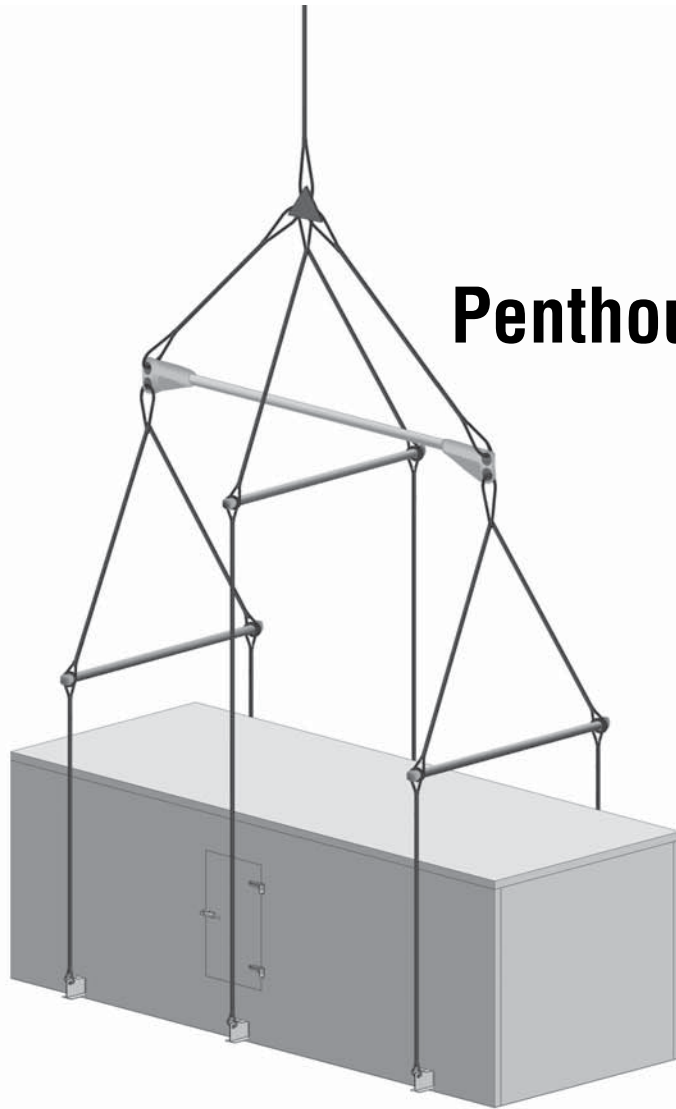




Phoenix
AIR SYSTEMS™

PE-Series

Penthouse Evaporator Systems Rigging and Unit Assembly Manual



PE-08	PE-72
PE-23	PE-93
PE-31	PE-103
PE-38	PE-113
PE-51	PE-123
PE-54	PE-125
PE-69	PE-150

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can result in death, injury or property damage. Read the installation, operation and service manual thoroughly before installing or servicing this equipment.

Installation must be done by a registered installer/contractor qualified in the installation and service of industrial refrigeration equipment.

NOT FOR RESIDENTIAL USE



Installer

Please take the time to read and understand these instructions prior to any installation. Installer must give a copy of this manual to the owner.

