



**BALTIMORE
AIRCOIL COMPANY**



PCE Evaporative Condensers

RIGGING AND INSTALLATION INSTRUCTIONS





About rigging and installation

The BAC equipment should be rigged and installed as outlined in this bulletin.

These procedures should be thoroughly reviewed prior to the rigging and operation to acquaint all personnel with the procedures to be followed and to assure that all necessary equipment will be available at the job site. Be sure to have a copy of the unit certified drawing available for reference. If you do not have a copy of this drawing or if you need additional information about this unit, contact the local BAC representative. His name and phone number can be found on the www.BaltimoreAircoil.com. The model type and serial number of your equipment are indicated on the unit nameplate.

Recommended maintenance and monitoring programme

Checks and adjustments	Start-Up	Weekly	Monthly	Quarterly	Every 6 months	Annually	Shutdown
Cold water basin and basin strainers	X			X			
Operating level and make-up	X		X				
Blow down	X		X				
Sump heater package	X				X		
Belt tension	X		X				
Drive alignment	X					X	
Drive system	X				X		
Locking collar	X						
Rotation of fan(s) and pump (s)	X						
Motor voltage and current	X			X			
Unusual noise and/or vibration	X		X				

Inspections and monitoring	Start-Up	Weekly	Monthly	Quarterly	Every 6 months	Annually	Shutdown
General condition	X		X				
Heat transfer section and drift eliminators	X				X		
Combined inlet shields	X			X			
Water distribution	X				X		
Fan shaft & Axial fan	X			X			
Fan motor	X			X			
Spray water pump	X			X			
Electric water level control package (option)	X				X		
Level or alarm switches				X			
TAB test (dip slides)	X	X					
Circulating water quality	X		X				
System overview	X					X	
Record keeping	as per event						

Lubrication	Start-Up	Weekly	Monthly	Quarterly	Every 6 months	Annually	Shutdown
Fan shaft bearings	X			X			X
Motor bearings*	X				X		
Adjustable motor base	X				X		X
Hinges & access doors bolts						X	

* only for motors with grease fittings with typical frame size > 200L (>30 kW)

Cleaning procedures	Start-Up	Weekly	Monthly	Quarterly	Every 6 months	Annually	Shutdown
Mechanical cleaning	X					X	X
Disinfection**	(X)					(X)	(X)
Drain basin and pump							X

** depends on applied code of practice

Notes

1. Water treatment and auxiliary equipment integrated in the cooling system may require additions to the table above. Contact suppliers for recommended actions and their required frequency.
2. Recommended service intervals are for typical installations. Different environmental conditions may dictate more frequent servicing.
3. When operating in ambient temperatures below freezing, the unit should be inspected more frequently (see Cold weather operations in the appropriate Operating and Maintenance Instructions).
4. For units with belt drive, tension on new belts must be readjusted after the first 24 hours of operation and monthly thereafter.



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PCE GENERAL INFORMATION

About engineering and application practices

This bulletin only refers to the assembly of the unit. To ensure a proper operation, a correct integration of the unit in the overall installation is mandatory. For good engineering and application practices on layout, levelling, connecting pipework, etc., please refer to our website:
<http://www.baltimoreaircoil.eu/knowledge-center/application-information>.

Shipping

BAC cooling equipment is factory assembled to assure uniform quality and minimum field assembly. All units ship in three sections as standard.

If discharge sound attenuation and/or finned discharge coil(s) are included in the order, the section(s) ship separately for rigging on site.

For the dimensions and weights of a specific unit or section, refer to the certified drawing.



CAUTION

Do not cover units with PVC eliminators or fill with a plastic tarpaulin. Temperature increase due to sun radiation could deform the fill or eliminators.

Inspection before rigging

When the unit is delivered to the job site, 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 guards
- Fan(s) and fan shaft(s)
- Coils
- Water distribution system
- Strainers
- Float valve assembly
- Spray pump(s)
- Eliminators
- Combined inlet shields



- Interior / exterior surfaces
- Miscellaneous items

An envelope with check-list is stored in a wooden no nail crate or a plastic container which is placed in the lower section. For safety reasons, access doors / panels may be sealed with bolts. The following table specifies which wrench is required to open them.

Wrench to open access door
17 mm

Required wrenches to open access door

The wooden no nail crate / plastic container also contains miscellaneous parts such as gasket, hardware and accessory items.

At temperatures below -10°C the butyl sealer tape might lose its flexibility. We recommend to store the sealer tape in a heated room before using it during rigging at freezing temperatures.



CAUTION

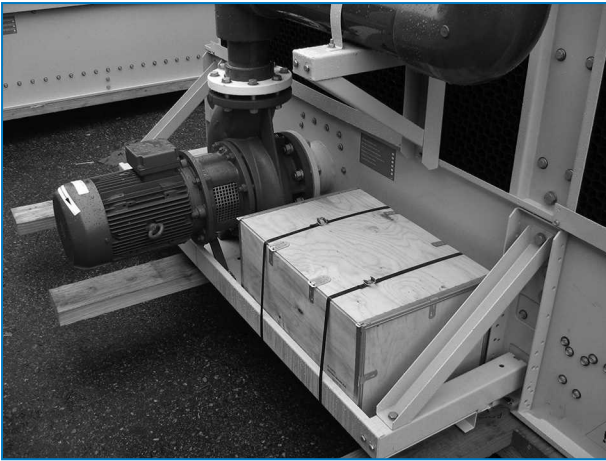
Be sure to remove all miscellaneous items from the pan before the unit is assembled.

If the hardware is packed in a plastic container it is located in the cold water module (lower section) and fixed to a lifting ear.



Hardware location


If the hardware is packed in a wooden box, it is fixed with cord straps to the pump base.



Hardware location

Unit weights

Before rigging any BAC equipment, the weight of each section should be verified on the unit certified drawing.

 These weights are **approximate** and should be confirmed by weighing **before lifting** when available hoisting capacity provides little margin for safety.



CAUTION

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

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.

