a copy of these drawings, or if you need additional information about this unit, contact your local BAC Representative whose name and telephone number are on the outside of the cold water basin. The model number and serial number of the unit are also located in this area.



Table of Contents

**RIGGING & ASSEMBLY INSTRUCTIONS » PF2 CLOSED CIRCUIT COOLING TOWERS
AND PC2 EVAPORATIVE CONDENSERS**

1 Introduction

- 2 Safety
- 2 Shipping
- 2 Pre-Rigging Checks
- 3 Cold Weather Operation
- 3 Location
- 3 Warranties
- 3 Unit Operation

2 Unit Rigging & Assembly

- 4 Rigging
- 5 Section Assembly of Two-Piece Cells
- 6 Section Assembly of Optional Three-Piece Cells
- 7 Rigging of Containerized Units
- 8 Multi-Cell Unit Installation
- 11 Motor Installation for External Motors
- 12 Crossover Piping Installation
- 12 Fan Guard Installation

3 Optional Accessory Installation

- 14 Bottom Water Outlet
- 14 PCD Hood Assembly (PF2 Only)
- 16 Discharge Sound Attenuation (PF2 Only)
- 17 Fan Cowl Extensions
- 17 Motor Removal Davit
- 18 Inclined Access Ladder
- 21 Mechanical Access Platform
- 26 Mechanical Access Platform Ladder
- 28 Basin Level Platform
- 29 Basin Level Platform Ladder
- 30 Ladder Safety Cage
- 31 Automatic Bearing Greasers
- 31 Basin Accessories
- 32 Heater Control Panel

Introduction

WARNING: In the event of extended lifts or where hazards exist, the lifting devices should be used in conjunction with safety slings placed under the unit.



Safety

Adequate precautions appropriate for the installation and location of these products should be taken to safeguard the equipment and the premises from damage, and the public from possible injury. **The procedures listed in this manual must be thoroughly reviewed prior to rigging and assembly. Read all warnings, cautions and notes detailed in the margins.**

When the fan speed of the unit is to be changed from the factory set speed, including the use of a variable speed device, steps must be taken to avoid operating at or near the fan's "critical speed" which could result in fan failure and possible injury or damage. Refer to "Fan Control" in the *PF2 and PC2 Operation & Maintenance Manual* on www.BaltimoreAircoil.com.

Shipping

BAC PF2 Closed Circuit Cooling Towers and PC2 Evaporative Condensers are factory assembled to ensure uniform quality with minimum field assembly. As standard, models ship in two sections per cell (lower and upper). Optional shipment of three sections per cell and optional containerized shipments are available. Contact your local BAC Representative for more information. For the dimensions and weights of a specific unit or section, refer to the submittal drawings.

WARNING: Only personnel qualified to do so should undertake the installation, operation, maintenance, and repair of this equipment. Proper care, procedures, and tools must be used in handling, lifting, installing, operating, maintaining, and repairing this equipment to prevent personal injury and/or property damage.



Pre-Rigging Checks

When the unit is delivered to the jobsite, it should be checked thoroughly to ensure all required items have been received and are free of any shipping damage prior to signing the bill of lading.

The following parts should be inspected:

- Sheaves and Belts
- Bearings
- Bearing Supports
- Fan Motor(s)
- Fan Guard(s)
- Fan(s) and Fan Shaft(s)
- Float Valve Assembly(s)
- Water Distribution System
- Coil Surface
- Cold Water Basin Accessories
- Interior Surfaces
- Exterior Surfaces
- Louvers
- Spray Water Pumps
- Mating Surfaces Between Sections/Modules
- Miscellaneous Items: All bolts, nuts, washers, and sealer tape required to assemble sections or component parts are furnished by BAC and shipped with the unit. A checklist inside the envelope attached to the side of the unit marked "Customer Information Packet" indicates what miscellaneous parts are included with the shipment and where they are packed. This envelope will be attached to the side of the unit or located in a box inside the unit.



Introduction

Safety

Shipping

Pre-Rigging Checks

Unit Weights

Anchoring

Cold Weather Operation

Location

Warranties

Unit Operation



ATTENTION: Before an actual lift is undertaken, ensure no water, snow, ice, or debris has collected in the basin or elsewhere in the unit. Such accumulations will add substantially to the equipment's lifting weight.

Unit Weights

Before rigging any unit, the weight of each section should be verified from the unit submittal drawing. Unit print weights include the final assembled unit with all accessories. Accessory weights (found on the respective drawing) can be deducted from the total weight.

Anchoring

Seven-eighths inch (7/8") diameter holes are provided in the bottom flange of the basin section for bolting the unit to the support beams. Refer to the suggested support drawing included in the submittal for location and quantity of the mounting holes. **The unit must be level for proper operation.** Anchor bolts must be provided by others. The IBC rating is only certified with standard anchorage locations. Using alternate anchorage locations or alternate steel supports will void any IBC wind or seismic ratings. Contact your local BAC Representative for details.

Cold Weather Operation

These products must be protected by mechanical and operational methods against damage and/or reduced effectiveness due to possible freeze-up. Refer to "Cold Weather Operation" in the *PF2 and PC2 Operation & Maintenance Manual* on www.BaltimoreAircoil.com, or contact your local BAC Representative for recommended protection alternatives.

Location

All evaporative cooling equipment must be located to ensure an adequate supply of fresh air to the fans. When units are located adjacent to walls or in enclosures, care must be taken to ensure the warm, saturated, discharge air is not deflected and short-circuited back to the air intakes.

Each unit must be located and positioned to prevent the introduction of discharge air into the ventilation systems of the building on which the unit is located and of adjacent buildings. For detailed recommendation on BAC equipment layout, see our website at www.BaltimoreAircoil.com or contact your local Representative.

Warranties

Please refer to the Limitation of Warranties (located in the submittal package) applicable to and in effect at the time of the sale/purchase of these products.

Unit Operation

Prior to start-up and unit operation, refer to the *PF2 and PC2 Operation & Maintenance Manual* shipped with the unit and also available at www.BaltimoreAircoil.com

2

PF2 AND PC2

Unit Rigging & Assembly

NOTE: For weight information, refer to the submittal drawing package.



NOTE: Any motors or accessories shipped in the cold water basin must be removed prior to installing the upper (mechanical and coil casing) section.



Rigging

Refer to **Table 1** for the recommended vertical dimension “H” from the lifting device to the spreader bar. In the event of extended lifts or where hazards exist, the lifting devices should be used in conjunction with safety slings placed under the unit.

Model Number	W (Length of Spreader Bar)	H (Distance From Lift Point to Lifting Device)			
		Two-Piece Lift		Three-Piece Lift	
		Lower Section	Upper Section/ Single Piece Lift	Middle Section	Upper Section
PF2/PC2-0406	4'	14'	11'	10'	4'-6"
PF2/PC2-0412	4'	16'	11'	10'	4'-6"
PF2-0709 and PC2-7409	7'-4"	14'	12'	10'	4'-6"
PF2-0718 and PC2-7418	7'-4"	16'	15'	15'	6'-6"
PF2/PC2-1012, PF2/PC2-1024, and PF2/PC2-2012	10'	16'	13'-6"	13'	5'
PF2/PC2-1212, PF2/PC2-2412, PF2/PC2-1224, and PF2/PC2-2424	12'	16'	13'-6"	13'	6'-6"
PF2/PC2-1218, PF2/PC2-1236, PF2/PC2-2418, and PF2/PC2-2436	12'	18'	15'	15'	9'

Table 1. Recommended Vertical Dimension and Spreader Bar Length

Most single cell PF2 and PC2 products (except models with the optional extended surface coil (finned) or the optional heavy gauge coil) are designed to be lifted in one assembled piece as shown in **Figure 1**. A two-piece lift is shown in **Figures 2** and **3**. All sections, with the exception of the lower section, require the use of a spreader bar. The distance between the spreader bar lifting points must be equivalent to the width between the unit lifting ears.

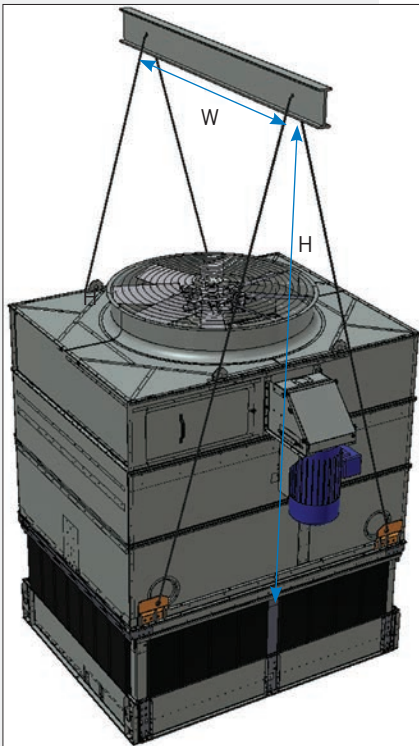


Figure 1. Single-Piece Lift



Rigging

Section Assembly of Two-Piece Cells



NOTE: The IBC Rating is void if the section assembly is not performed as described in this manual.



NOTE: All piping must be restrained to ensure no vertical or horizontal movement. All piping and supports are to be furnished by others. Refer to the submittal drawing for details on the connection size, etc.



ATTENTION: Do not lift the mechanical section attached to the coil casing section from the mechanical section lifting ears. Lift both sections from the coil casing lifting ears.

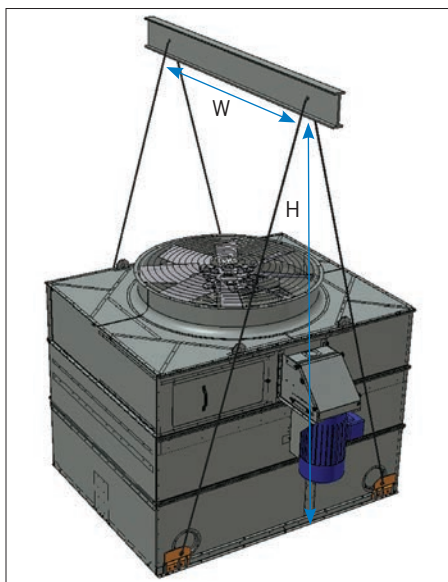


Figure 2. Upper Section Two-Piece Lift

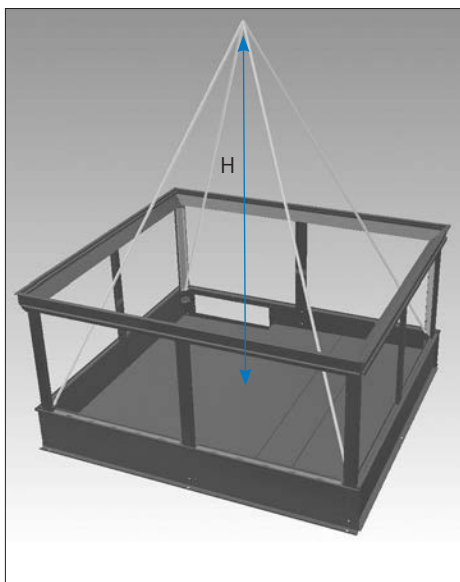


Figure 3. Lower Section Two-Piece Lift

Section Assembly of Two-Piece Cells

1. Remove any motors or accessories shipped in the cold water basin.
2. **Figures 2 and 3** show the proper rigging of the sections for units that ship in two sections. Position the lower section on the steel support and bolt in place.
3. Wipe moisture and dirt from the perimeter flange.
4. Install flat butyl sealer tape (BAC part # 554000) supplied with the unit, on the mating flanges of the lower section in a continuous line. At each corner, allow 1" overlap.
5. Lower the flexible connection on the pump discharge piping below the elevation of the lower section before rigging the coil casing section.
6. Lower the upper section (coil casing and mechanical) until it is hovering 2-6" above the lower section.
7. Insert drift pin per **Figure 4**. Start at the corner hole and skip every 3 or 4 holes along the length of the unit, inserting drift pins to align the coil casing section and the lower section holes. Repeat this process on the other side.
8. Fasten the hardware between the coil casing and lower section per **Figure 5**.
9. Secure the hose connecting the sections of the pump discharge pipe with the hose clamps provided.



Figure 4. Drift Pin Alignment

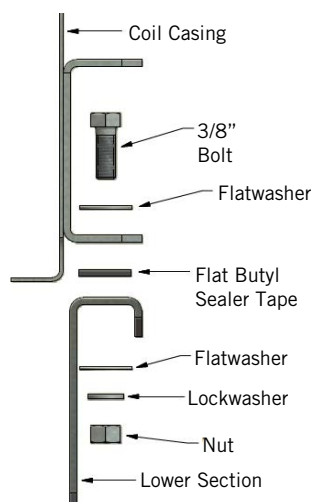


Figure 5. Coil Casing/Lower Section Bolt Assembly

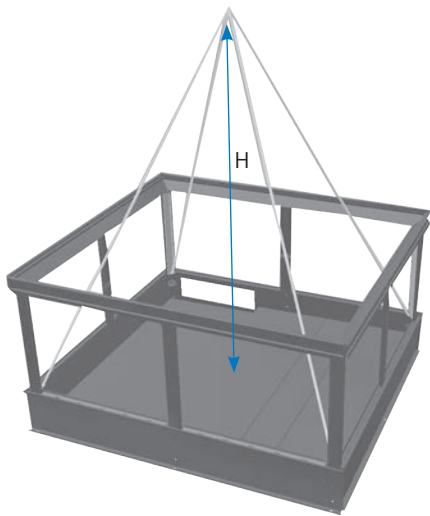


Figure 6a. Lower Section Three-Piece Lift

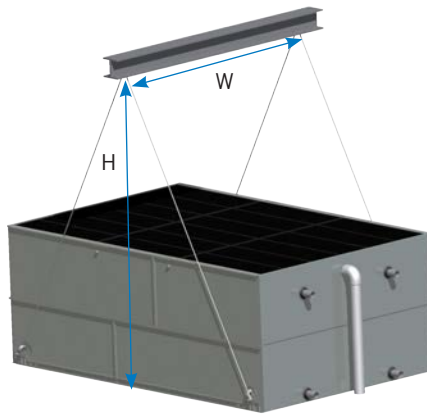


Figure 6b. Coil Casing Section Three-Piece Lift

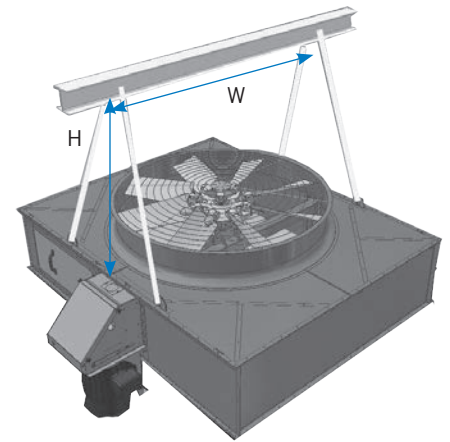


Figure 6c. Mechanical Section Three-Piece Lift

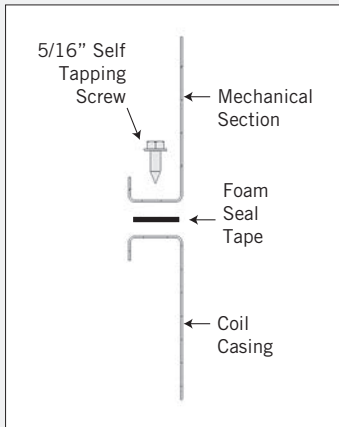


Figure 7. Mechanical/Coil Casing Assembly for Optional Three-Piece Rigging

Section Assembly of Optional Three-Piece Cells

1. Remove any motors or accessories shipped in the lower section.
2. **Figures 6a, 6b, and 6c** show the proper rigging of the sections of units that ship in three sections.
3. Position the lower section on the unit support and bolt into place.
4. Lower the flexible connection on the pump discharge piping below the elevation of the lower section before rigging the coil casing section.
5. Wipe moisture and dirt from the perimeter of the top flange on the lower section and also from the perimeter of the top flange of the coil casing section.
6. Starting at one end, install flat butyl sealer tape (BAC part # 554000) supplied with the unit, around the face of the flanges of the lower section in a continuous line. At each corner, allow 1" overlap.
7. Lower the coil section until it is hovering 2-6" above the lower section.
8. Insert drift pin per **Figure 4** on **page 5**. Start at the corner hole and skip every 3 or 4 holes along the length of the unit, inserting drift pins to the coil casing section and lower section holes. Repeat this process on the other side.
9. Fasten hardware per **Figure 5** on **page 5** between the coil casing section and the lower section.
10. Ensure that moisture and dirt has been wiped from the perimeter of the top flange on the coil casing section, which is now connected to the lower section.
11. On the coil casing section, install a layer of foam tape (BAC part # 270567) supplied with the unit around the face of the flange over the centerline of the holes. Do not leave any gaps.
12. Lower the mechanical section until it is hovering 2-6" above the coil casing section
13. Repeat step 7, inserting drift pins per **Figure 4** along the length of the unit and along the other side.
14. As illustrated in **Figure 7**, insert 5/16" self-tapping screws in each hole from the mechanical section into the casing section and tighten.
15. Secure the hose connecting the sections of the pump discharge pipe with the hose clamps provided.

Rigging of Containerized Units (PF2-0709, PF2-0718, PC2-7409, and PC2-7418)

1. Remove the unit from the container.
2. Containerized units ship in two parts within the container, where the mechanical section is bolted to the lower section and the coil casing section is separate. Once the unit is removed from container, remove the bolts holding the mechanical section to the lower section.
3. Follow steps 4 – 8 on **page 6**.
4. Remove any motors or accessories shipped in the lower section.
5. Position the lower section on the unit support and bolt into place.
6. The motor for containerized units ships loose. Attach the motor to the fan section per “Motor Installation for External Motors” on **page 11**.
7. Follow steps 9 – 15 on **page 6**.
8. Bolt the pump/piping assembly to the basin using flat butyl sealer tape (BAC Part #554000) and bolts provided as shown in **Figure 8**.
9. Secure the pump piping to the pump piping bracket with the provided U-bolt.