Owner

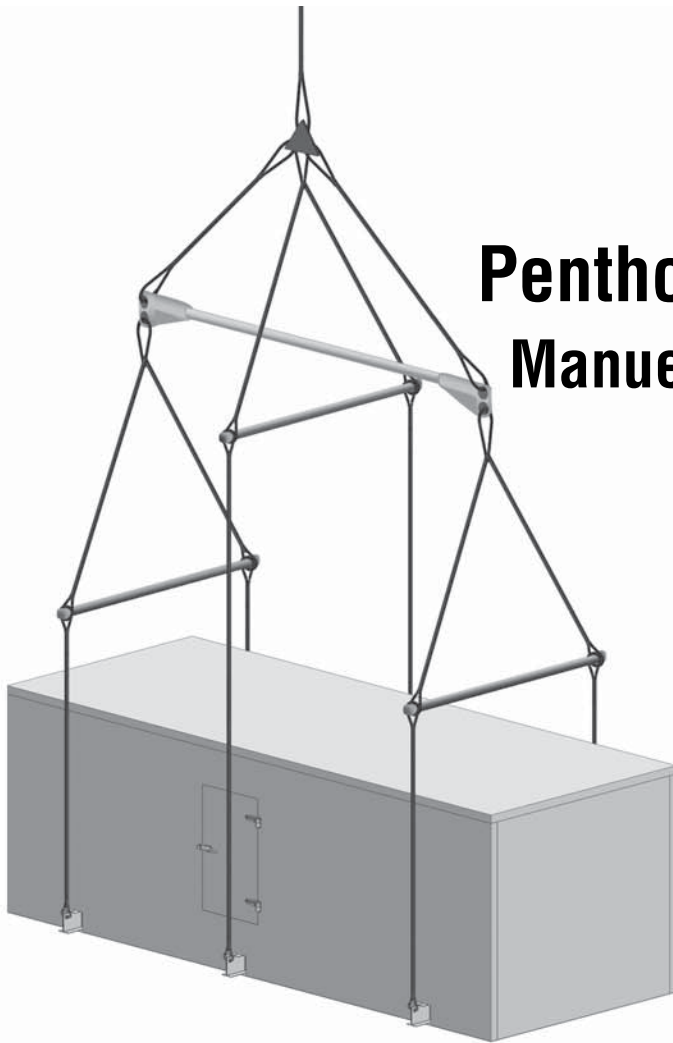
Keep this manual in a safe place in order to provide your service technician with necessary information.

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www.phoenixairsystems.com

PE-Series

Penthouse Evaporator Systems Manuel d'installation, d'opération, et d'entretien



PE-08	PE-72
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⚠ AVERTISSEMENT

L'installation, le réglage, la modification, la réparation ou la maintenance inadapté peut entraîner la mort, des blessures ou des dommages matériels. Lire attentivement le manuel d'installation, d'utilisation et d'entretien avant d'installer ou de réparer cet équipement.

Installation must be done by a registered installer/contractor qualified in the installation and service of industrial refrigeration equipment.

Installateur

Prenez le temps de lire et comprendre ces instructions avant toute installation.

L'installateur doit remettre au propriétaire un exemplaire de ce manuel.

Propriétaire

Gardez ce manuel dans un endroit sûr pour fournir des informations au réparateur en cas de besoin.

Conçus pour les applications non-résidentielles



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SECTION 1: RECEIVING AND RIGGING

1.1 Receiving

Depending on equipment size, it is shipped as one assembly or in multiple sections. Equipment was inspected and operated prior to shipment.

1.2 Inspection

Check all items against bill of lading to ensure all cartons and crates have been delivered. Carefully check all components for damage. Immediately note any visible shortage or damage on bill of lading and submit claim to carrier. If additional damage is found after further inspection, immediately submit another claim to carrier. These steps must be taken to preserve your right to reimbursement from carrier.

Any small accessories which do not come attached to equipment (i.e. filters, remote panel or disconnect) will be found inside equipment. Larger accessories (i.e. diffusers, hoods) may either ship with equipment or separately on another truck. Check bill of lading for information.

1.2.1 Inspection Checklist

Check items below for damage. If further damage is found see *Page 1, Section 1.2*.

1. Inspect all access doors to confirm latches and hinges are not damaged.
2. Check all coil connections to confirm they are straight and undamaged.
3. Inspect coils for damage to fin surface or coil connections.
4. Refrigerant coils on evaporators are shipped from factory with a low pressure nitrogen charge. Quickly open valve on coil headers to hear or feel nitrogen escaping. Close valve after verifying coil charge. Maintain charge until just before connecting refrigerant piping to equipment.

If coil does not appear to be charged, it may have been damaged during shipment. Pressure test coil with dry nitrogen gas to ensure coil does not have a leak. Before installation, notify factory of coils that have lost factory nitrogen charge.

5. Check control enclosures, electrical enclosures and other items attached to equipment exterior and confirm they are not damaged.
6. Inspect interior of each section for any internal damage as soon as possible after delivery.

7. Check internally mounted controls (if ordered); locate all sensors and actuators and inspect for damage.
8. Check to make sure lifting lugs are intact, undamaged and secured to equipment.

1.3 Resolving Shipping Damage

PE-Series equipment ship FOB factory. If damage has occurred to equipment sections during shipment, follow instructions below:

1. Make specific notation describing damage on freight bill.
2. Take pictures of damage.
3. Immediately report all claims of shipping damage to delivering carrier.
4. Keep damaged material in same condition as it was received. It is receiver's responsibility to provide reasonable evidence concealed damage was not incurred after delivery.
5. Notify factory of damage and arrange for repair. Do not attempt to repair equipment without consulting Phoenix Air Systems or a PHOENIX AIR SYSTEMS™ independent distributor. Phoenix Air Systems is not responsible for shipping damage.