Anchoring

The unit must be properly anchored in place.

Refer to the suggested support details on the certified drawing for locations of the mounting holes. Anchor bolts must be provided by others.

Holes suitable for 20 mm bolts are provided in the bottom flange of the lower section for bolting the unit to the support beams.

Leveling

The unit must be level for proper operation and ease of piping.

Electrical connections

The units are delivered with a number of electrical components that need to be connected after rigging. For all electrical components, please refer to the specific wiring diagrams in the submittal package.



Connecting pipework

All piping external to BAC cooling equipment must be supported separately.

In case the equipment is installed on vibration rails or springs, the piping must contain compensators to eliminate vibrations carried through the external pipework.

Suction pipe sizing should be done according to good practice, which may for larger flows require larger pipe diameters than the outlet connection. In such cases adapter pieces need to be installed.

Coil connections

Hot dip galvanized and stainless steel coils of BAC condensers are filled with a low pressure inert gas at the factory before shipping, to ensure an optimal internal corrosion protection. It is recommended to check the overpressure every six months (connect a manometer to the valve).

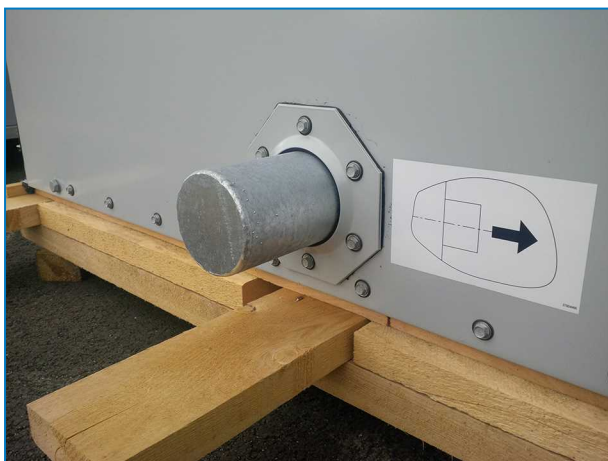
On site, the pressure needs to be released from the coil. Remove the plug first before opening the pressure relieve valve.

In case of threaded connections, clean up the thread prior to connecting it to the pipework.

Non-threaded connections must be bevelled on site before they can be welded.



Upper coil connection with pressure release valve on condensers.



Lower closed-off coil connection on evaporative condensers.



CAUTION

Once the coil is no longer protected by the inert gas, proper actions against corrosion must be taken on site.

Purge requirements

The installer of BAC condensers must ensure proper air purging of the system prior to operation. Entrained air can obstruct free drainage of refrigerant and reduce condensing capacity, resulting in higher operating pressures than designed.

All connections (installed by others) must be leak free and tested accordingly.

To verify absence of non condensables in the refrigeration system, follow the instructions in the BAC Application Handbook – EU Edition (<https://www.baltimoreaircoil.eu/en/downloads/pdf-Application-Handbook-EU-Edition>), Section "Condenser Engineering Guidelines".

Freeze protection

These products must be protected against damage and/or reduced effectiveness due to possible freeze-up by mechanical and operational methods. Please contact your local BAC representative for recommended protection alternatives.

Bleed Line Installation

On units operating with a remote sump tank, install a bleed line with valve between the system circulating pump discharge riser and a convenient drain. Locate the bleed line in a portion of the riser piping that drains when the pump is off.

Evaporative condensers that are furnished with a factory installed circulating pump include a bleed line with valve.

The bleed valve should always be open when the unit is in operation, unless the bleed rate is automatically controlled by a water treatment system.

Safety Precautions

All electrical, mechanical and rotating machinery constitutes a potential hazard, particularly for those not familiar with its design, construction and operation. Accordingly, adequate safeguards (including use of protective enclosures where necessary) should be taken with this equipment both to safeguard the public (including minors) from injury and to prevent damage to the equipment, its associated system and the premises.

If there is doubt about safe and proper rigging, installation, operation or maintenance procedures, contact the equipment manufacturer or his representative for advice.

When working on operating equipment, be aware that some parts may have an elevated temperature. Any operations on elevated level have to be executed with extra care to prevent accidents.



AUTHORIZED PERSONNEL

The operation, maintenance and repair of this equipment should be undertaken only by personnel authorized and qualified to do so. All such personnel should be thoroughly familiar with the equipment, the associated systems and controls and the procedures set forth in this and other relevant manuals. Proper care, personal protective equipment, procedures and tools must be used in handling, lifting, installing, operating, maintaining and repairing this equipment to prevent personal injury and/or property damage. Personnel must use personal protective equipment where necessary (gloves, ear plugs, etc...)

MECHANICAL SAFETY

Mechanical safety of the equipment is in accordance with the requirements of the EU machinery directive. Depending upon site conditions it also may be necessary to install items such as bottom screens, ladders, safety cages, stairways, access platforms, handrails and toe boards for the safety and convenience of the authorized service and maintenance personnel.

At no time this equipment should be operated without all fan screens, access panels and access doors in place/closed and properly secured.

When the equipment is operated with a variable fan speed control device, steps must be taken to avoid operating at or near to the fan's «critical speed».

For more information consult your local BAC representative.

ELECTRICAL SAFETY

All electrical components associated with this equipment should be installed with a lockable disconnect switch located within sight of the equipment.

In the event of multiple components, these can be installed after a single disconnect switch but multiple switches or a combination thereof are also allowed.

No service work should be performed on or near electrical components unless adequate safety measures are taken. These include, but are not limited to the following:

- Isolate the component electrically
- Lock the isolation switch in order to prevent unintentional restart
- Measure that no electrical voltage is present any more
- If parts of the installation remain energized, make sure to properly demarcate these in order to avoid confusion

Fan motor terminals and connections may have residual voltage after unit shut-down. Wait five minutes after disconnecting the voltage at all poles before opening the fan motor terminal box.