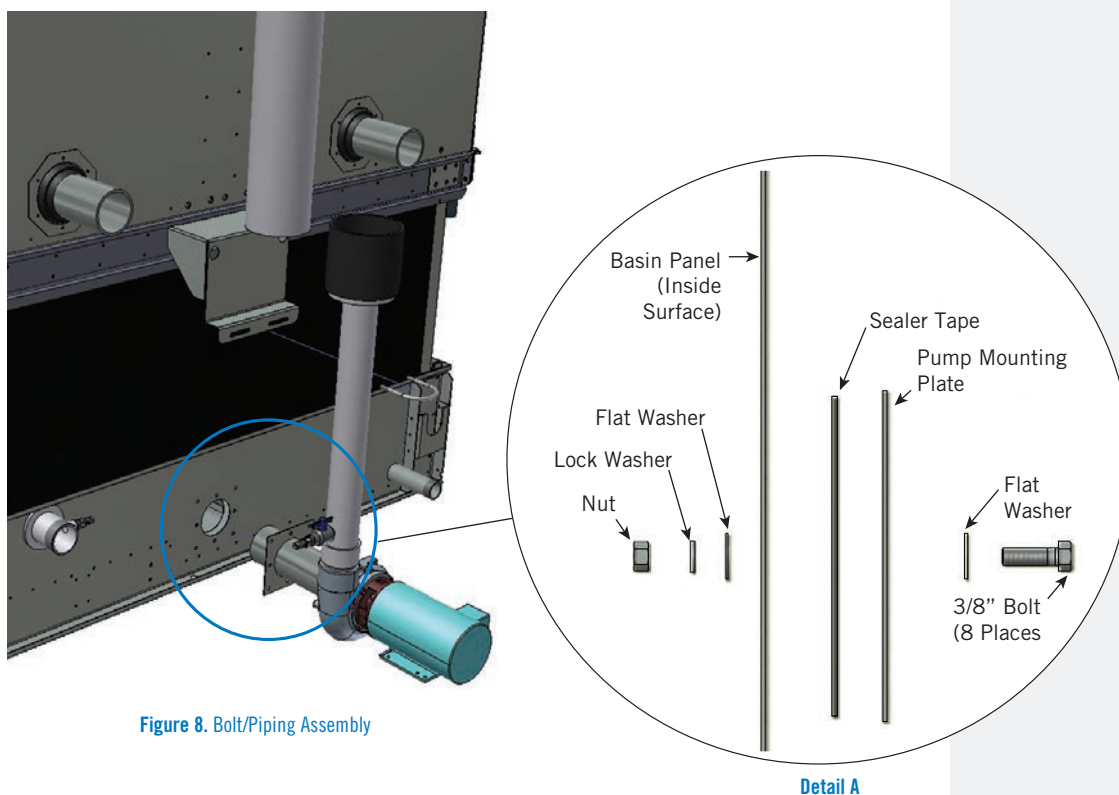


Figure 8. Bolt/Piping Assembly

Detail A

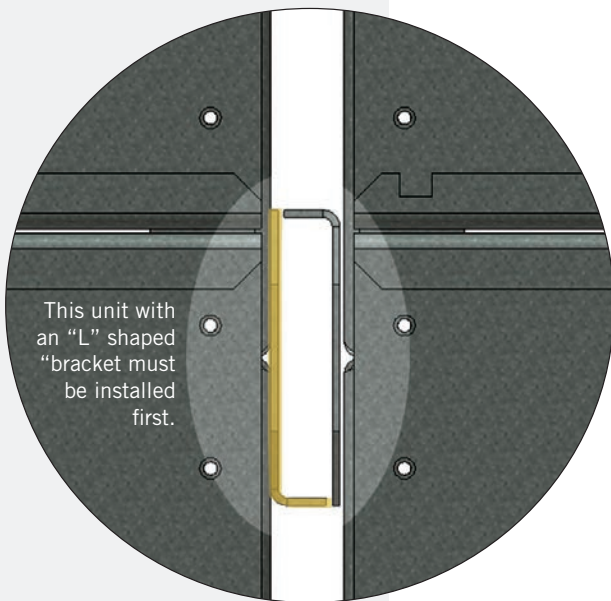
NOTE: On quad cell installations, it is suggested that the cells subsequent to the first cell have the upper and lower sections assembled on the support foundation adjacent to the final mounting locations. This will allow space for securing the upper and lower sections of each cell. Slide the subsequent cell(s) to their final position using the lifting devices on the casing.



Multi-Cell Unit Installation

Refer to the submittal unit print for the proper orientation of each cell. All multi-cell units have the cell number and “face” stenciled on the outer basin wall of each section, as well as match marks to show how the cells are to be mated. Multi-cell unit installations may use flume boxes to equalize the water level in the basin of each cell. Follow directions in “Flume Box Installation” below for detail on their installation.

When rigging multi-cell units, **the unit with the factory-installed end bracket that faces upward (as shown in Figure 9, Detail A) in an “L” shape needs to be installed first. The unit with the factory-installed end bracket that is inverted like an upside down “L” shape needs to be installed after the unit with the factory-installed end bracket that faces upward in an “L” shape.**



Detail A

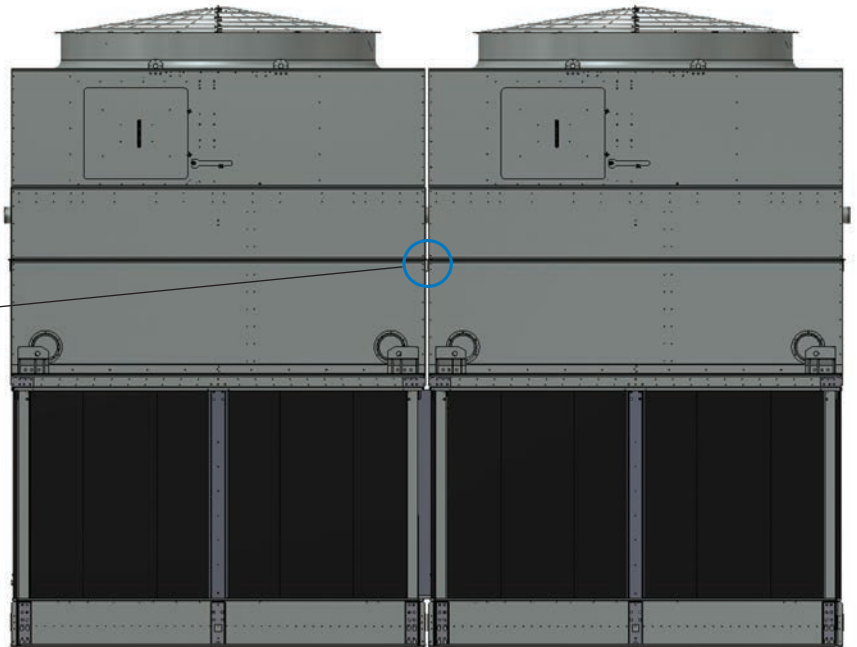


Figure 9. Bolt/Piping Assembly

Multi-Cell Unit Assembly

1. First, attach the first cell's lower section to the support and then fasten the first cell's upper section to the first cell's secured bottom section. For units shipped in two sections per cell, follow the instructions on **page 5**. For units shipped in three sections per cell, follow the instructions on **page 6**.
2. Each subsequent cell should be assembled just adjacent to its final location, and then properly positioned next to the previous cell. Ensure spacing between the cells at the bottom flange is 3" on Face A-B, 5" on Face C-C.
3. Some units come furnished with a flume box. If they do, use the flume box assembly procedure outlined below to connect the basins of multi-cell units.



Multi-Cell Unit Installation

Multi-Cell Unit Assembly
Flume Box Installation

Flume Box Installation

1. Position Cell #1 on the unit support and bolt in place. Cell #1 will have a factory installed flume box bolted onto Face B or Face C.
2. Wipe down the mating surface on the outer, protruding end of the flume box and apply a layer of flat butyl sealer tape (BAC Part #554000) around the face of the flange over the centerline of the holes. Do not overlap or stretch too thinly at the corners. When it is necessary to splice the butyl sealer tape, be sure to press the two ends together to form a smooth, continuous strip. See **Figure 10**.
3. Apply a second layer of butyl sealer tape over the first layer following the same procedure.
4. Assemble Cell #2 just adjacent to its final location. Wipe down the mating surface adjacent to the flume box opening to remove any dirt or moisture.
5. Position Cell #2 on unit supports. Using drift pins to ensure alignment, draw Cell #2 tight against the flume box, ensuring that the spacing between the cells at the bottom basin flange is 3" on Face A-B, 5" on Face C-C.
6. As illustrated in **Figure 11**, insert 3/8" x 1 1/4" thread cutting screws in each hole from the flume box into the basin wall and tighten. For basins with TriArmor® Corrosion Protection System and stainless steel basins, bolt strips are provided in lieu of individual thread cutting screws. For TriArmor basins only, a backing plate is provided and must be installed inside of Cell #2, as seen in **Figure 12**. Secure using the provided hardware.



NOTE: If the unit is provided with a positive closure plate requiring installation, go to "Positive Closure Plate Installation" on **page 10** prior to installing flat washers and wing nuts.



ATTENTION: If the backing plate is not properly installed, the TriArmor warranty will be void.

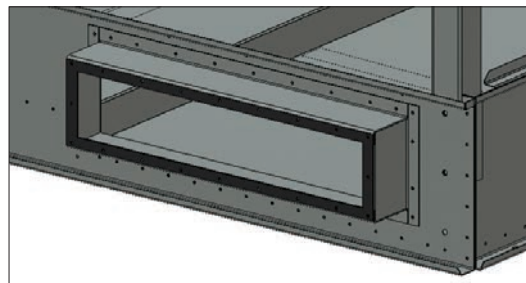


Figure 10. Flume Box Butyl Sealer Tape Application

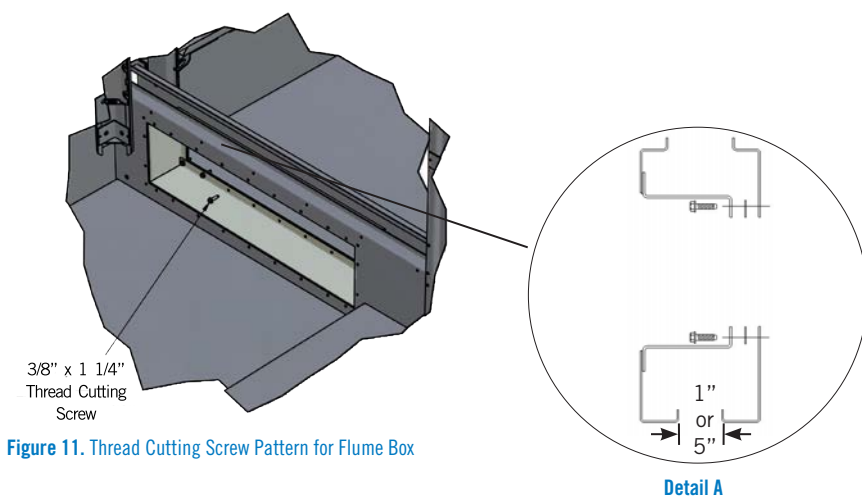


Figure 11. Thread Cutting Screw Pattern for Flume Box

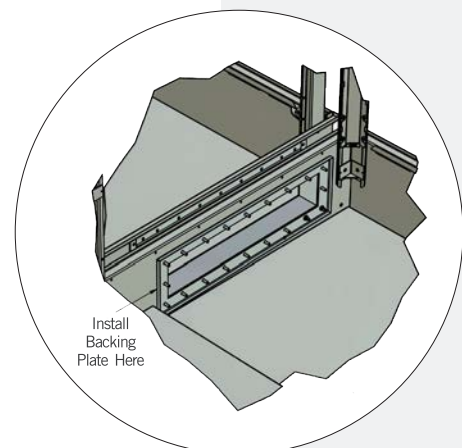


Figure 12. Backing Plate Installation

Positive Closure Plate Installation (Figure 13)

The optional positive closure plate and gasket can be furnished on multi-cell units to allow individual cells to be isolated for cleaning and routine maintenance. The plate ships loose inside the basin. To install the positive closure plate and gasket, follow the steps below.

1. If installed, remove flat washers and wing nuts from the flume box on the interior of Cell #2.
2. Position the neoprene gasket and positive closure plate over the flume box hardware and fasten in place with 3/8" flat washers and wing nuts.

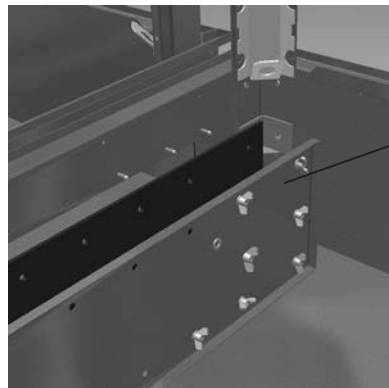
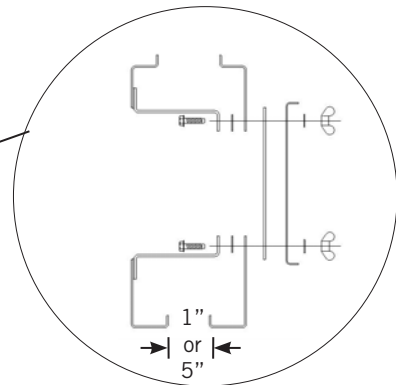


Figure 13. Positive Closure Plate Assembly



Detail A

Water Baffle Installation (Figures 14a, 14b, and 14c)

For multi-cell PF2 and PC2 units, water baffles join the interior basin sections to prevent leaks between modules. **Install the anchor bolts in all cells before installing the water baffles.** To install the water baffles, follow the steps below.

1. Slide the lower water baffle into place. The baffle is in its final position when the end plates are in contact with the end wall flanges.
2. Orient the side baffles with the flanges facing out. Install the left and right side water baffles by first aligning top notches and then sliding the bottom of the baffle into place.
3. Secure the base of sides baffles with two #14 (1/4") self-tapping screws in each hole provided.

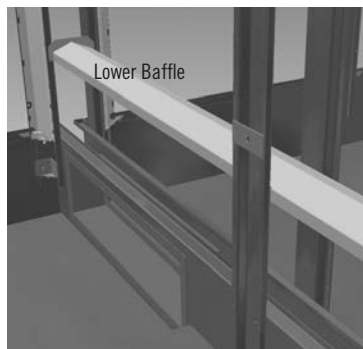


Figure 14a. Step 1

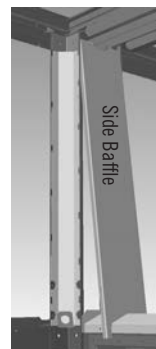


Figure 14b. Step 2

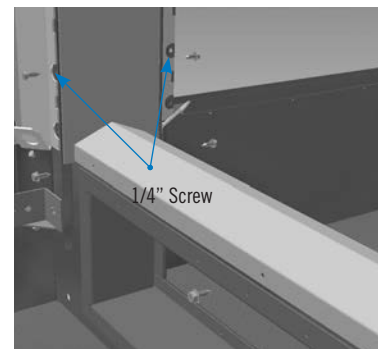


Figure 14c. Step 3



Multi-Cell Unit Installation

Positive Closure Plate Installation
Water Baffle Installation

Motor Installation for External Motors



WARNING: Ensure that the fan guard is properly installed prior to commencing operation.



ATTENTION: Do not remove tappers from the fan section during the installation of the external motor. Removing tappers will cause the interior mechanical system to fall.

Motor Installation for External Motors (Figure 15)

Models with external motors include PF2-0709, PF2-0718, PC2-7409, and PC2-7418. All other PF2 and PC2 models have the fan motor mounted and belt tensioned at the factory.

1. Attach the lifting strap to the motor base eyelets and remove the motor and the motor base assembly from the basin. The motor assembly must remain vertical to maintain proper alignment during installation.
2. Lift the external motor assembly into position next to the access door.
3. Attach the assembly to the unit using the six 1/2" studs, flatwashers, lock washers, and nuts.
4. Install the powerband, check sheave alignment, and tension the power band. For correct sheave alignment and tensioning specifications and procedures, refer to the *PF2 and PC2 Operation & Maintenance Manual* available at www.BaltimoreAircoil.com.

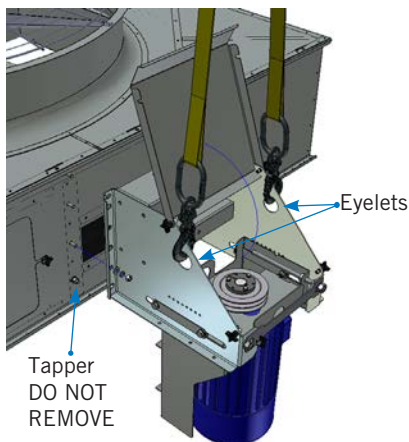


Figure 15a. External Motor Mount Assembly Lift

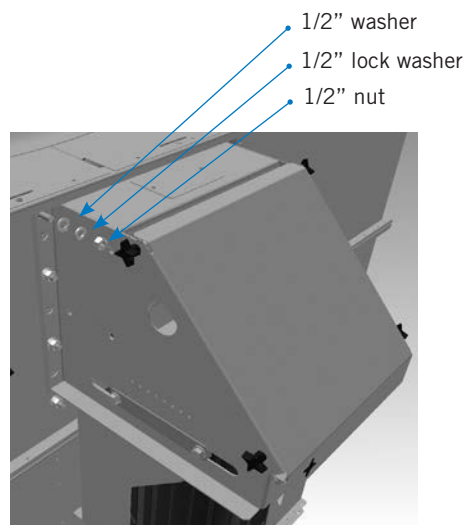


Figure 15b. External Motor Mount Assembly Pattern

ATTENTION: Ensure that the crossover piping is leak free prior to commencing operation.