LIFTING



CAUTION

Failure to use designated lifting points can result in a dropped load causing severe injury, death and/or property damage. Lifts must be performed by qualified riggers following BAC published Rigging Instructions and generally accepted lifting practices. The use of supplemental safety slings may also be required if the lift circumstances warrant its use, as determined by the rigging contractor.

LOCATION

All cooling equipment should be located as far away as possible from occupied areas, open windows or air intakes to buildings.



CAUTION

Each unit should be located and positioned to prevent the introduction of discharge air into the ventilation systems of the building on which the unit is located or those of adjacent buildings.



For detailed recommendations on BAC equipment layout, please see the BAC Application Handbook EU-Edition, the BAC website: www.baltimoreaircoil.eu or contact your local BAC Representative.

LOCAL REGULATIONS

Installation and operation of cooling equipment may be subject to local regulations, such as establishment of risk analysis. Ensure regulatory requirements are consistently met.

Non-walking surfaces

Access to and maintenance of any component needs to be performed in accordance with all local applicable laws and regulations. If the proper and required access means are not present, temporary structures need to be foreseen. Under no circumstance can one use parts of the unit, that are not designed as an access mean, unless measures can be taken to mitigate any risks that might occur from doing so.

Modifications by others

Whenever modifications or changes are made by others to the BAC equipment without written permission of BAC, the party who has done the modification becomes responsible for all consequences of this change and BAC declines all liability for the product.

Warranty

BAC will guarantee all products to be free from manufactured defects in materials and workmanship for a period of 24 months from the date of shipment. In the event of any such defect, BAC will repair or provide a replacement. For more details, please refer to the Limitation of Warranties applicable to and in effect at the time of the sale/purchase of these products. You can find these terms and conditions on the reverse side of your order acknowledgement form and your invoice.

General Notes



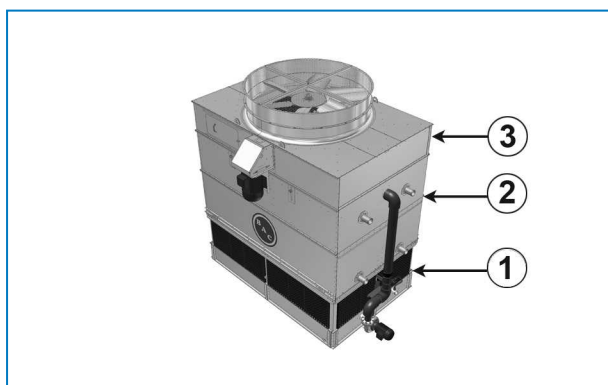
CAUTION

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



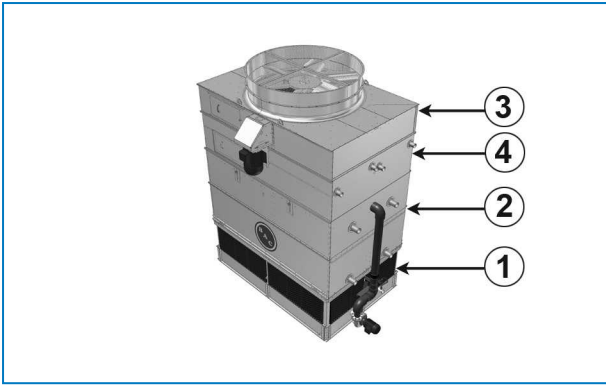
CAUTION

When the unit is installed, all metal parts created by drilling, fastening self tapping screws, grinding, welding or other mechanical works must be removed from the unit. If they remain on the unit (typically on the double break flanges) this could lead to corrosion and eventually coating damage.



Standard unit sections

1. Water collection module
2. Heat transfer module
3. Air handling module



Unit with finned discharge coil

1. Water collection module
2. Heat transfer module
3. Air handling module
4. Finned discharge coil

1. Remove any protective wood from the top horizontal flanges of the lower section. Wipe down the flanges to remove dust, dirt or moisture that may have accumulated during shipment and storage.
2. Unless unit ships fully assembled, unit must be rigged one section at the time.
3. If the delivery consists of separate sections, do not assemble before lifting, as the lifting devices provided are not designed to support the weight of the entire assembly.
4. Spreader bars of the full width of the section must be used between the lifting cables to prevent damage to the section. For extended lifts or where hazards exist, it is recommended to use the lifting devices in conjunction with safety slings placed under the unit.
5. The proper rigging sequence is as follows:



CAUTION

For 2,2 m and 2,4 m wide units the motor base assembly is shipped loose for field installation and must be removed from the water collection module where it is stored for safe transport.

- First lift the water collection module into place (no sealer required)
 - Then lift the heat transfer module into place and apply foam tape on the top flange where the next section will be positioned. Remove the disposable lifting ears before installing the next section. Re-use the hardware to close-off the holes.
 - If included in the order, lift the finned discharge coil into place and remount the lifting ears rotated 180°. Apply foam tape on the top flange, where the next section will be located.
 - Then lift the air handling module into place.
 - Lift the motor base assembly into position next to the access door of the air handling module and fasten. (Only for 2,2 m and 2,4 m wide units.) For detailed information see "External motor installation" on page 22.
 - Another possibility is to install the motor base assembly on the air handling module PRIOR to lifting and then lift this assembly in one piece (air handling module + motor). However, while installing the motor base, the air handling module cannot rest on the ground. Belts can be installed and tensioned at this moment as well.
 - If included in the order lift the discharge attenuator into place.
6. If the (pump) piping from coil products is split for transport reasons, the piping must be assembled on site by means of a flexible connection (typically a rubber sleeve or coupling).
 7. Lifting devices have been provided on all sections. The tables below give the preferred method for rigging each section of a unit.



For additional information see further in this manual under: "Rigging" on page 12.