Crossover Piping Installation (Series Coil Units Only)

For units ordered with coils that use crossover piping, the piping that is used to connect or “crossover” the coils ships loose. This piping will need to be welded in the field. The connections that the piping needs to be welded onto are beveled for welding in the factory. Refer to the submittal to determine if your unit requires crossover piping.

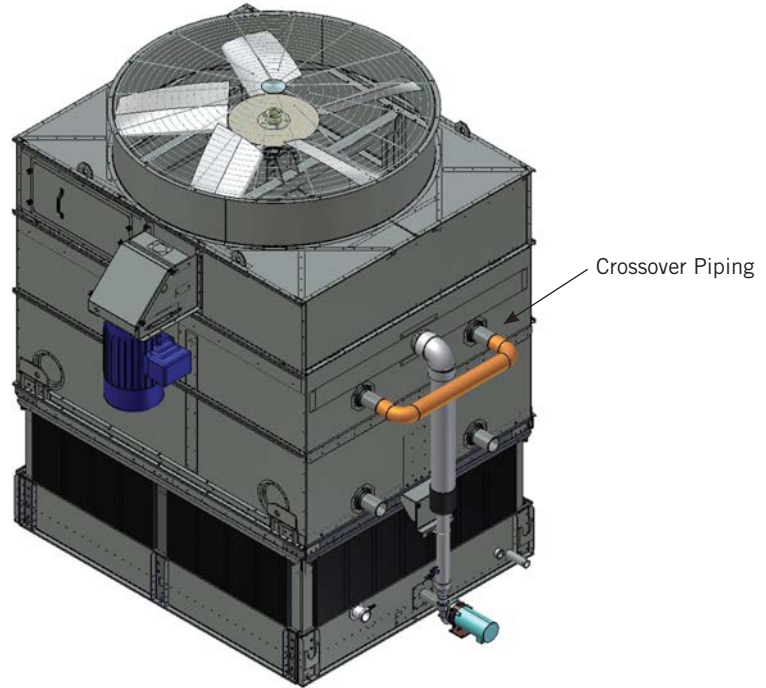


Figure 16. Crossover Piping Installation

DANGER: Fan guard must be securely in place before the unit is placed in operation. Never step or walk on the fan guard.



Fan Guard Installation

As standard, the fan guard ships installed on all PF2 and PC2 units except for the PF2/PC2-1218, PF2/PC2-1236, PF2/PC2-2418, and PF2/PC2-2436 which ships unmounted. However, due to height limitations on specific truck shipments, the fan guard for other models may ship unmounted.

One-Piece Fan Guard

Mount the fan guard to the unit as illustrated in **Figure 17, Detail C**.

Two-Piece Fan Guard

1. Bolt the two halves together as illustrated in **Figure 18, Detail B** on **page 11** at the X and Y dimensions shown in **Table 2**.
2. Mount the fan guard to unit as illustrated in **Figure 18, Detail A** for the seams where the two halves join together, and **Detail C** for all others.

NOTE: For X and Y dimension locations, refer to **Figure 18**. For values, refer to **Table 2**.



Fan Diameter	X	Y
9'	10"	17"
10'	10"	20"
11'	10"	23"

Table 2. U-Bolt Spacing Dimensions

Crossover Piping Installation

Fan Guard Installation

- One-Piece Fan Guard
- Two-Piece Fan Guard

See Detail C
in Figure 18

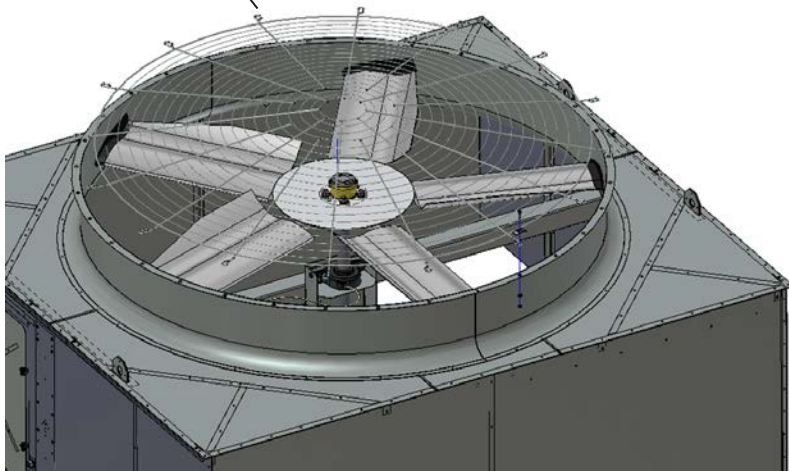


Figure 17. One-Piece Fan Guard Assembly

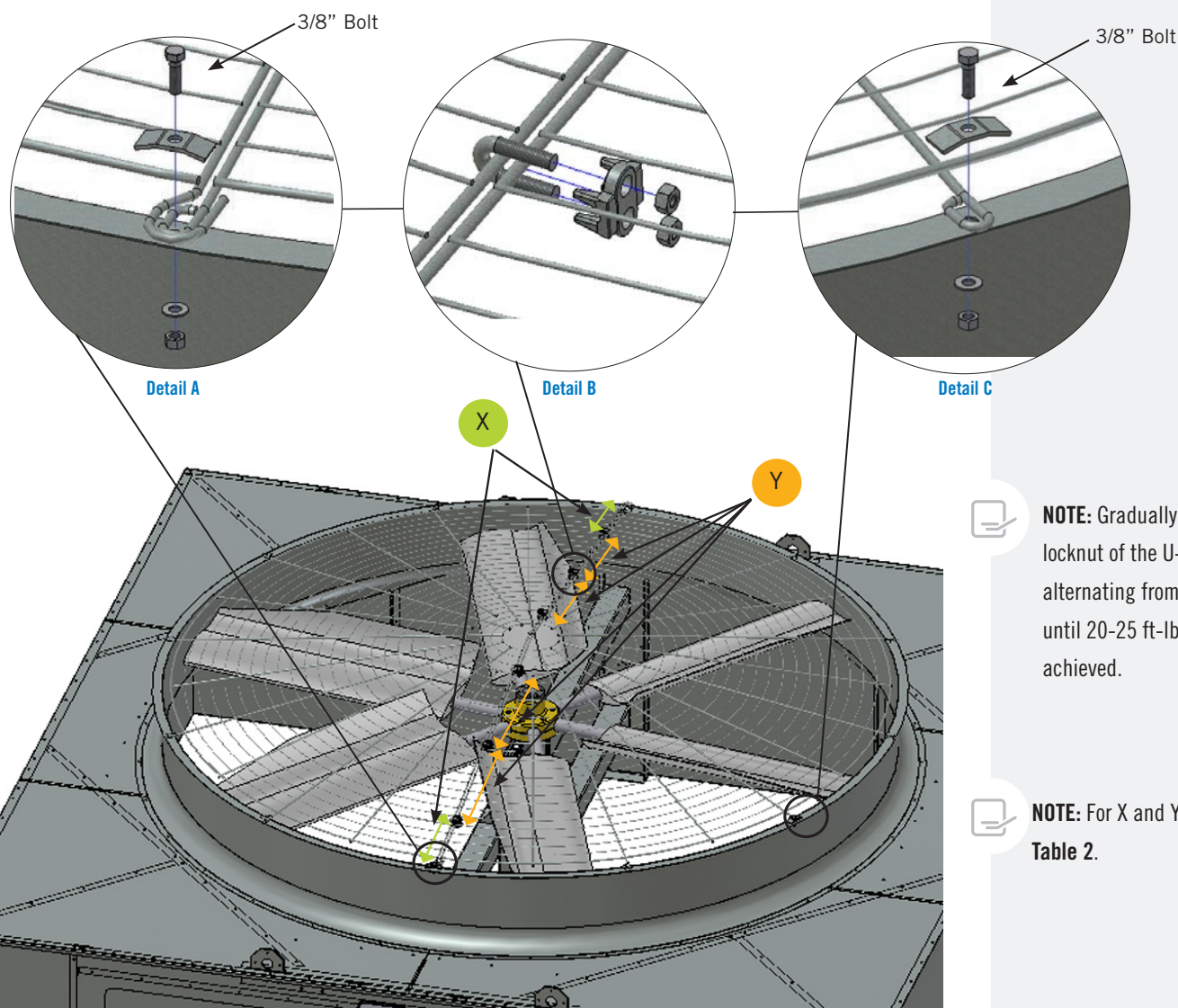


Figure 18. Two-Piece Fan Guard Assembly



NOTE: Gradually tighten each locknut of the U-Bolt assembly, alternating from one to the other, until 20-25 ft-lb of torque has been achieved.



NOTE: For X and Y values, refer to Table 2.

Optional Accessory Installation

Bottom Water Outlet (Optional)

1. The bottom connection seal, **Figure 19**, is typical for all bottom remote sump outlets, and bypasses. Flange mounting hardware and gasket to be supplied by others.
2. Bottom connection seal kit(s) ship in plastic tubs.

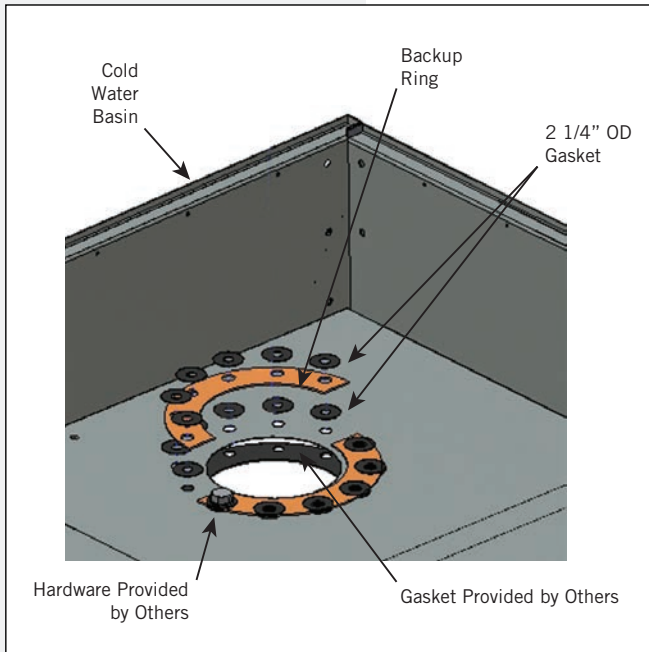


Figure 19. Bottom Water Outlet

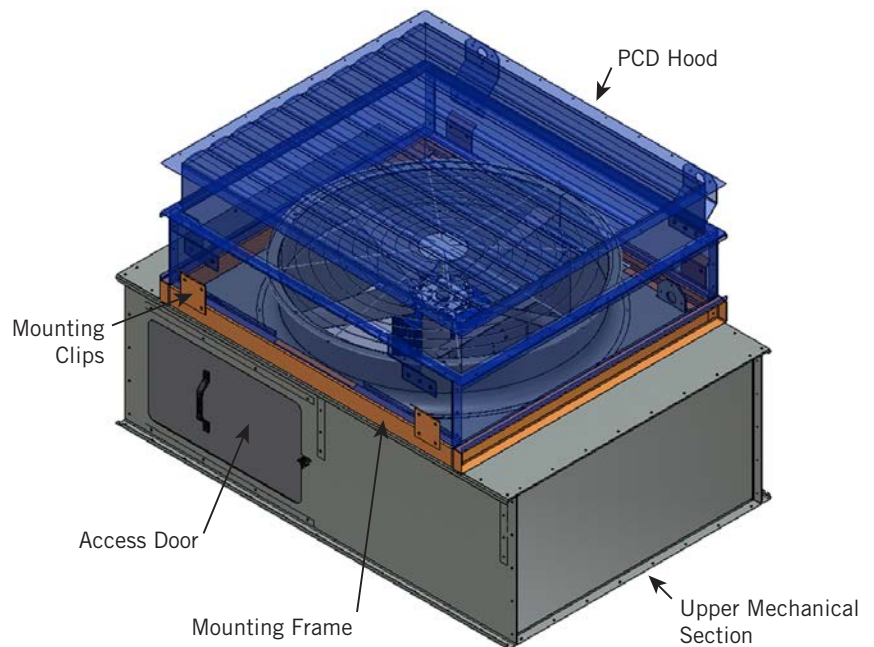


Figure 20. PCD Hood Edge Mounted Assembly (PF2-0406 Shown)

PCD Hood Assembly (Optional on PF2 Only)

Frame Mounted Assembly: PF2-0406, PF2-0412, PF2-0709, and PF2-0718, (One Fan Only for PF2-1218, PF2-1236, PF2-2418, and PF2-2436) (Figure 20)

1. Verify the mounting frame (and clips for PF2-0406 and PF2-0412) are factory installed as shown in **Figure 20**.
2. Lower the PCD hood into position by aligning the bolt holes on the PCD hood with the pre-existing bolt holes on the mounting frame (and clips for PF2-0406 and PF2-0412). Be sure to follow the minimum height restrictions H found in **Table 3** between the top of the PCD Hood and the apex of the crane cables supporting the load.
3. Secure the PCD Hood using the tappers or bolts provided.



Optional Accessory Installation

Bottom Water Outlet

PCD Hood Assembly (PF2 Only)

- Edge Mounted Assembly
- Bracket Mounted Assembly



ATTENTION: Do not use the PCD lifting ears to lift the mechanical section or the unit.

Bracket Mounted Assembly: PF2-1012, 1024, 2012, 1212, 2412, 1224, 2424, (Two Fan Only for PF2-1218, 1236, 2418, and 2436) (Figure 21)

1. The upper mechanical section should already be secured onto the lower section. Verify the mounting guides are factory installed. If these mounting guides are not factory installed, please contact your local BAC Representative.
2. Apply foam tape (BAC part # 270567) to the bottom edge of the PCD hood. Lower the PCD hood into position on the upper mechanical section by aligning the bolt holes on the PCD hood with the pre-existing bolt holes on the bracket mounts as shown in **Figure 21**. Be sure to follow the minimum height restrictions H found in **Table 3** between the top of the PCD Hood and the apex of the crane cables supporting the load.
3. Secure the PCD hood using the tappers provided.

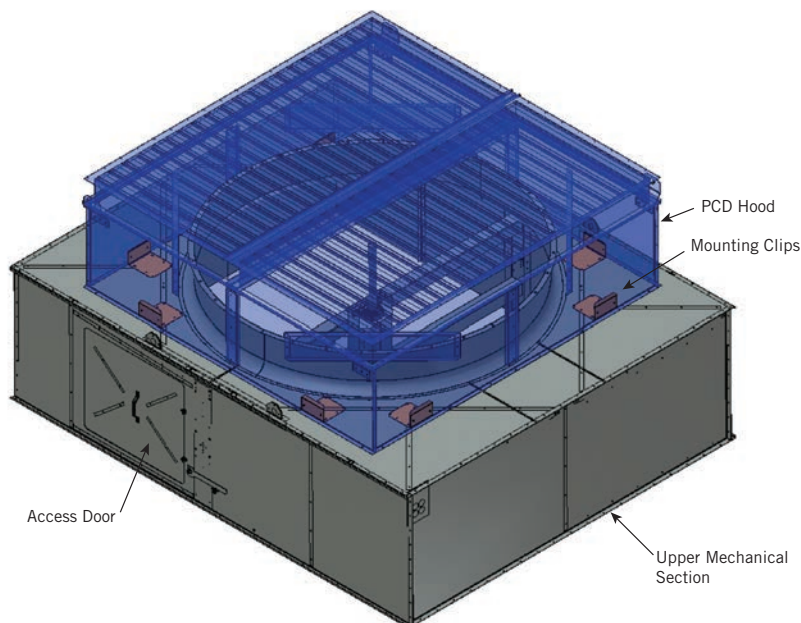


Figure 21. PCD Hood Bracket Mounted Assembly

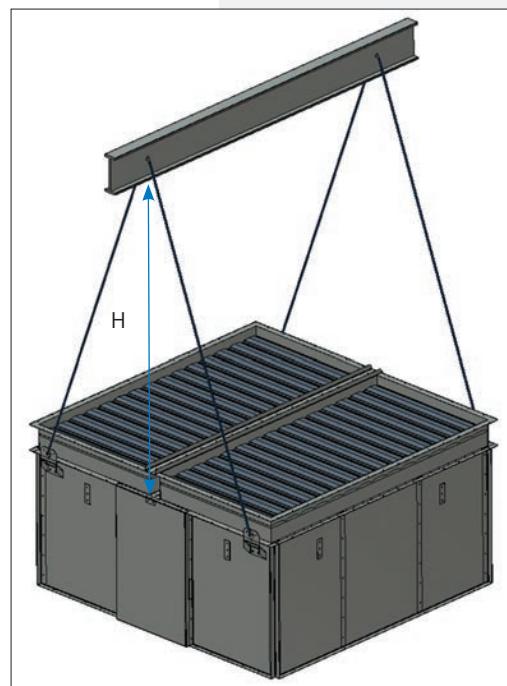


Figure 22. PCD Hood Lift

Model Number	H (Distance From Lift Point to Lifting Device)
PF2/PC2-0406	4'
PF2/PC2-0412	4'
PF2-0709 and PC2-7409	5'
PF2-0718 and PC2-7418	5'
PF2/PC2-1012, PF2/PC2-1024, and PF2/PC2-2012	8'
PF2/PC2-1212, PF2/PC2-2412, PF2/PC2-1224, and PF2/PC2-2424	8'
PF2/PC2-1218, PF2/PC2-1236, PF2/PC2-2418, and PF2/PC2-2436 Models with One Fan per Cell	8'
PF2/PC2-1218, PF2/PC2-1236, PF2/PC2-2418, and PF2/PC2-2436 Models with Two Fans per Cell	9'

Table 3. PCD Hood Vertical Lift Dimensions

Discharge Sound Attenuation (Optional on PF2 Only)

1. Verify the mounting frame and clips are factory installed as shown in **Figure 23**.
2. Lower the attenuator into position by aligning the bolt holes on the attenuator with the pre-existing bolt holes on the mounting clips.
3. Secure the attenuator using the tappers provided.