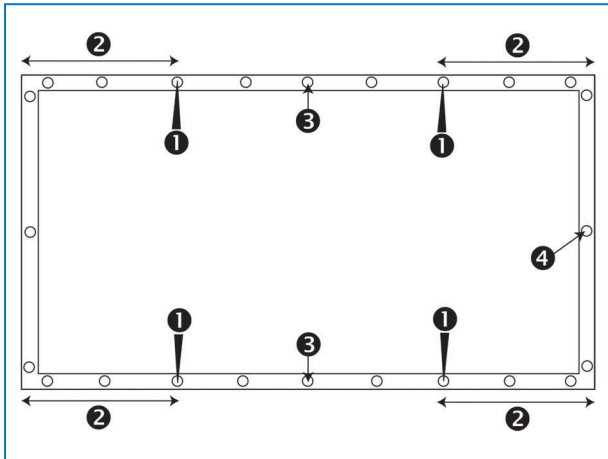
Model	Unit sections	Rigging method	Min. header bar length (mm)	Min. height "H" (mm)	Discharge attenuation	
					Rigging method	Min. height "H" (mm)
PCE-155, 135 to 144, PCE148, 159,160,169	Water collection module	A	2800	4300	F	2000
	Heat transfer module	C	2300	2700		
	Air handling module	D	2300	3000		
PCE128, 145, 147, 156, 158, 162, 172, 185	Water collection module	A	2800	4300	F	2000
	Heat transfer module	C	2500	2700		
	Air handling module	D	2500	3700		
PCE163, 178, 180, 190, 193, 197, 210, 212, 227	Water collection module	A	3700	4300	F	2000
	Heat transfer module	C	2500	2700		
	Air handling module	D	2500	3700		
PCE177, 189, 194, PCE199 to 108, CE211, PCE217 to 226, PCE233, 234, 238, 247	Water collection module	A	2800	4300	F	2500
	Heat transfer module	C	3000	2700		
	Air handling module	D	3000	4300		
PCE230, 242, 252, 253, PCE267 to 275, PCE279 to 285, PCE291, 297, 301, 304, 314	Water collection module	A	3700	4300	F	2500
	Heat transfer module	C	3000	2700		
	Air handling module	D	3000	4300		
PCE237, 259, 261, 277, 278, 286, 306, 307, 327	Water collection module	A	5500	4300	F	2000
	Heat transfer module	C	2300	2700		
	Air handling module	D	2300	3000		
PCE263, 289, 290, 308, 309, 317, 337, 339, 360	Water collection module	A	5500	4300	F	2000
	Heat transfer module	C	2500	2700		
	Air handling module	D	2500	3700		
PCE330, 338, PCE344 to 359, PCE372, 376, 385, 399	Water collection module	A	3700	4300	F	3000
	Heat transfer module	C	3700	2700		
	Air handling module	D	3700	4900		
PCE381, PCE418 to 611	Water collection module	A	5500	4300	F	3000
	Heat transfer module	C	3700	2700		
	Air handling module	D	3700	4900		

Rigging method

USE OF DRIFT PINS

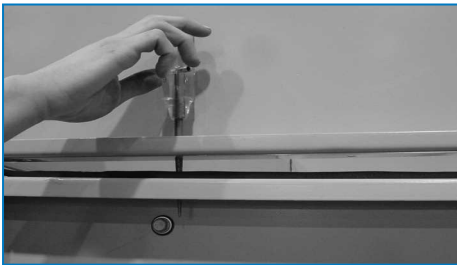
The use of drift pins during section assembly is strongly recommended. Follow the below guidelines:

1. Use drift pins in the bolt holes provided. This will guide the section onto the next section.
2. Using at least four drift pins (see figure) in the fastening holes located on the long sides of the sections to align the upper section to the lower section. To avoid incorrect alignment, refer to the below drawing for the position of the fastening holes to be used. Use additional drift pins in the middle of the unit if required, to align long panels. Make sure all holes from upper section and lower section are properly aligned before lowering the upper section completely onto the lower section.



Position of the fastening holes to be used.

1. Drift pin position.
2. The distance between the fastening hole in which the drift pin is inserted and the corner should be at least 30 cm.
3. Usage of additional drift pin for long sides.
4. Fastening hole.



Usage of drift pin to align the screw holes

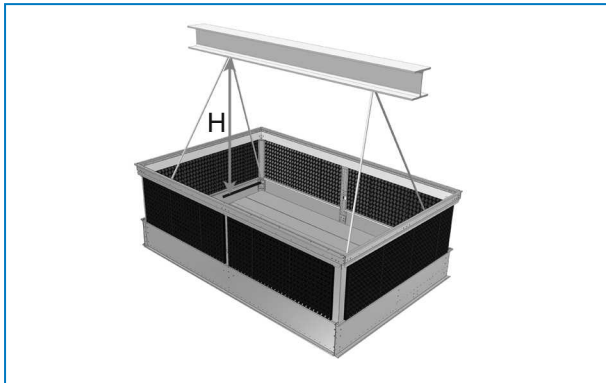


CAUTION

When lowering a section, ensure nothing can be trapped between the upper and lower flanges.

Rigging method water collection module

RIGGING METHOD A



Water collection module



Pay attention to the difference in lifting ear and tie down buckle on the lower section.

The **lifting ear** is to be used to unload unit from truck. It is designed for **upward** force.

It is installed on the inside of the water collection module (corner bracket)

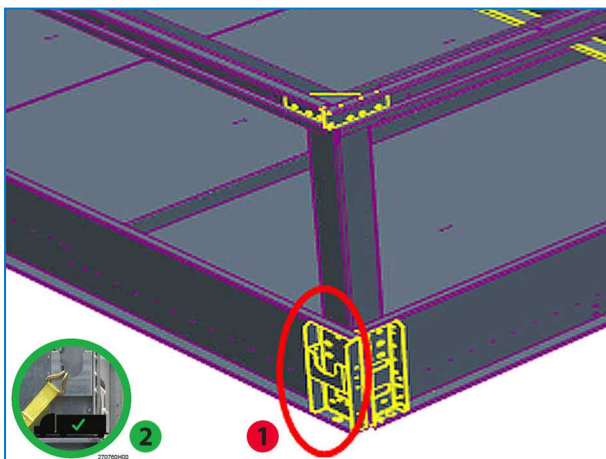
The **tie-down buckle** is only to be used to tie down (secure) unit onto truck for transport. It is designed for **downward** force only.