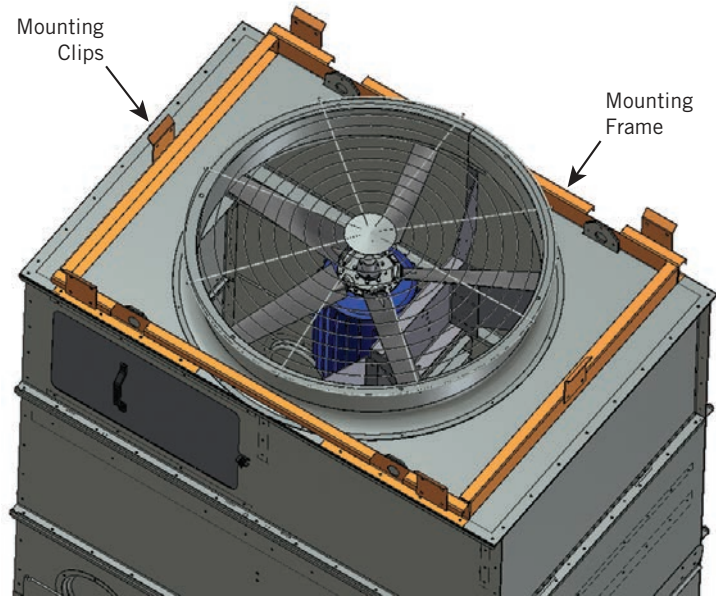


Figure 23. Position of Discharge Sound Attenuation Clips

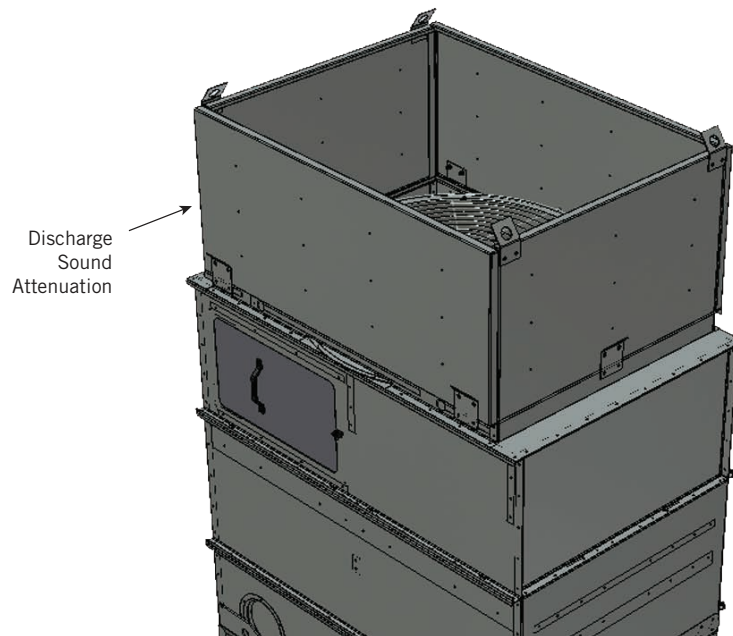


Figure 24. Discharge Sound Attenuation Installed
(PF2-0406 Shown)

Discharge Attenuation

Fan Cowl Extensions

Motor Removal Davit

Fan Cowl Extensions (Optional)

Each Fan cowl extension is 10 1/2" tall and up to four fan cowl extensions may be installed.

1. Fasten the fan cowl extensions through the large diameter pre-punched holes using the provided hardware as shown in **Figure 25, Detail A**.
2. Follow the "Fan Guard Installation" instructions on **page 10** to install the fan guard.

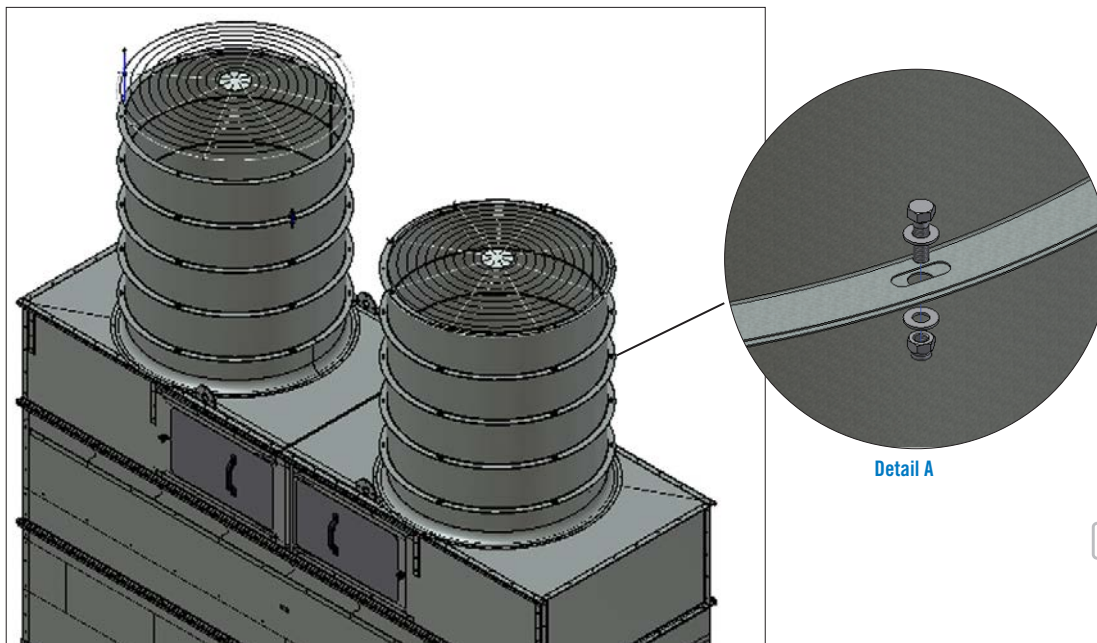


Figure 25. Fan Cowl Extensions

Motor Removal Davit (Optional)

PF2-0709, PF2-0718, PC2-7409, and PC2-7418 (See Figure 26)

1. Remove the cover plate from the upper support channel.
2. Rotate the davit assembly to align the bolt head on the davit with the keyway in the upper support channel and lower into position. The davit must pass through the upper and lower support channel and rest on support base.

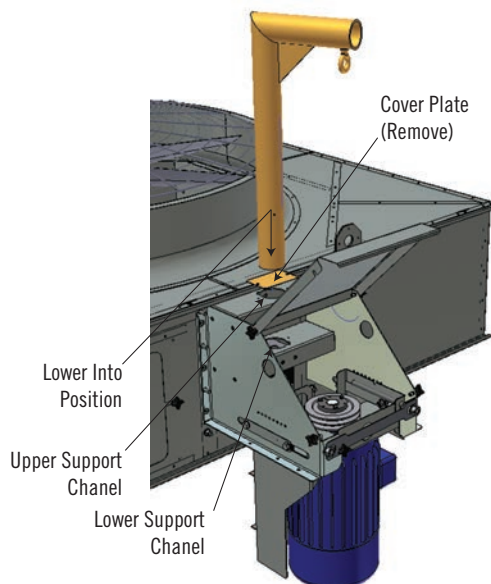


Figure 26. Motor Removal Davit Installation for PF2-0709, PF2-0718, PC2-7409, and PC2-7418



NOTES:

1. Fan cowl extensions can be added at the time of order or as an aftermarket item.
2. Discharge sound attenuation can be added at the time of order or as an aftermarket item.



NOTE: The maximum weight load capacity of the motor removal davit is 630 lbs for PF2-0709, PF2-0718, PC2-7409, and PC2-7418 units.

NOTE: The maximum weight load capacity of the motor removal davit is 830 lbs for PF2/PC2-1012, 1024, 2012, 1212, 2412, 1224, 2424, 1218, 1236, 2418, and 2436.

ATTENTION: Do not remove tappers during installation of motor removal davit support. Removing tappers will cause the interior mechanical system to fall.

NOTES:

1. Platforms, ladders, and safety cages can be added at the time of order or as an aftermarket item.
2. Safety gates are provided for all handrail openings. All components are designed to meet OSHA requirements.

PF2/PC2-1012, 1024, 2012, 1212, 2412, 1224, 2424, 1218, 1236, 2418, and 2436

1. Verify the davit support is factory installed next to the access door. If not installed, remove the bolts next to the access door (refer to **Figure 27b**). **DO NOT REMOVE TAPPERS**. Secure the davit support by re-installing the bolts.
2. Rotate the davit assembly to align the bolt head on the davit with the keyway in the upper support channel and lower into position. The davit must pass through the upper and lower support channels and rest on the support base.

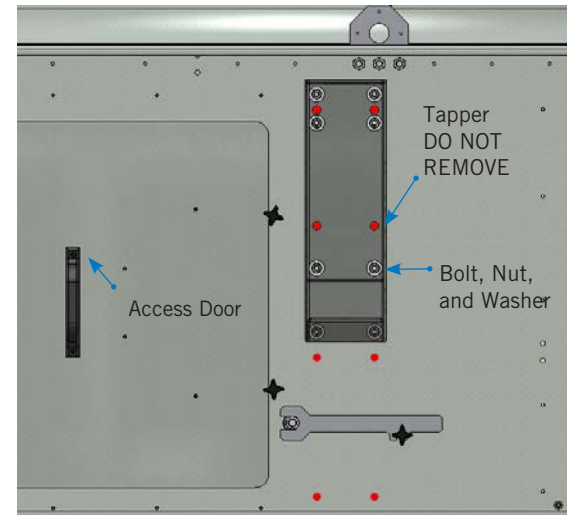
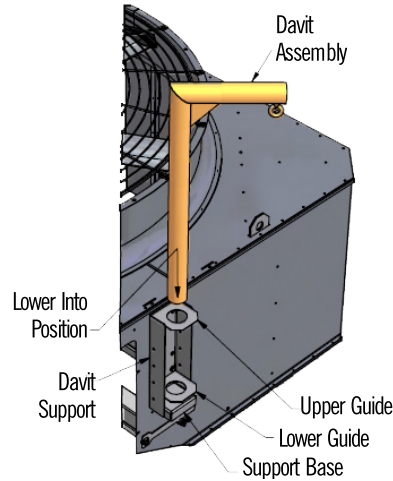


Figure 27b. Davit Support Detail

Figure 27a. Motor Removal Davit Installation for PF2/PC2-1012, 1024, 2012, 1212, 2412, 1224, 2424, 1218, 1236, 2418, and 2436

Inclined Access Ladder (Optional)

Refer to Figures 28 to 30 for your particular unit.

1. Install the upper bracket as shown in **Figures 28 to 30, Detail A**. Depending on the unit, this bracket might be factory installed.
2. Install the lower bracket(s) in the two outermost holes in adaptor channel as shown in **Figures 28 to 30, Detail B**.
3. For PF2/PC2-1012, 1024, 2012, 1212, 2412, 1224, 2424, 1218, 1236, 2418, and 2436 units, install the center adapter and bracket as shown in **Figure 30, Detail C**. To install, fasten the center bracket to the adapter, but do not tighten the fasteners. The bracket flanges should face toward the unit end wall while the adapter is oriented with the holes positioned on top. Capture down break on channel between the bracket and adapter.
4. Do not tighten the fasteners until the ladder is in position.
5. Position the ladder on the upper bracket and fasten in place.
6. Secure the ladder to the lower bracket(s) and the center bracket (for PF2/PC2-1012, 1024, 2012, 1212, 2412, 1224, 2424, 1218, 1236, 2418, and 2436 units) utilizing the ladder clamps provided.
7. Loosely fasten the diagonal braces of the lower support assembly into position with the ladder clamps, as shown in **Figures 28 to 30, Detail B**.
8. Adjust the ladder clamps on the diagonal brace vertically to ensure that ladder(s) are perpendicular to unit and tighten outer ladder clamps.
9. Check and tighten all remaining ladder fasteners before using the ladder(s).