It is installed on the outside of the water collection module and only to be used to tie down (secure) unit onto truck for transport.



CAUTION

Do not use tie down buckle for lifting and lifting ears for tie down purpose.

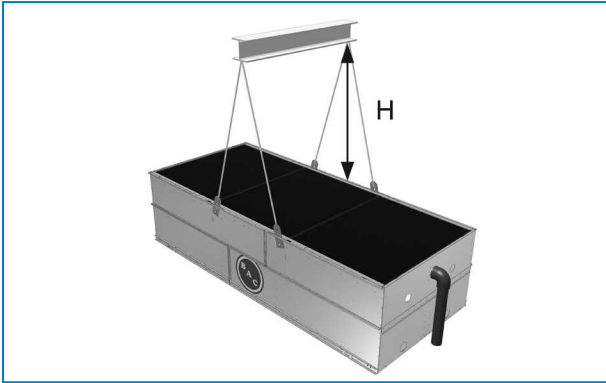


Position tie-down buckle on water collection module

1. Tie-down buckle
2. Proper use of tie down buckle

Rigging method heat transfer module

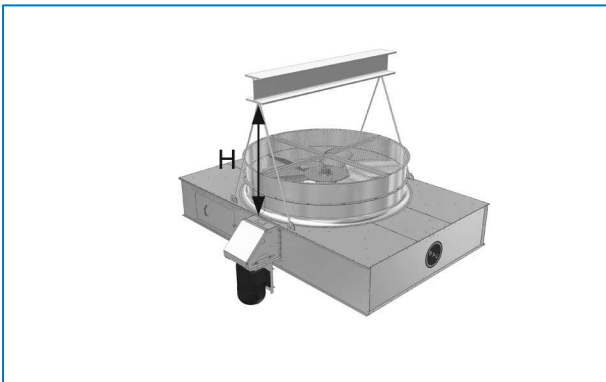
RIGGING METHOD C



Heat transfer module

Rigging method air handling module

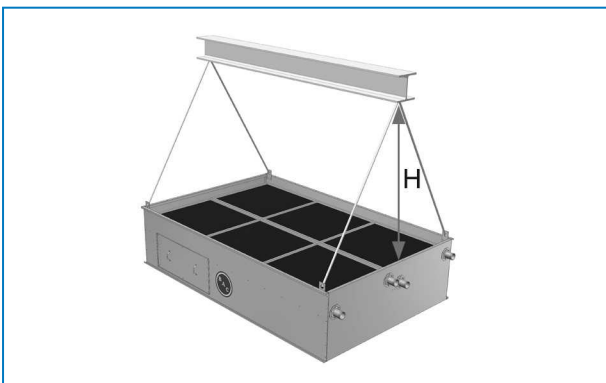
RIGGING METHOD D



Air handling module

Rigging method finned discharge coil

RIGGING METHOD E

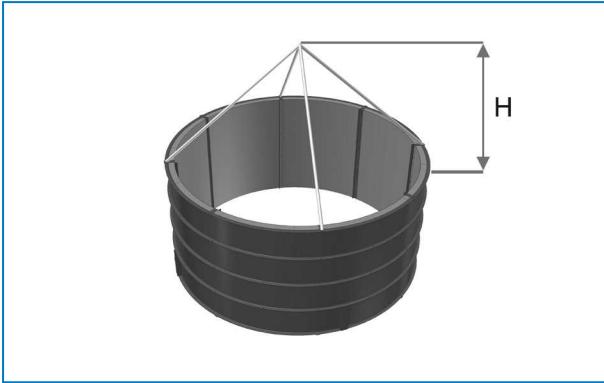


Finned discharge coil



Rigging method discharge attenuation

RIGGING METHOD F

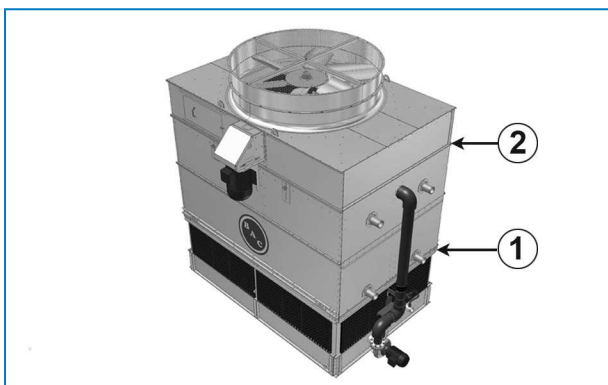


Discharge attenuation

3

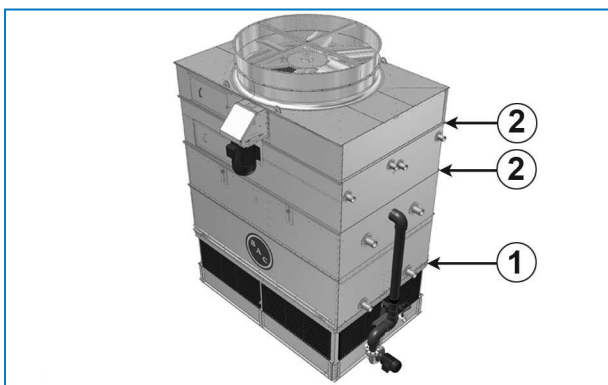
PCE SECTION ASSEMBLY

Sealing method



Sealing method for standard units

1. Joint method A – InterLok™ casing joint
2. Joint method B – Foam tape and self-tapping screws

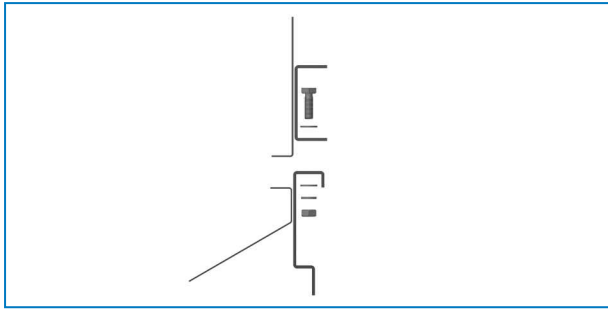


Sealing method for coil products with finned discharge coil

1. Joint method A – InterLok™ casing joint
2. Joint method B – Foam tape and self-tapping screws

JOINT METHOD A

1. No sealer tape is required on the middle InterLok™ casing joint.

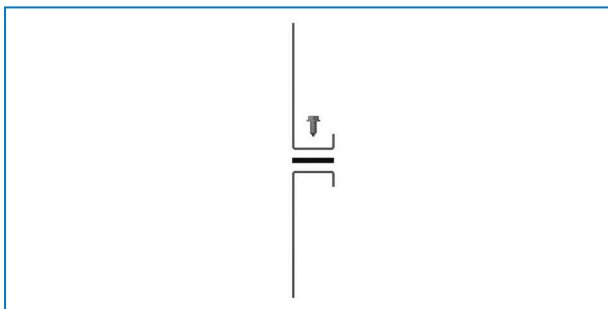


InterLok™ casing joint

2. Bolt section in place as illustrated in the figure "InterLok™ casing joint", using a 12 mm bolt and flat washer.

JOINT METHOD B

1. Apply a layer of 50x6 mm foam tape around the face of the flange over the centreline of the holes. Ends at the edges must slightly overlap.
2. Using the self-tapping screws, drive screws down through the upper section and into the lower section. Start next to lifting ear towards centre of unit. Continue to install the screws using the drift pin to align the screw holes until all holes are filled with screws

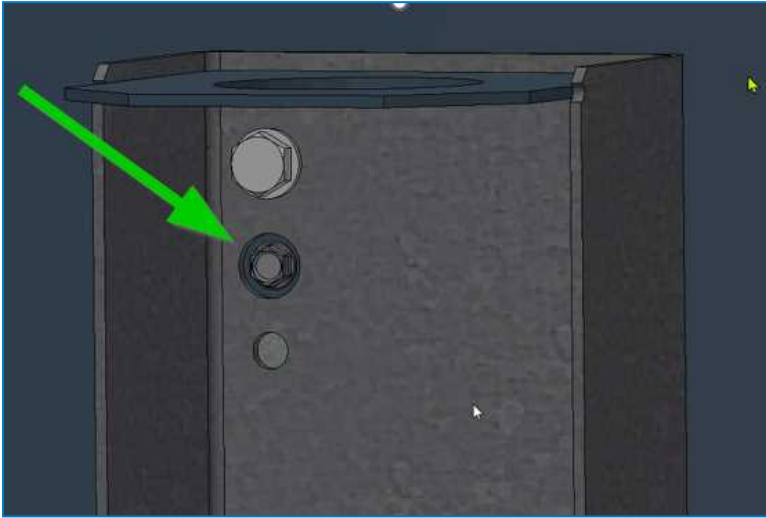


Sealer and self-tapping screws

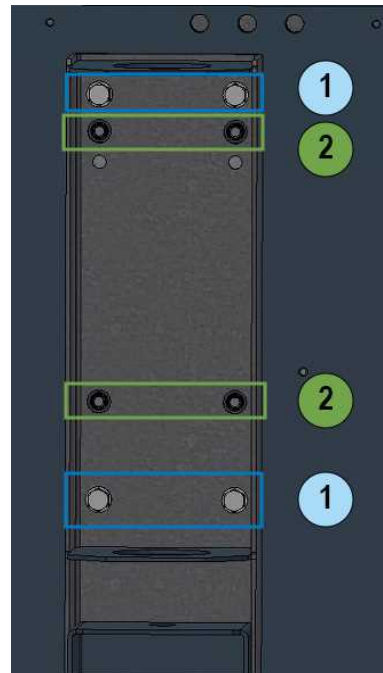
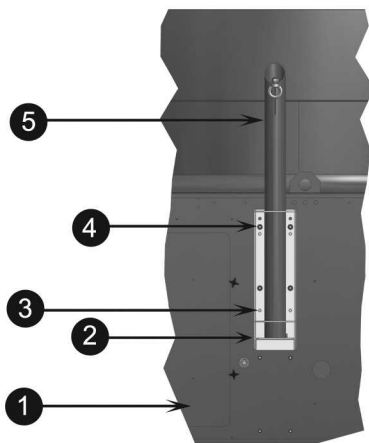
3. Secure the flexible hose that connects the upper and lower sections of the pump discharge pipe using the hose clamps provided.
4. Remove any wooden or plastic bracing from around the eliminators or upper section(s).

External motor support installation

1. Locate the mechanical support bolts on the access door side of the mechanical section.
2. Remove bolts but **under no circumstances remove tappers**. Removal of tappers will cause mechanical system to fall.
3. Align davit support with the holes in the mechanical system: the big holes in the support fall over the heads of the tappers which are not to be removed.



4. Reinstall bolts.



1: Bolts, 2: Tappers

Installation of motor removal davit support

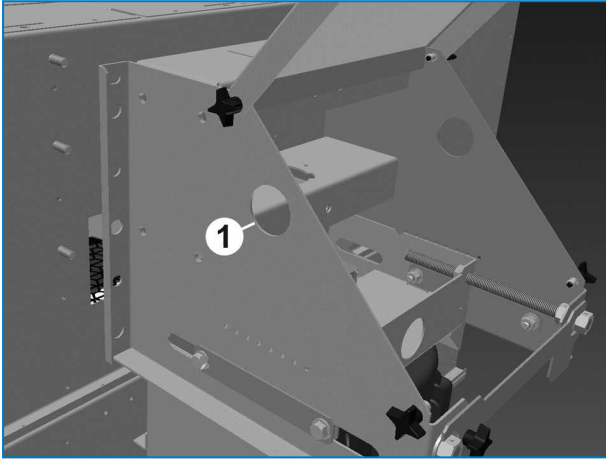
1. Access door
2. Motor davit support (shipped loose)
3. Bolt, nuts & washers. (Use these to install motor davit support)
4. Tappers (4 pieces) do not remove (the support has big holes which go over the taper heads.).
5. Motor davit (shipped loose)