Optional Accessory Installation

Motor Removal Davit

Inclined Access Ladder

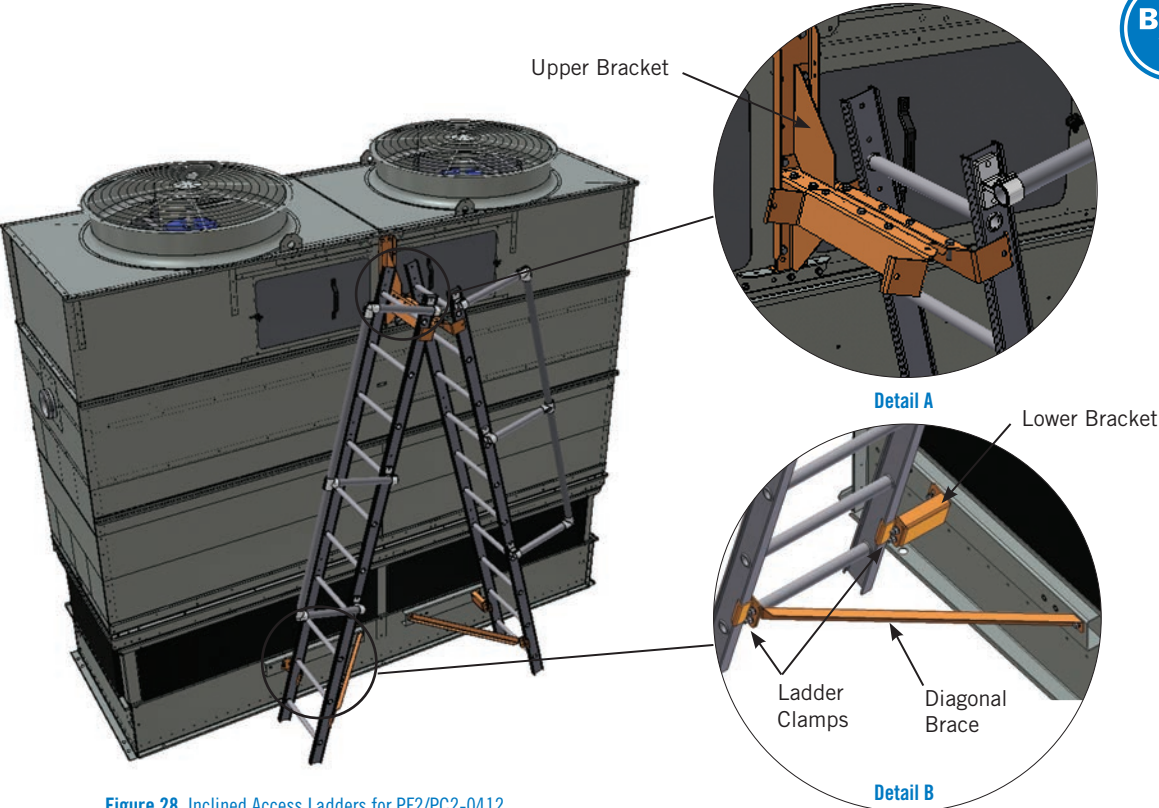


Figure 28. Inclined Access Ladders for PF2/PC2-0412

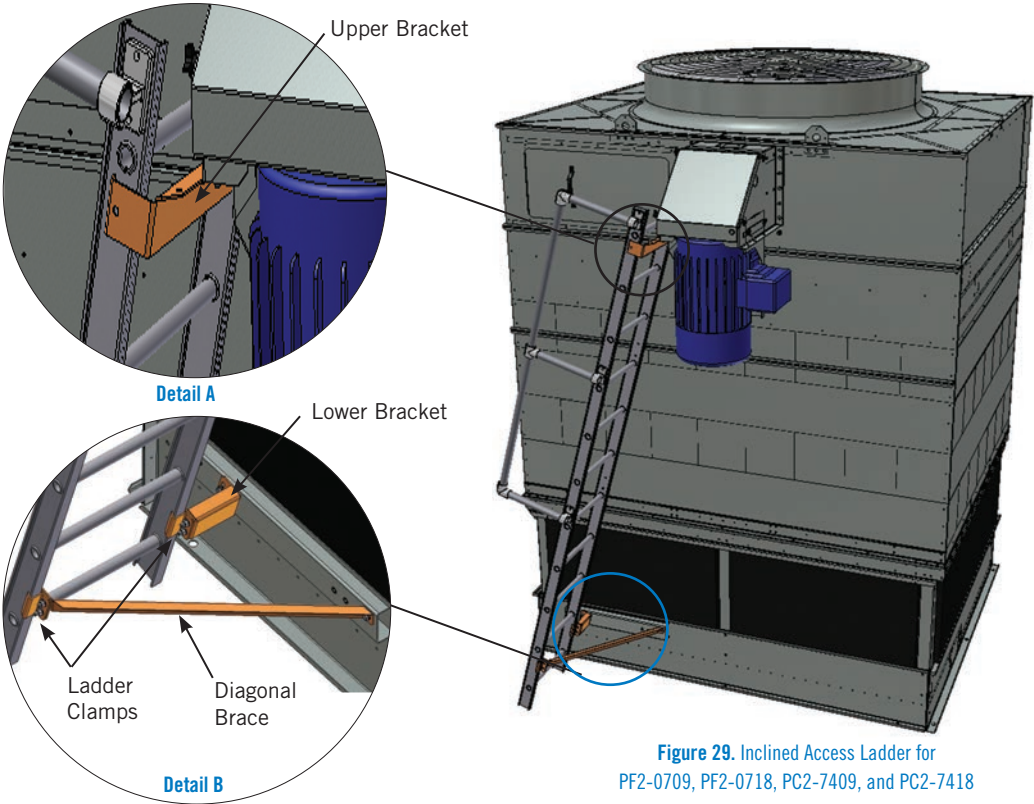


Figure 29. Inclined Access Ladder for PF2-0709, PF2-0718, PC2-7409, and PC2-7418

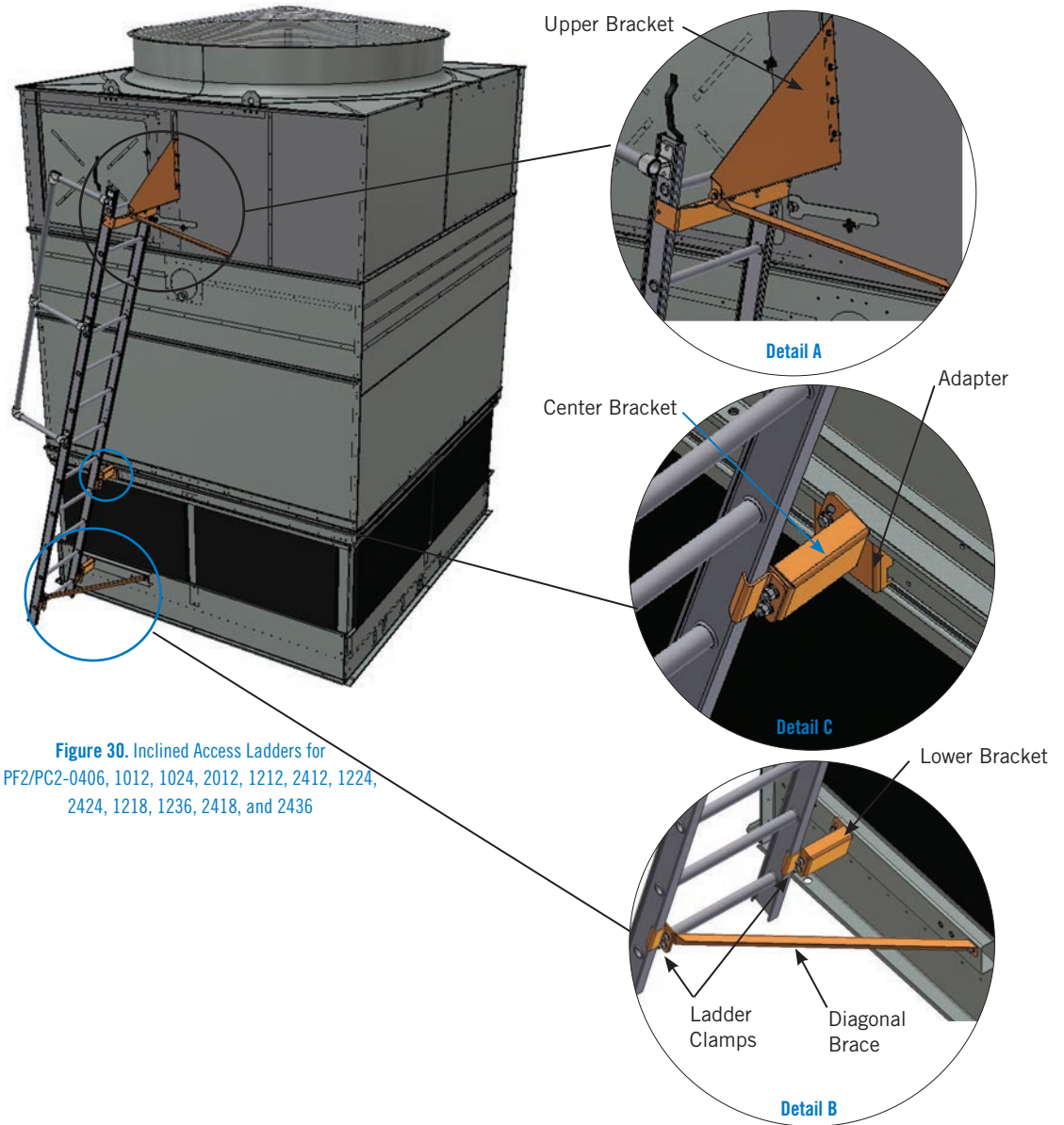


Figure 30. Inclined Access Ladders for PF2/PC2-0406, 1012, 1024, 2012, 1212, 2412, 1224, 2424, 1218, 1236, 2418, and 2436



Inclined Access Ladder

Mechanical Access Platform

Mechanical Access Platform (Optional)

Refer to **Figures 31 to 38** on pages 21 to 25 for your unit platform assembly.

1. Lift the hang-on module(s) into place by placing the hangers into the notches at the top of the unit. Secure the module(s) to the unit using 3/8" bolts provided. See **Detail A (Figures 31 to 38)**.
2. Slide the platform clamps behind the panel flanges and secure to platform. See **Details B and C (Figures 31 to 38)**.
3. Secure the adjustable extension to the flange at the top of the lower section as shown in **Detail D (Figures 31 to 38)**.
4. If applicable, lift the bridge section(s) between the mounted hang-on modules and lower into position so that it rests on support channels. Fasten the bridge section(s) to the support channels at 4 places using 3/8" x 1 1/4" hardware supplied. See **Detail E (Figures 34 and Figures 36 to 38)**.

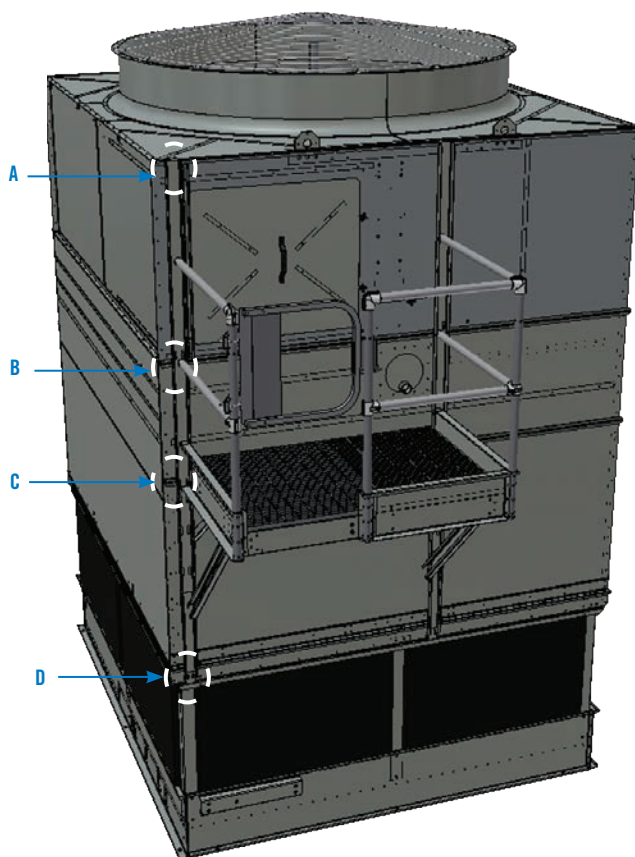
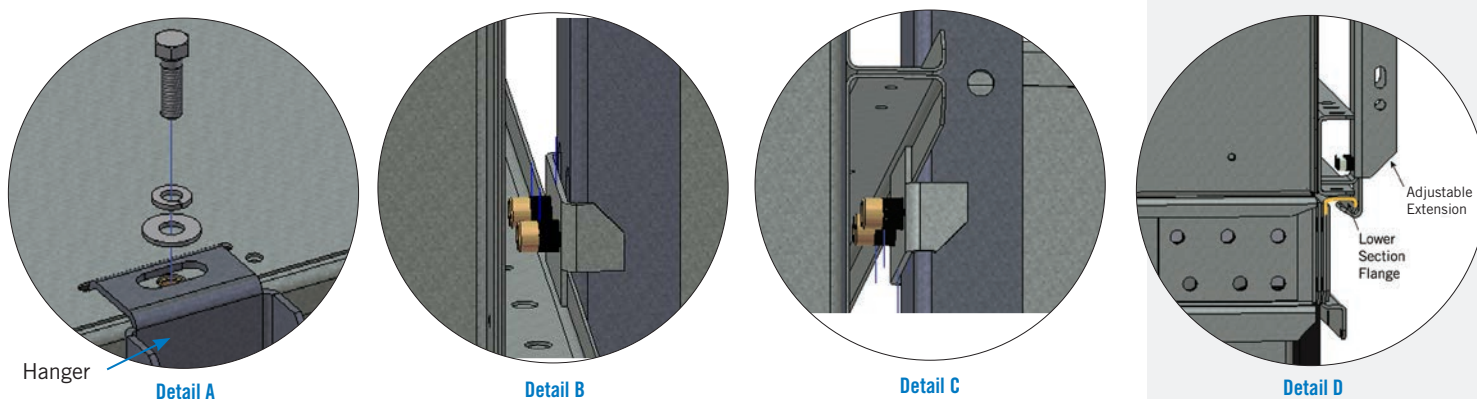
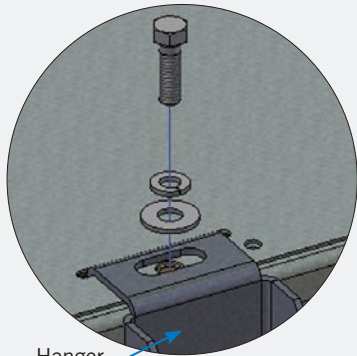


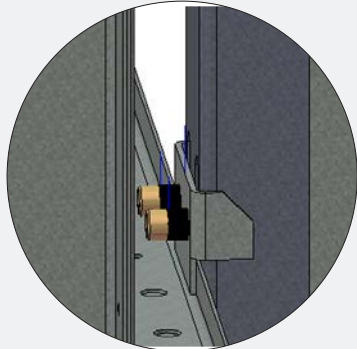
Figure 31. Mechanical Access Platform for PF2/PC2-1012, PF2/PC2-1212, PF2/PC2-2012, and PF2/PC2-2412 with One Fan Per Cell



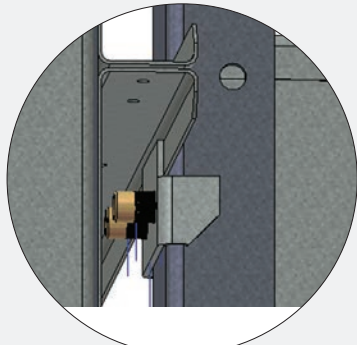
NOTE: In **Figure 31**, the PF2/PC2-1012 is shown. PF2/PC2-2012 and PF2/PC2-2412 models have two cells and two fans total.



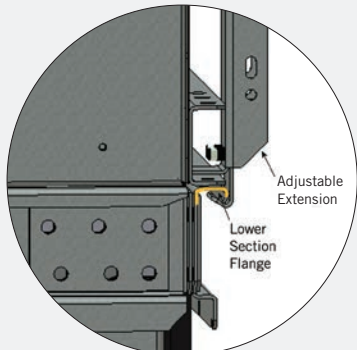
Hanger
Detail A



Detail B



Detail C



Lower Section Flange
Adjustable Extension
Detail D

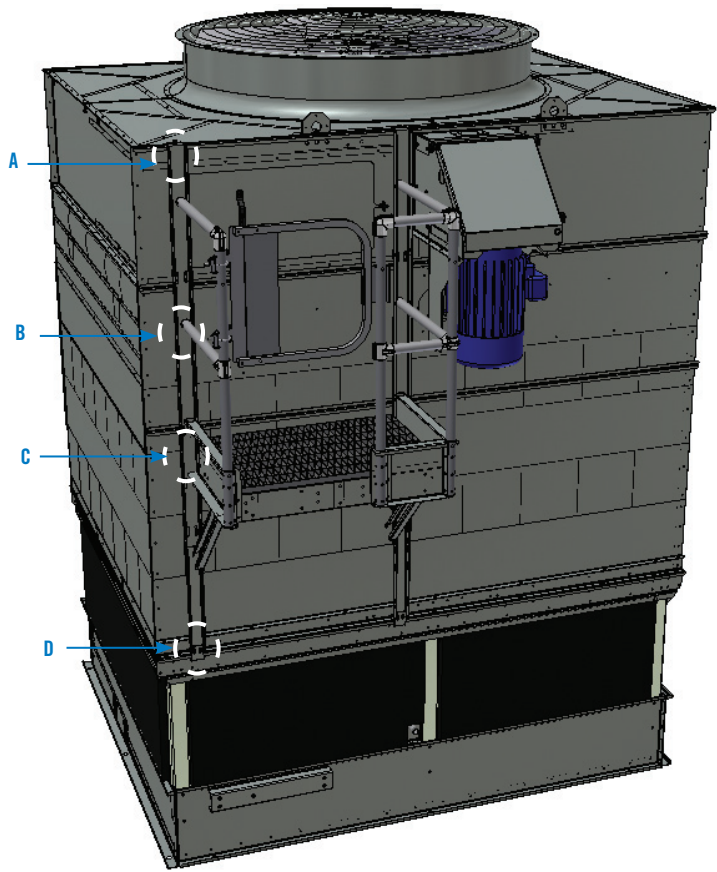


Figure 32. Mechanical Access Platform for PF2-0709 and PC2-7409 Units

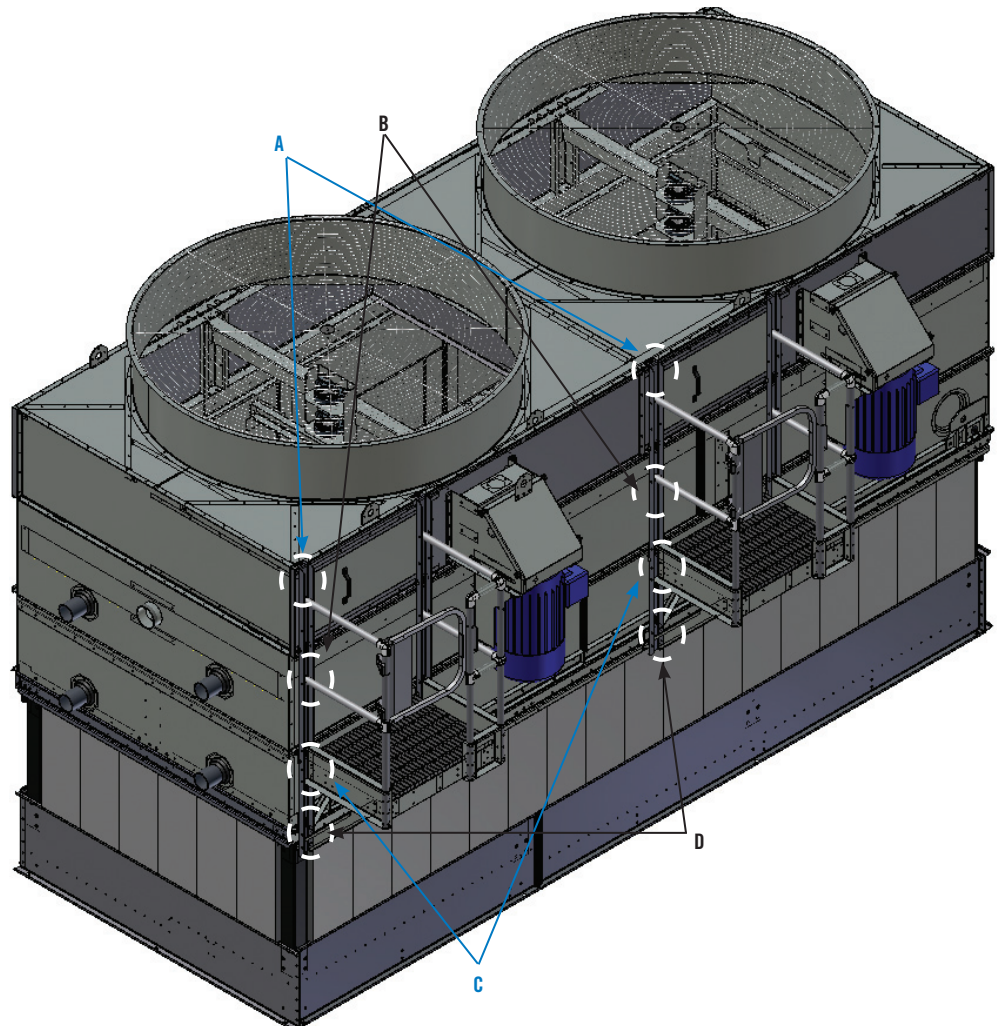


Figure 33. Mechanical Access Platform for PF2-0718 and PC2-7418 Units



Optional Accessory Installation

Mechanical Access Platform

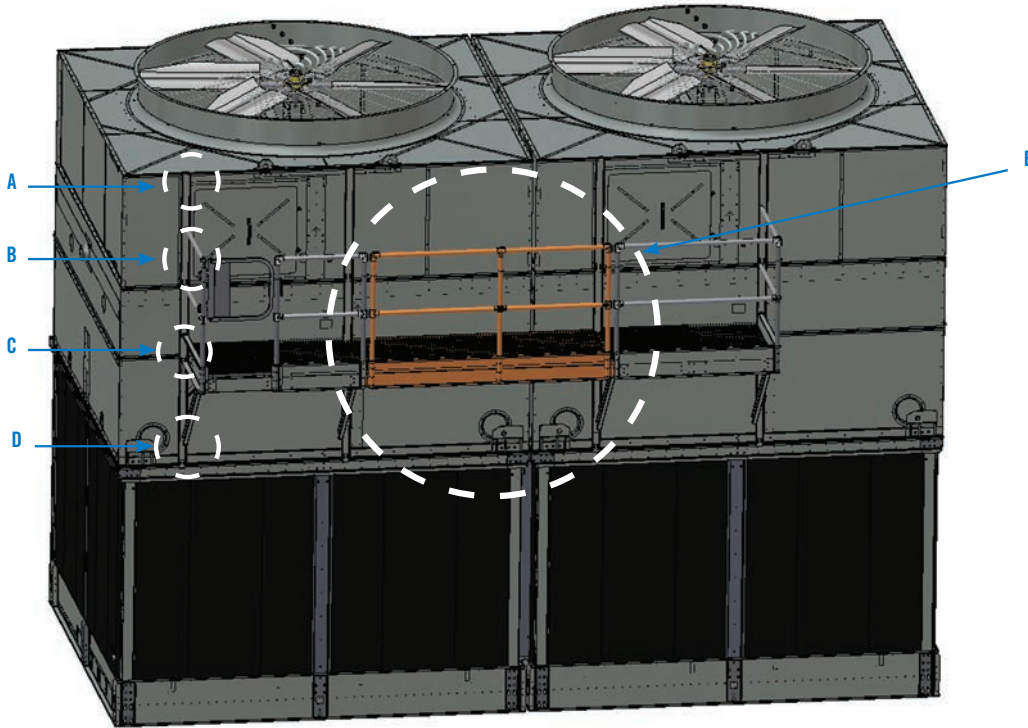
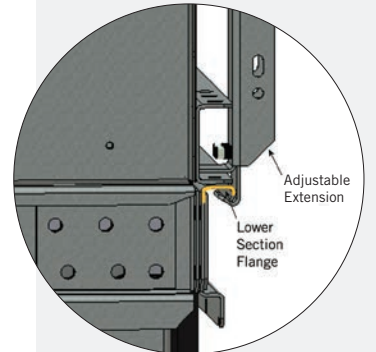


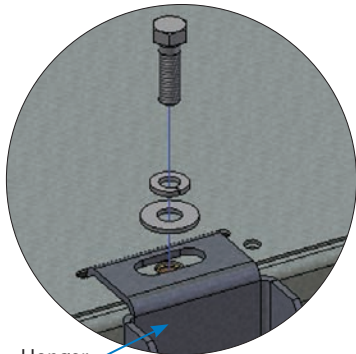
Figure 34. Mechanical Access Platform PF2/PC2-1024, PF2/PC2-1224, and PF2/PC2-2424 with One Fan Per Cell



NOTE: In Figure 34, the PF2/PC2-1224 is shown. PF2/PC2-2012 and PF2/PC2-2412 models have two cells and two fans.