External motor installation

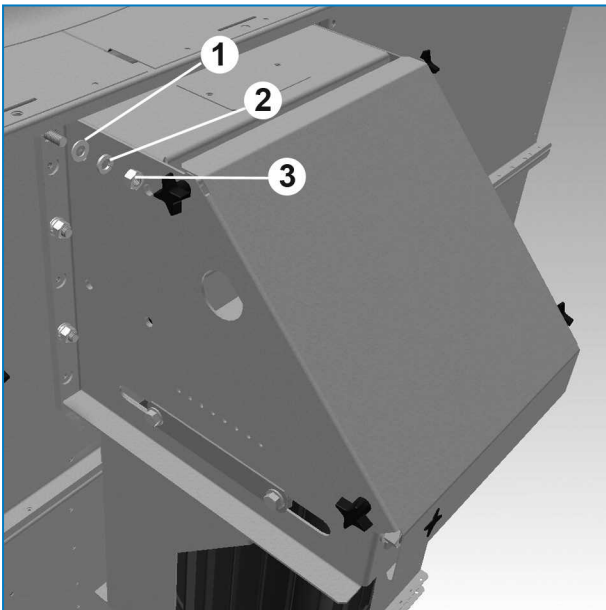
2,2 M AND 2,4 M WIDE UNITS

1. Attach lifting strap to the motor base eyelet and remove the motor and motor base assembly from the cold water basin shipping location. The motor assembly remains vertical to maintain proper alignment during installation.
2. Lift motor assembly into position next to the access door of the air handling module.
3. Attach the assembly to the unit using the six supplied studs and hardware.



External motor mounting – Step 1

1. Motorbase eyelet



External motor mounting – Step 2

1. 12 mm washer
2. 12 mm lock washer
3. 12 mm nut

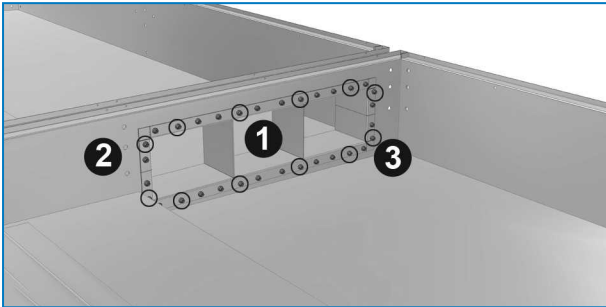
4. Install belts and check sheave alignment. Finally, tension the belts. For correct tensioning specifications and procedures, refer to the Operating and Maintenance Manual.

POSITIVE CLOSURE PLATE INSTALLATION

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 and gasket ships loose inside the basin.

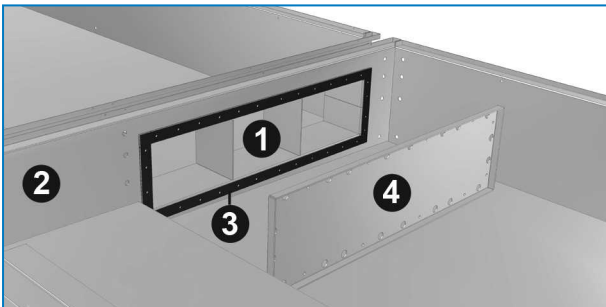
To install the positive closure plate follow the below instructions:

1. Remove tappers or bolts from the positions indicated in the below figure.



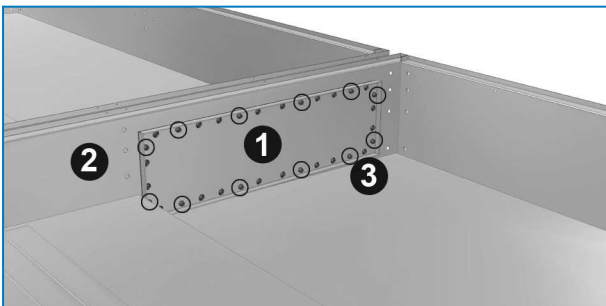
Remove indicated tappers/bolts before installation of positive closure plate.

1. Flume box
2. Basin wall Cell #1
3. Tappers/bolts to be removed for installation of positive closure plate.
2. Position the neoprene gasket and positive closure plate over the bolts of the flume box and fasten with the previously removed tappers/bolts.



Positive closure plate gasket

1. Flume box
2. Basin wall Cell #1
3. Gasket
4. Positive closure plate



Re-bolting of positive closure plate

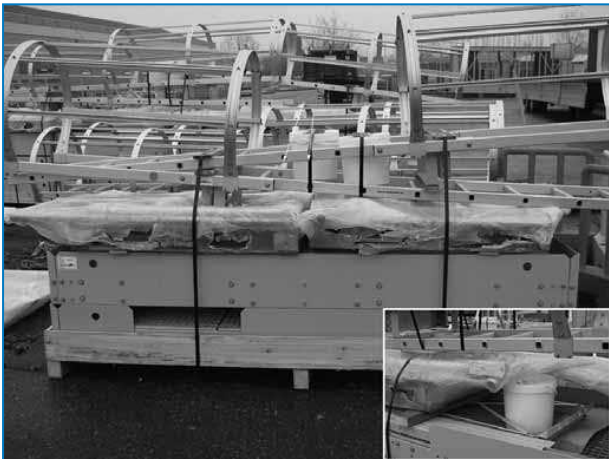
1. Positive closure plate
2. Basin wall Cell #1
3. Tappers/Bolts to be re-installed for fastening positive closure plate