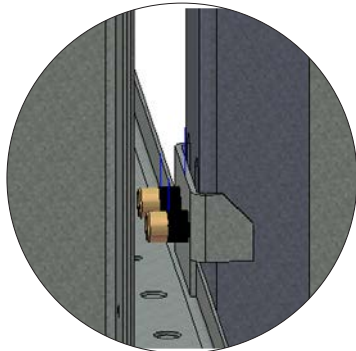


Detail D

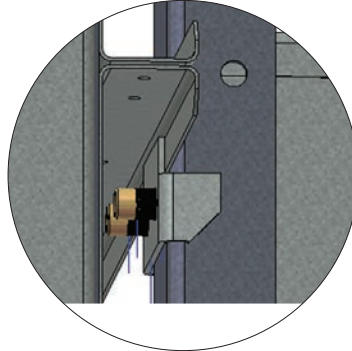


Hanger

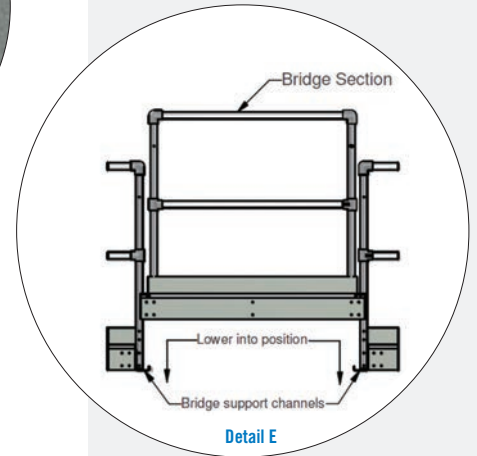
Detail A



Detail B



Detail C



Detail E

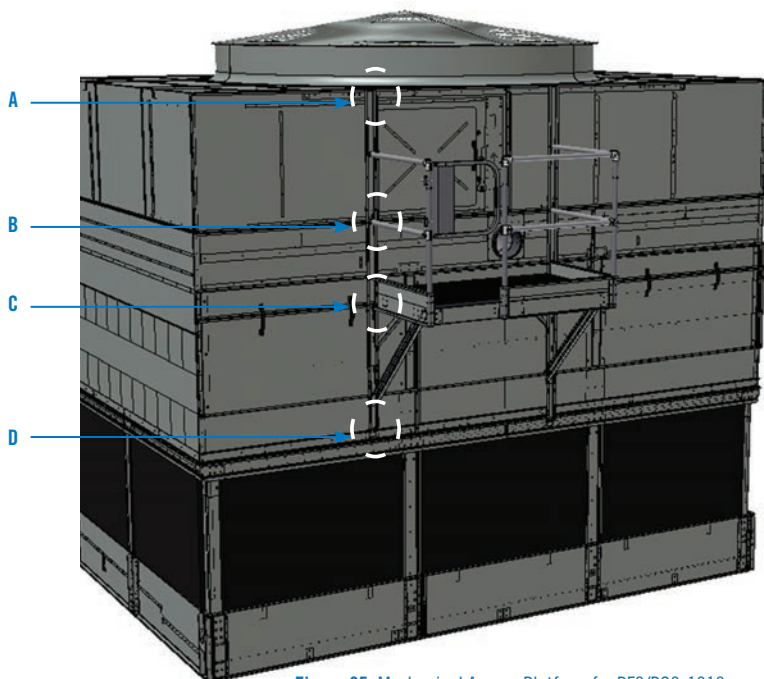


Figure 35. Mechanical Access Platform for PF2/PC2-1218 and PF2/PC2-2418 Units with One Fan Per Cell



NOTE: In Figure 35, the PF2/PC2-1218 with one fan is shown. The PF2/PC2-2418 has two cells and two fans total.

NOTE: In Figure 36, the PF2/PC2-1218 with two fans is shown. The PF2/PC2-2418 has two cells and four fans total. In Figure 36, the PF2/PC2-1236 with two cells is shown. The PF2/PC2-2436 has four cells and four fans total.

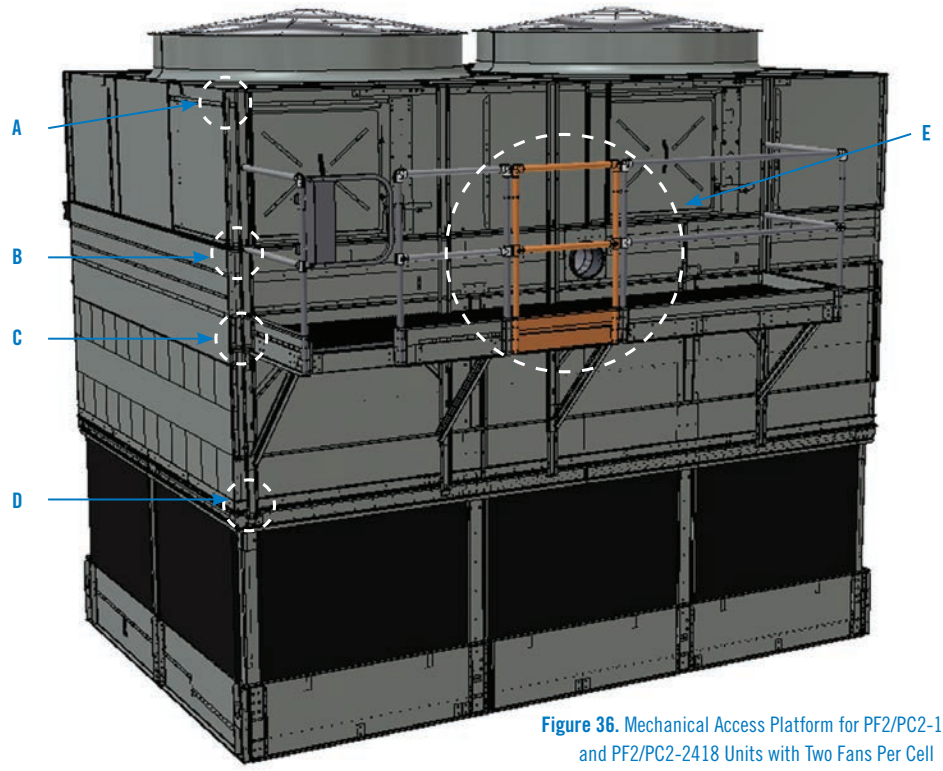
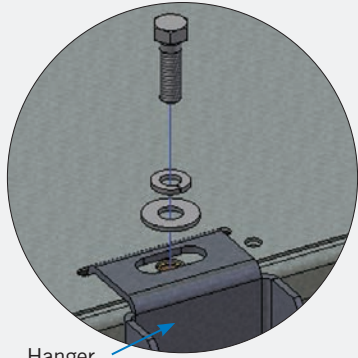
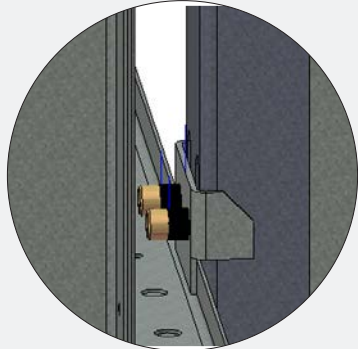


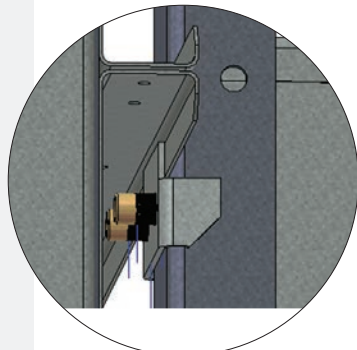
Figure 36. Mechanical Access Platform for PF2/PC2-1218 and PF2/PC2-2418 Units with Two Fans Per Cell



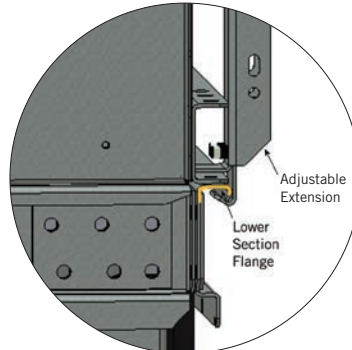
Hanger
Detail A



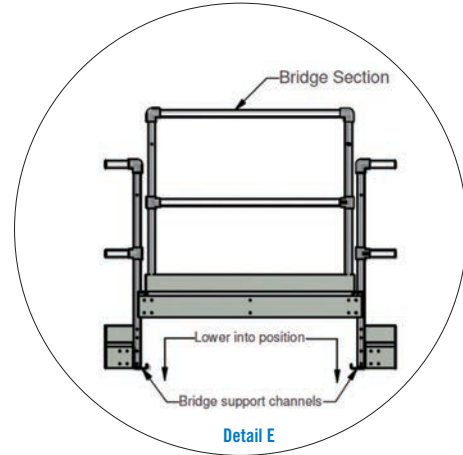
Detail B



Detail C



Detail D



Detail E

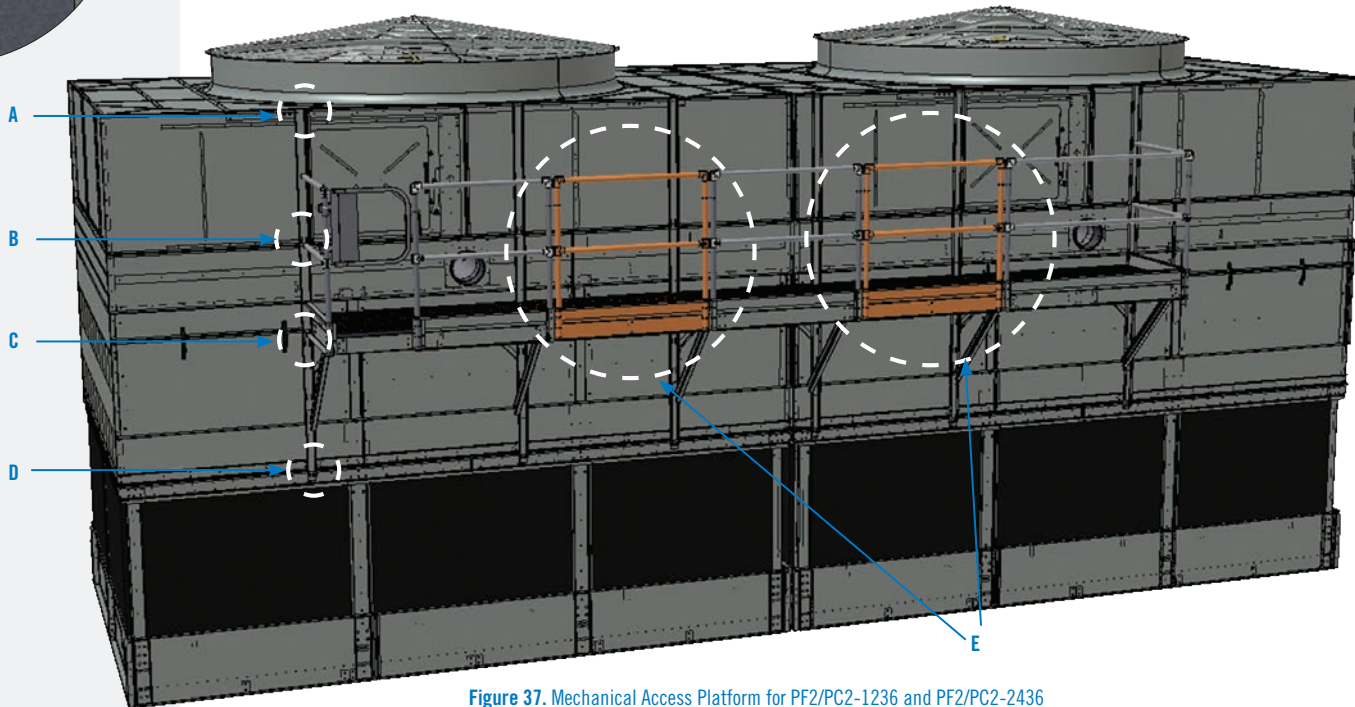
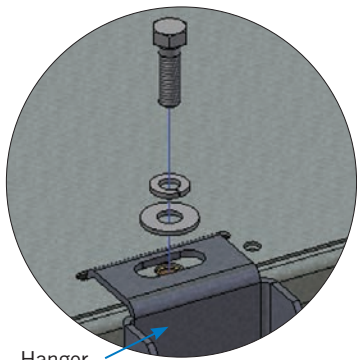


Figure 37. Mechanical Access Platform for PF2/PC2-1236 and PF2/PC2-2436 Units with One Fan Per Cell and Two Cells

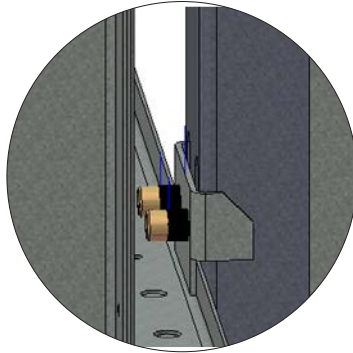


Optional Accessory Installation

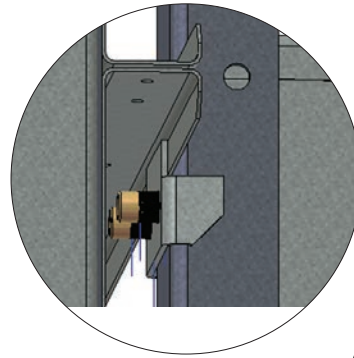
Mechanical Access Platform



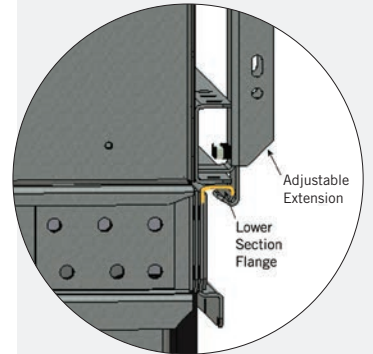
Detail A



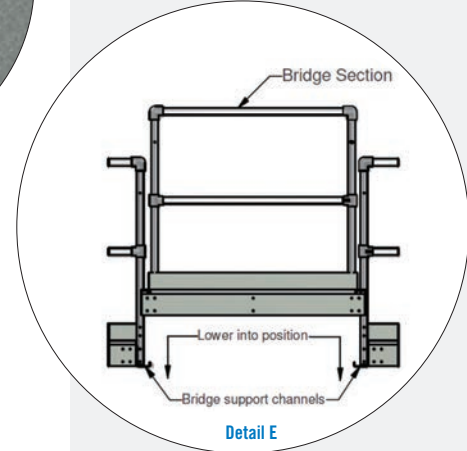
Detail B



Detail C



Detail D



Detail E

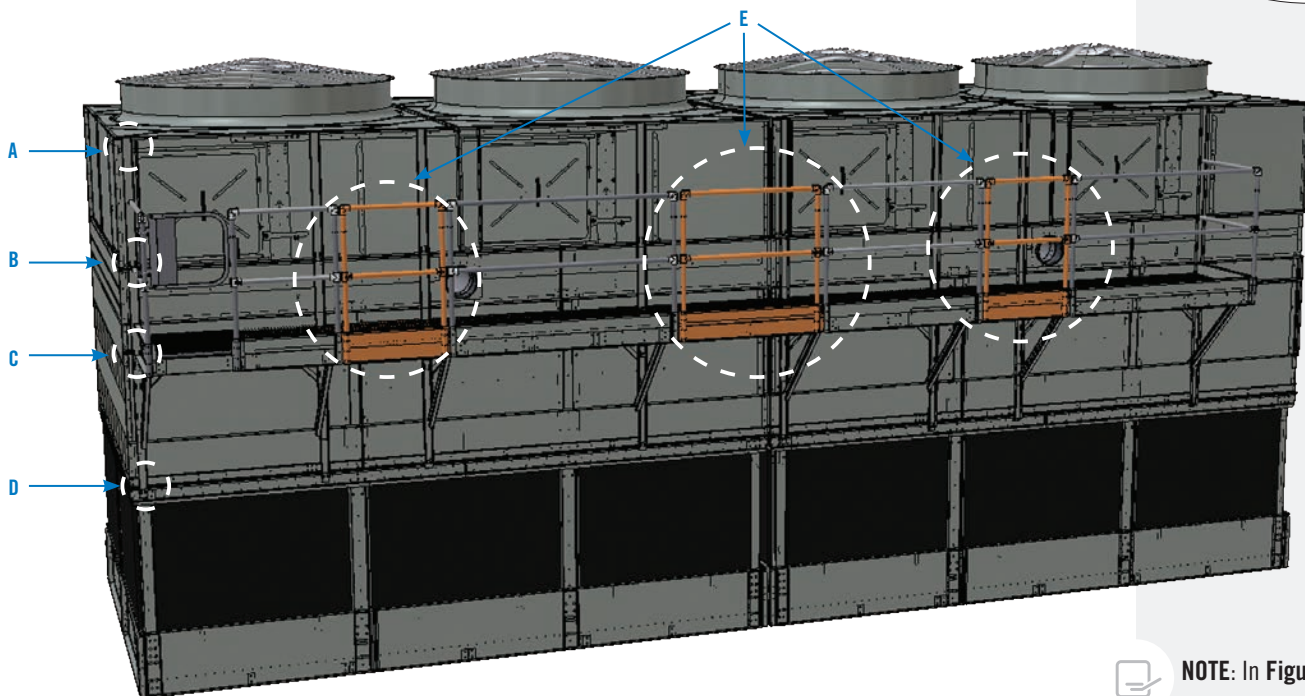


Figure 38. Mechanical Access Platform for PF2/PC2-1236 and PF2/PC2-2436 Units with the Two Fans Per Cell and Two Cells



NOTE: In Figure 38, the PF2/PC2-1236 with two cells and four fans total is shown. The PF2/PC2-2436 has four cells and eight fans total.

NOTE: A mechanical access platform ladder is not available for PF2/PC2-0406 and PF2/PC2-0412 models.



Mechanical Access Platform Ladder (Optional)

1. Assemble the lower support assembly as shown and attach the assembly to the unit using the lower support bracket. See **Detail C** in **Figures 39** or **41** for the figure that corresponds to your platform option.
2. Attach the ladder to the platform utilizing provided bolts as shown in **Detail A** and **B** in **Figures 39**, **40**, or **41**. When securing ladder to unit, orient all bolt heads inside of the ladder and use flatwashers and locknuts on all fasteners.
3. Attach the ladder to the lower support assembly using the ladder clips provided.
4. Check and tighten all ladder fasteners before using the ladder.

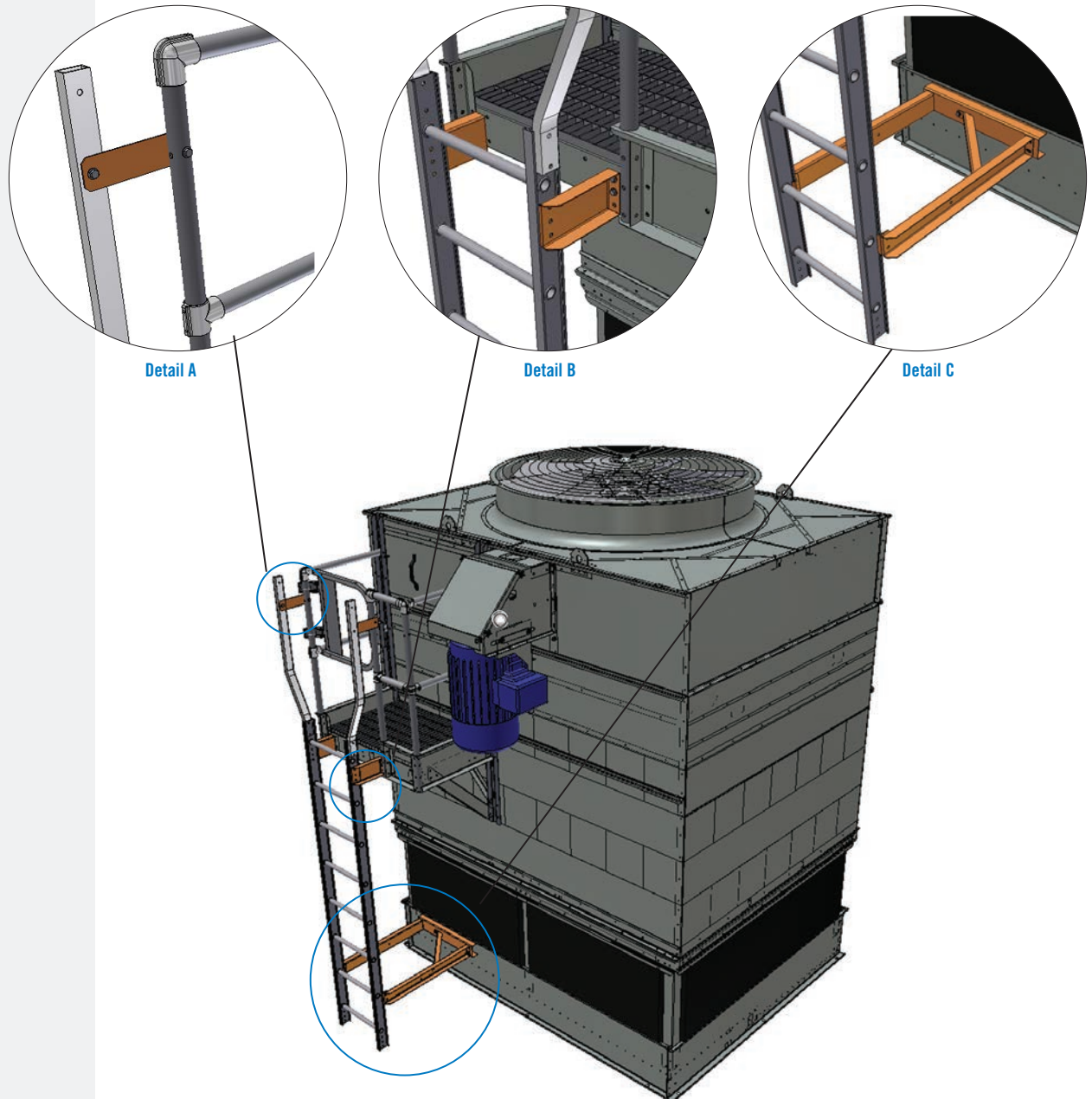


Figure 39. Mechanical Access Platform Ladder Installation for all Units Except for PF2/PC2-1218, PF2/PC2-1236, PF2/PC2-2418, and PF2/PC2-2436 Units



Optional Accessory Installation

Mechanical Access Platform Ladder

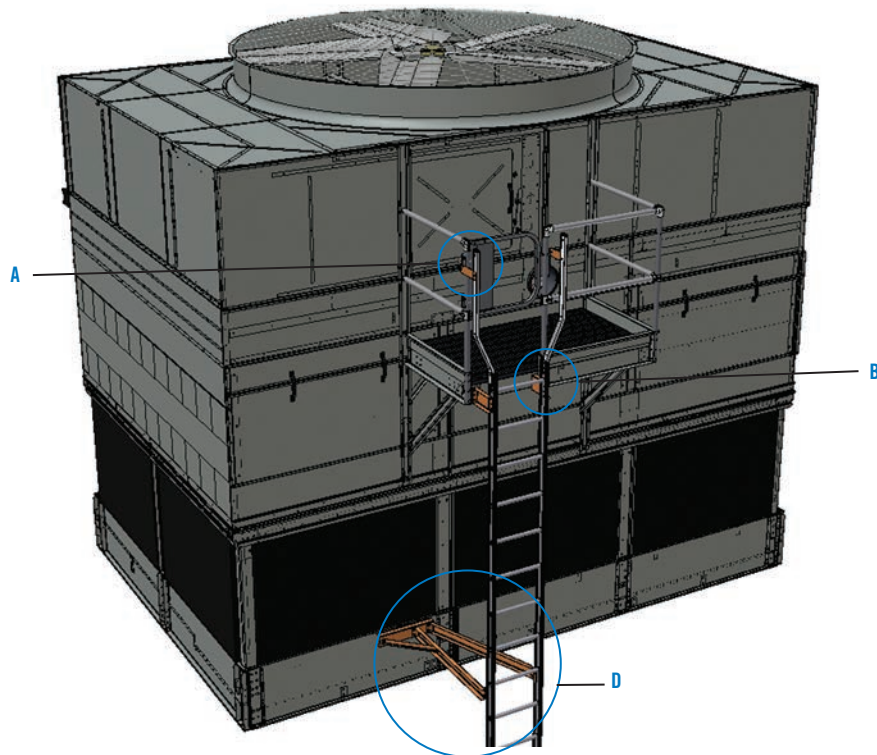
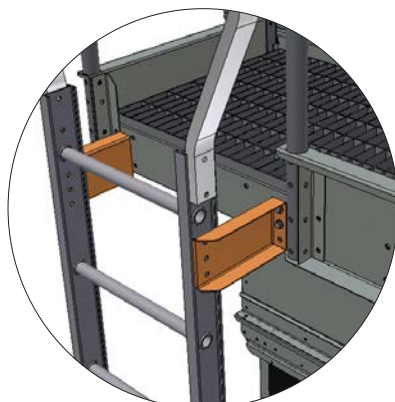


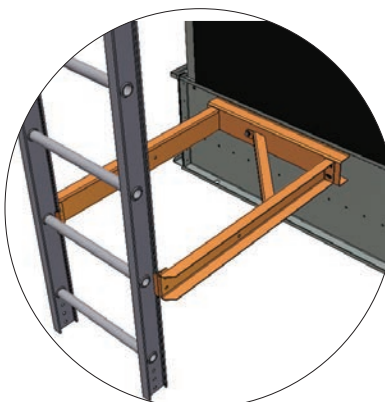
Figure 40. Mechanical Access Platform Ladder Installation for PF2/PC2-1218, PF2/PC2-1236, PF2/PC2-2418, and PF2/PC2-2436 Units with One Fan Per Cell



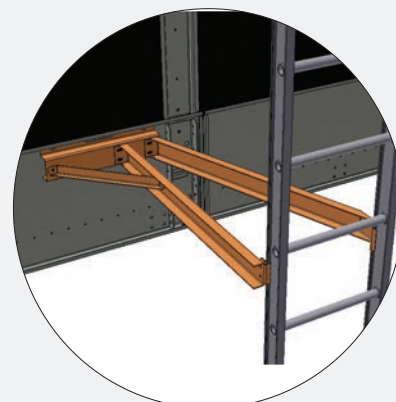
Detail A



Detail B



Detail C



Detail D

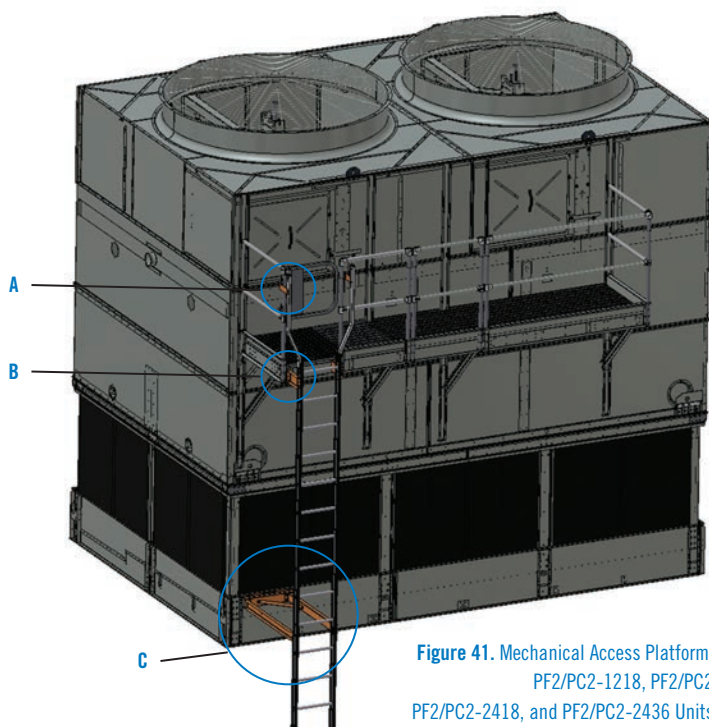


Figure 41. Mechanical Access Platform Ladder Installation for PF2/PC2-1218, PF2/PC2-1236, PF2/PC2-2418, and PF2/PC2-2436 Units with Two Fans Per Cell

Basin Level Platform (Optional)

All models except for the PF2/PC2-0406 have the basin level platform available as an option. Refer to **Figure 42** for the basin level platform assembly.

1. Lift the platform into place by aligning the clips at the top of the platform with the flange on the unit just above the louvers, as shown in **Figure 43, Detail A**. Align the clips at the bottom of the platform with the factory installed mounting bracket, as shown in **Figure 43, Detail B**.
2. Secure the platform to the unit using 3/8" bolts provided.

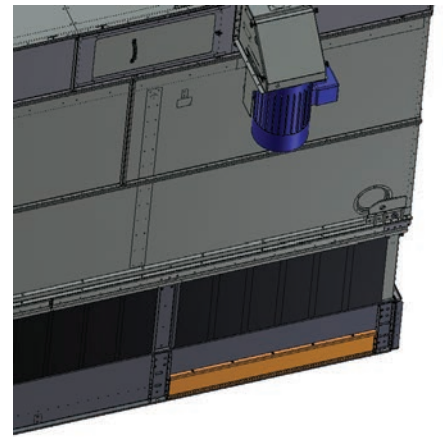


Figure 42. Basin Level Platform Mounting Bracket

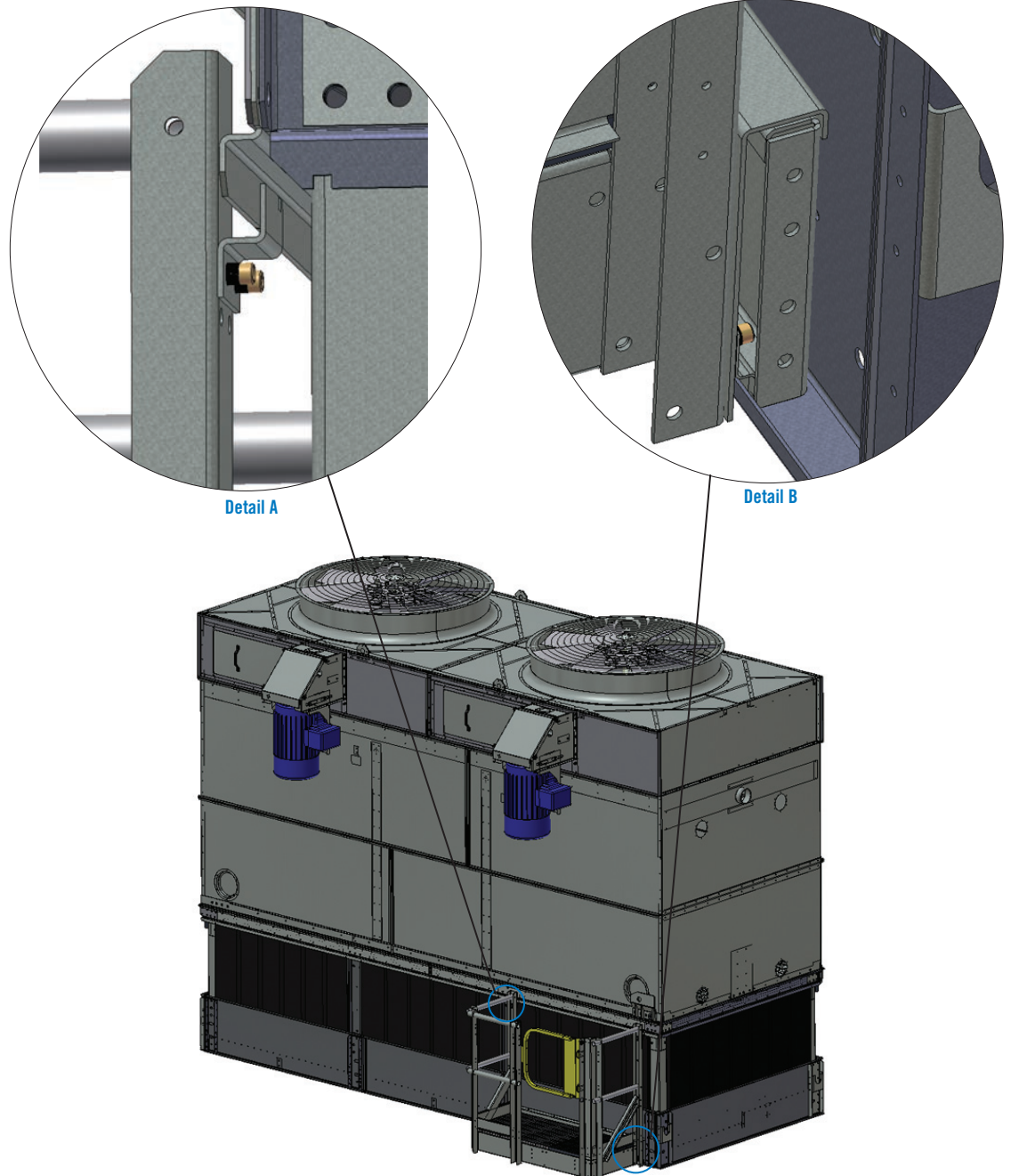


Figure 43. Basin Level Platform Installation



Basin Level Platform Ladder (Optional)

1. Attach the ladder to the platform utilizing provided bolts as shown in **Detail A** and **B** in **Figures 44**. When securing ladder to unit, orient all bolt heads inside of the ladder and use flatwashers and locknuts on all fasteners.
2. Check and tighten all ladder fasteners before using the ladder.



NOTE: A basin level platform ladder is not available for PF2/PC2-0406 models.