4

PCE OPTIONAL ACCESSORIES ASSEMBLY

General

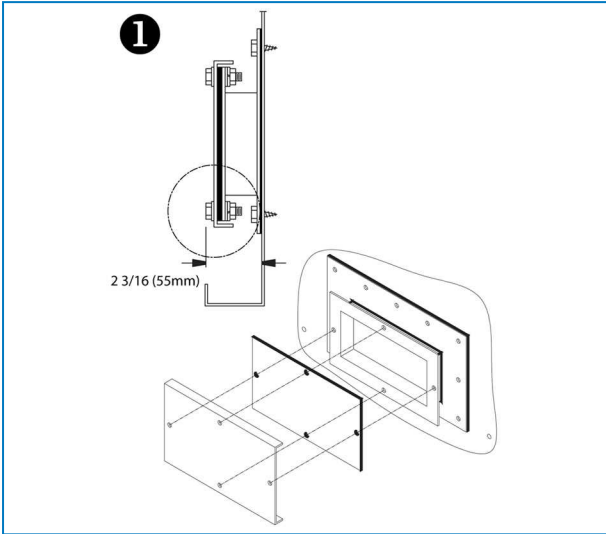
1. All required installation instructions for optional accessories are stored in the wooden no nail crate / plastic container which is placed in the lower section. See "Inspection Before Rigging" on page 1 - picture "Hardware Location".
2. The platform, ladder and railing is packed on a separate skid. The assembly hardware is packed in a plastic container and strapped to the platform, ladder or railing itself.



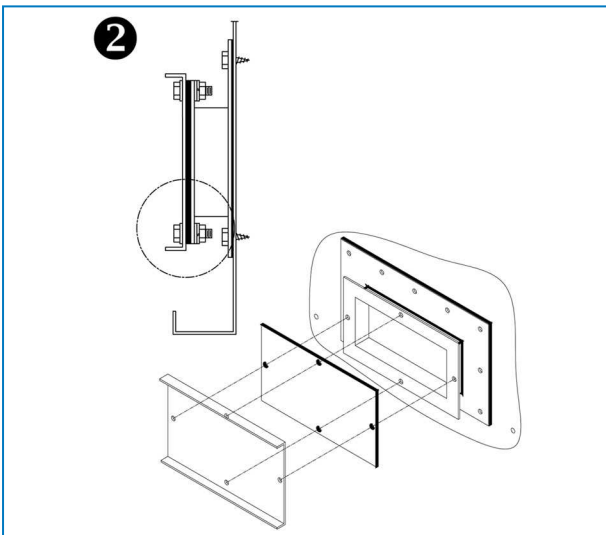
Hardware location for platform, ladder & railing

Clean out port

Due to transport width limits, the cover flanges of the clean out port are mounted with flanges towards the inside (1). On site, the cover can be placed with flanges to the outside for easy access to hardware (2).



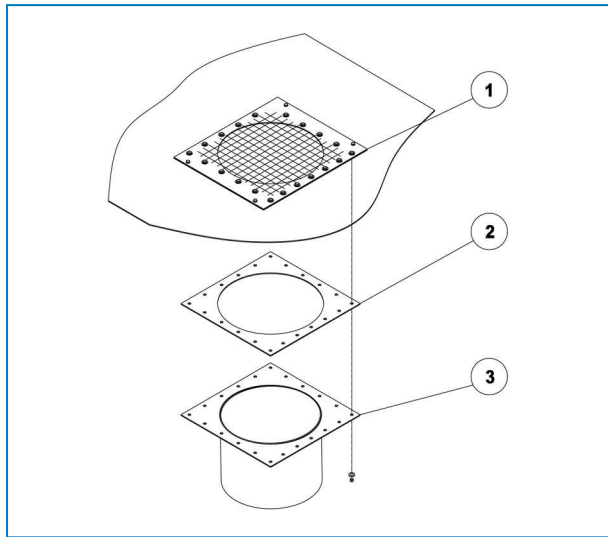
Clean out port cover mounted for transport



Final installation of clean out port cover

Optional bottom connection

To install the optional bottom connection, follow the instructions according to the following figure(s).



Installation of optional remote sump connection in bottom

1. Back-up plate with screen
2. Rubber gasket
3. Remote sump connection



PCE

INSPECTION PRIOR TO START-UP

General

Prior to start-up, the following services, which are described in detail in the Operating and Maintenance Manual (see table "Recommended maintenance and monitoring programme") must be performed.

Proper start-up procedures and scheduled periodic maintenance will prolong the life of the equipment and ensure trouble-free performance for which the unit is designed.

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- Water treatment solutions - equipment for controlling corrosion scaling and proliferation of bacteria.

For more details, contact your local BAC representative for further information and specific assistance at www.BACservice.eu

More information

REFERENCE LITERATURE

- Eurovent 9-5 (6) Recommended Code of Practice to keep your Cooling System efficient and safe. Eurovent/Cecomaf, 2002, 30p.
- Guide des Bonnes Pratiques, Legionella et Tours Aéroréfrigérantes. Ministères de l'Emploi et de la Solidarité, Ministère de l'Economie des Finances et de l'Industrie, Ministère de l'Environnement, Juin 2001, 54p.
- Voorkom Legionellose. Ministerie van de Vlaamse Gemeenschap. December 2002, 77p.
- Legionnaires' Disease. The Control of Legionella Bacteria in Water Systems. Health & Safety Commission. 2000, 62p.
- Hygienische Anforderungen an raumluftechnische Anlagen. VDI 6022.

INTERESTING WEBSITES

Baltimore Aircoil Company	www.BaltimoreAircoil.com
BAC Service website	www.BACservice.eu
Eurovent	www.eurovent-certification.com
European Working Group on Legionella Infections (EWGLI)	EWGLI
ASHRAE	www.ashrae.org
Uniclîma	www.uniclîma.fr
Association des Ingénieurs et techniciens en Climatique, Ventilation et Froid	www.aicvf.org
Health and Safety Executive	www.hse.gov.uk

ORIGINAL DOCUMENTATION



This manual is originally made in English. Translations are provided for your convenience. In the event of discrepancies, the English original text shall prevail over the translation.



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