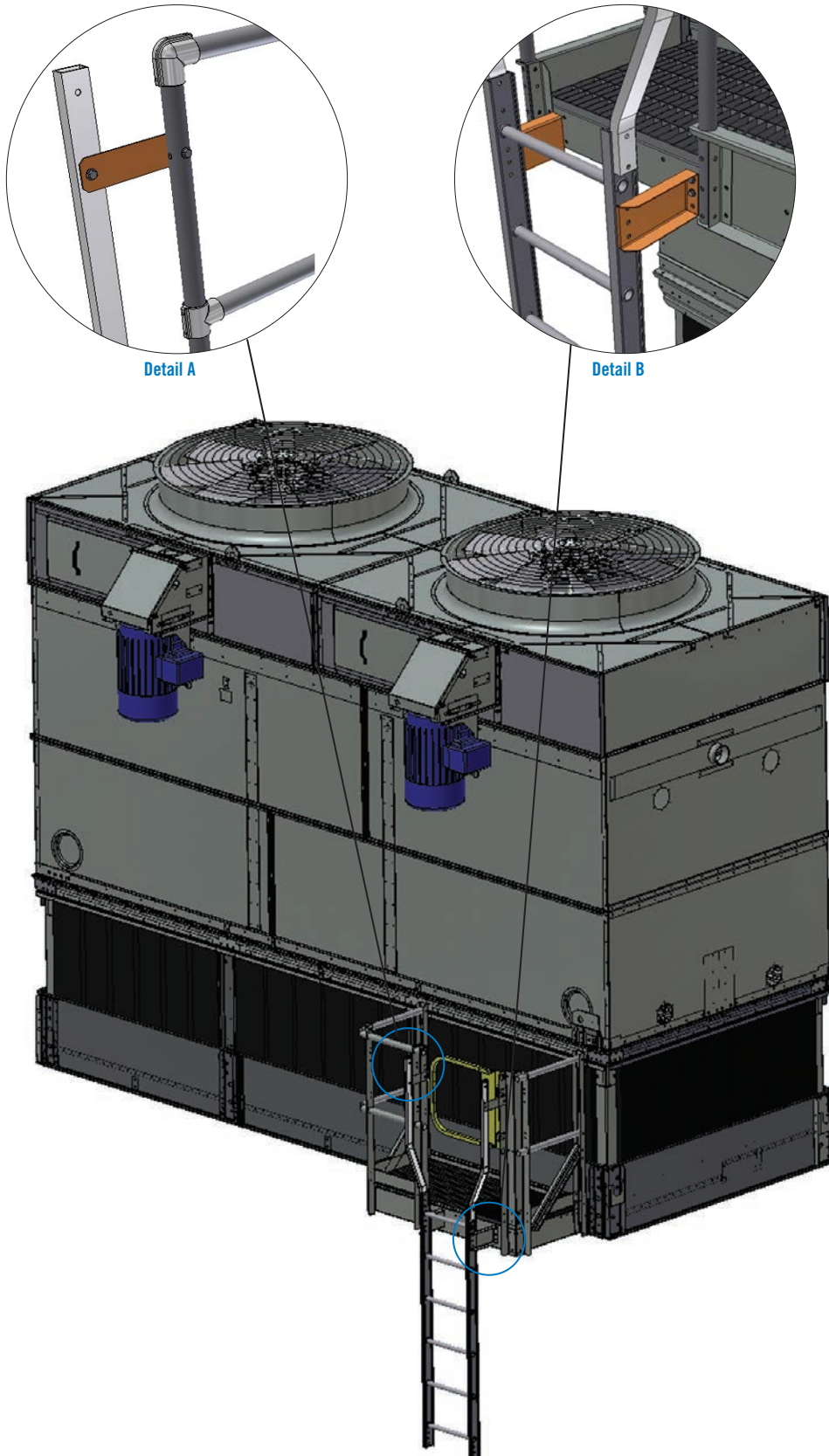


Figure 44. Basin Level Platform Ladder Installation

NOTE: Safety gates are provided for all handrail openings, and all components are designed to meet OSHA requirements.



Ladder Safety Cage (Optional)

1. If the safety cage is shipped in multiple pieces, reassemble the safety cage.
2. Bolt the safety cage to the ladder using flatwashers and locknuts. Orient all fasteners with bolt heads inside safety cage. See **Figure 45, Detail A through D** and refer to **Table 4** for the quantity of bolting locations for different safety cage heights.

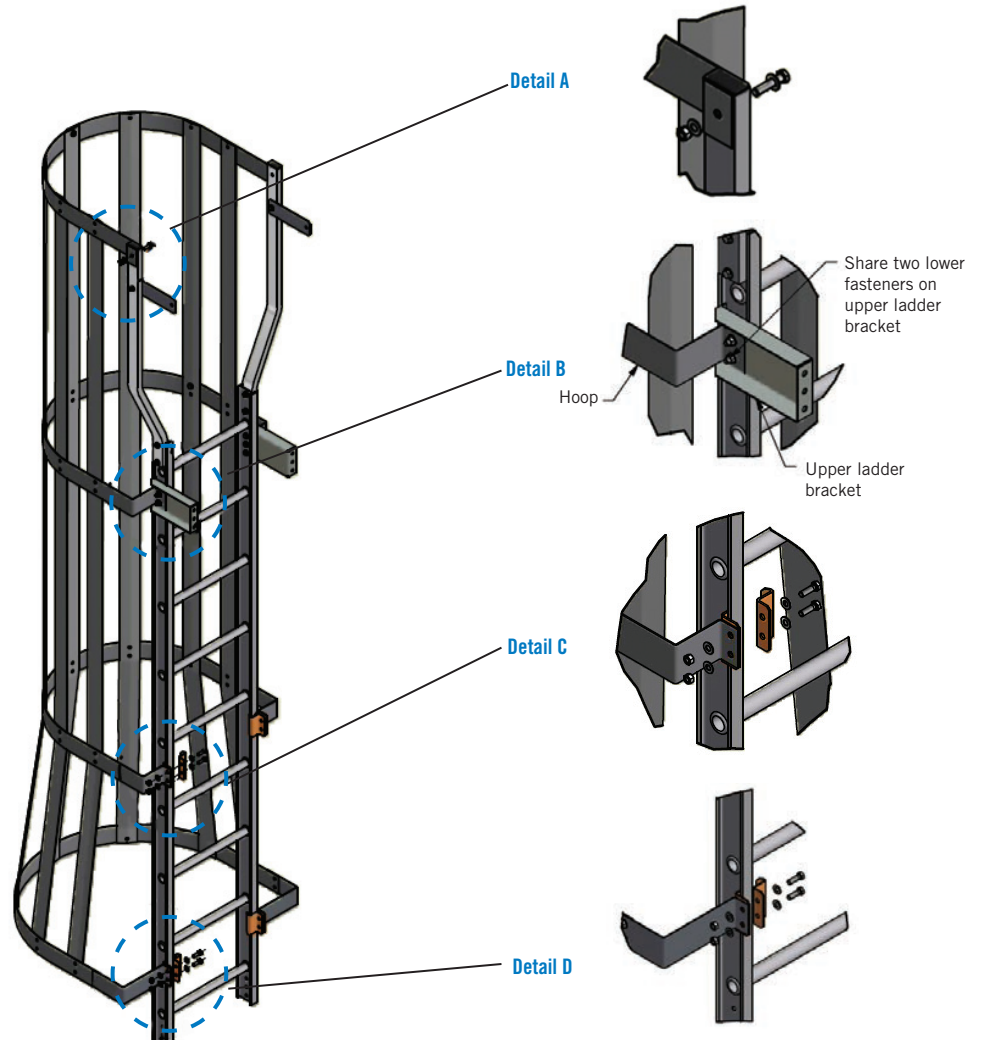


Figure 45. Safety Cage

Cage Height (ft)	Bolting Location				Cage Height (ft)	Bolting Location				Cage Height (ft)	Bolting Location			
	A	B	C	D		A	B	C	D		A	B	C	D
4	1	–	–	1	12	1	1	2	1	20	1	1	4	1
5	1	1	–	1	13	1	1	2	1	21	1	1	4	1
6	1	1	–	1	14	1	1	2	1	22	1	1	4	1
7	1	1	–	1	15	1	1	2	1	23	1	1	4	1
8	1	1	–	1	16	1	1	2	1	24	1	1	4	1
9	1	1	1	1	17	1	1	3	1	25	1	1	5	1
10	1	1	1	1	18	1	1	3	1	27	1	1	5	1
11	1	1	1	1	19	1	1	3	1					

Table 4. Ladder Safety Cage Bolting Location and Quantities



Ladder Safety Cage

Automatic Bearing Greasers

Basin Accessories

Automatic Bearing Greasers (Optional)

1. Verify the mounting brackets are factory installed.
2. Fill the extended lube lines with BAC compatible water resistant grease using a manual grease gun. See the "Fan Shaft Bearings" section of the *PF2 and PC2 Operation & Maintenance Manual* available on www.BaltimoreAircoil.com.
3. Thread automatic bearing greasers into 3/8" x 1/4" adapters on mounting brackets.
4. For programming, operation, and trouble shooting of the greaser, consult the user manual shipped with the greaser. This manual is also available through your local BAC Representative.

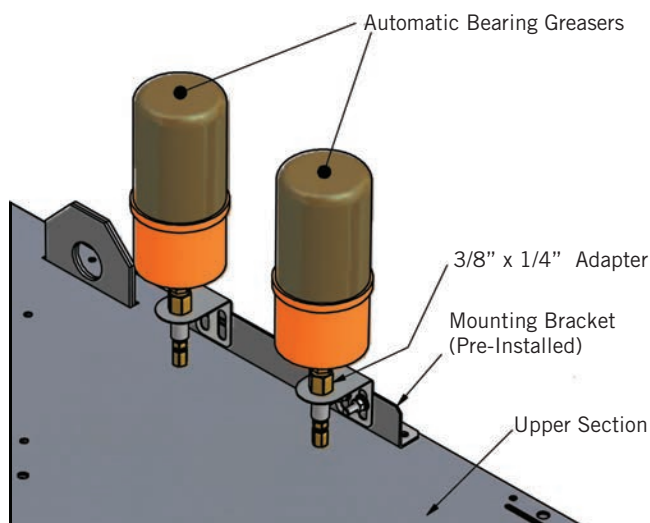


Figure 46. Automatic Bearing Greasers



NOTE: Automatic bearing greasers can be added at the time of order or as an aftermarket item.

Basin Accessories (Optional)

Basin accessories are not factory installed and will be located in a box inside the unit or secured to the interior of the unit. Refer to the submittal drawings for basin accessory installation locations. Utilize an appropriate pipe thread sealant when installing accessories into basin fittings.

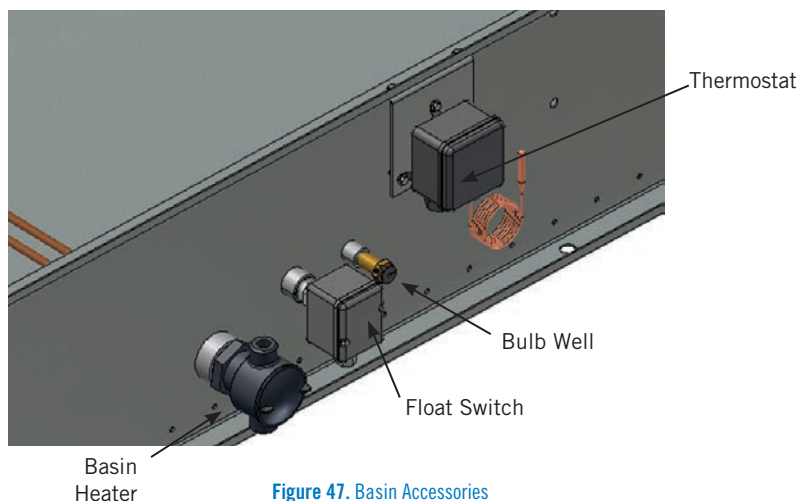


Figure 47. Basin Accessories



NOTE: Basin accessories can be added at the time of order or as an aftermarket item.

NOTES:

1. The heater control panel should be within sight of the heater if a disconnect switch option is selected.
2. Maintain a water level at least 2" over the heaters by ensuring proper operation of make-up water level control. Low water may lead to over temperature conditions near the heater.
3. All power wiring should have a temperature rating of 167°F (75°C), and be rated for the number of wires in the conduit.
4. The wiring should be sized for the quantity of incoming wires in the conduit and the amperage of the branch circuit protective device as directed by the NEC/CEC, or any other local directives.
5. If non-metallic conduit is used, provide a circuit grounding conductor that meets NEC/CEC requirements. Ground lugs are provided in the heater control panel.



Heater Control Panel (Optional)

1. Carefully plan the location of the control panel. Measure the factory supplied probe cord length. Do not attempt to change the cord length.
2. After selecting the installation site, mount the control panel with four 5/16" (field supplied) bolts through the mounting feet on the enclosure.
3. The main incoming power hub and the main power termination points are sized for wires based on the total nameplate kW and voltage. The actual load for a particular installation may be less. Either compute the actual load on the heater control panel (the total kW of all the heaters connected to it) or use the nameplate rating to determine the wire size required. The field supplied branch circuit disconnect switch and the branch circuit protective devices (fusing or circuit breaker) should be sized per NEC or local code requirements.
4. Connect the incoming power wire conduit to the incoming power hub provided on the control panel. Make sure the connection is water tight and secure. Pull the incoming power wire into the control panel enclosure and make connections per the control panel-wiring diagram.
5. Connect the heater power wire conduit(s) to the heater power wire hub(s) provided on the control panel. Make sure the connection is watertight and secure. Pull the heater power wire into the control panel enclosure and make the connections per the control panel wiring diagram. Conduit connections to multiple heaters should run until the conduit terminates at the last heater. Jumpering from one heater to the next is not recommended.
6. If the heater has a thermal cutoff, wire the cutoff back to the terminal block in the panel per the wiring diagram. This is a Class 1 circuit and can be in the same conduit as the power wiring. If there are two or more heaters, connect the cutoffs in series as shown in the wiring diagram.
7. If alternative conduit hubs are drilled, or if supplied hubs are not used, replace the plastic protective caps inside the hubs with steel plugs.
8. If leakage or condensation is likely to occur in the conduit runs leading to the control panel, install a drain in the bottom of the control panel and form a conduit loop.
9. Verify operation by following the "Stand Alone BAC Heater Control Panel" in the *PF2 and PC2 Operation & Maintenance Manual*.



Heater Control Panel

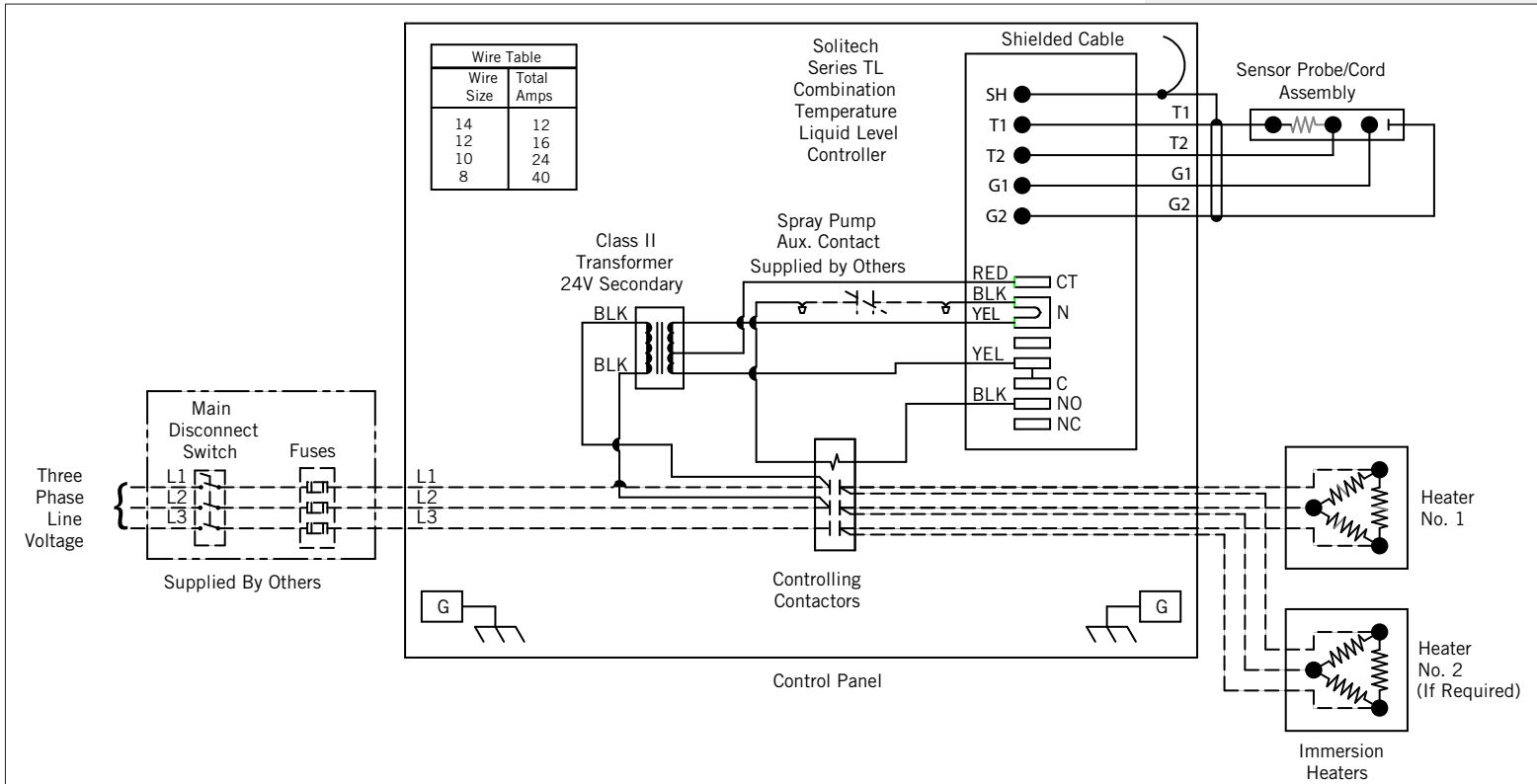


Figure 48. Example Wiring Diagram for Stand Alone BAC Heater Control Panel (Refer to Submittal Drawing for Specific Wiring Diagram)



NOTE: Figure 48 is superseded by any drawing supplied with the panel by the manufacturer.

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