1.4 Storage Considerations

If equipment must be temporarily stored or placed on the ground (i.e. job site is not ready for installation of equipment), it should be set on 4" x 4" (10 cm x 10 cm) pieces of timber on the ground in a safe area to protect from damage. Cover equipment to protect from environment.

Keep equipment in original shipping arrangement for protection and ease of handling. Place all boxes shipped inside equipment in a dry location until required for installation.

If equipment is shipped in sections, plywood shipping end covers should be kept in place. Remove plywood end covers prior to assembling equipment.

Warranty does not cover damage to equipment or components due to negligence during storage.

1.4.1 Long Term Storage

For longer periods of storage, allow enough clearance around equipment to perform periodic inspection and maintenance.

Check inside all access doors for evidence of animal or insect presence or other foreign matter. Clean or remove as required.

Loosen belt tension on drive belts. Every two weeks, rotate fan and motor shaft thirty revolutions by hand. Check for free rotation. Every six months, check fan shaft bearing and grease lines.

Check motor lubrication; remove and clean grease plugs and check for presence of moisture in grease. If moisture is present, remove motor and send it to an authorized repair shop for bearing inspection/replacement. If moisture is not present, refer to motor manufacturer's lubrication recommendation for proper lubrication.

1.5 Safety Labels and Their Placement

Product safety signs or labels should be replaced by product user when they are no longer legible. Avoid placing labels on areas with extreme heat, cold, corrosive chemicals or other elements. To order additional labels, please contact Phoenix Air Systems or your PHOENIX AIR SYSTEMS™ independent distributor.

1.6 California Proposition 65

In accordance with California Proposition 65 requirements, a warning label must be placed in a highly visible location on equipment (i.e., near equipment's serial plate). See *Page 2, Table 1* for label part numbers.

1.7 Product Labels

Table 1: Product Labels

Part Number	Description
PA13592730	Serial plate, main control cabinet
PA13592731	Serial plate, VFD cabinet
20930011	Logo label 24" x 8"
20930012	Logo label 10" x 3.3"
PA20930016	Drain must be trapped
PA20930025	Filter access
PA20930033	Blower, motor and drives' access
91010100	Manual location (for shipping only)
91070001	Shock hazard
91070002	Severe injury hazard
91070005	Falling hazard
91070007	Crush hazard
91070016	Prop 65
91070048	Severe injury hazard
91070049	Cooling coil explosion hazard
91070050	Asphyxiation hazard

SECTION 2: PREPARING INSTALLATION SITE**2.1 Installation Site Considerations**

When preparing equipment site, consider the following:

1. Ensure that site can support total weight of equipment. See *Page 3, Section 2.2*.
2. Allow sufficient space for service access requirements. Equipment has one or more access doors on one or both sides of equipment. A minimum of one door width must be available at each door location for maintenance and servicing. See submittal for details. A minimum of 48" (122 cm) clearance should also be given to open door of control panel mounted on equipment.
3. Equipment may require railings or other safety devices for personnel safety. Consult OSHA and local code requirements.
4. Confirm foundation of curb is large enough to include equipment dimension. Refer to submittals for specific dimensions.
5. Provide adequate height for condensate drain requirements. Insufficient height may inhibit condensate drainage and result in flooding equipment.
6. Provide adequate lighting for maintenance personnel to access.
7. Provide permanent power outlets in close proximity of equipment for installation and maintenance.
8. Ensure field piping and ductwork are strongly supported and properly anchored. Do not use field piping or ductwork to support equipment. Do not use equipment to support field piping or ductwork. Wind loading, temperature variation, etc. must be considered to allow for movement between the system, adjoining building, ducting and field piping. A qualified system design

engineer should provide final field piping and ducting plans and specifications.

2.2 Equipment Support

PE-Series equipment is installed on a roof curb. The site must be able to support entire weight of equipment, support structures and accessories. See submittal drawings for equipment and accessory weights.

- Install roof curb before hoisting equipment to roof.
- Complete all electrical, ductwork and piping connections only after equipment is mounted.
- Ensure support structure is capable of supporting total system operating weight plus a significant safety margin as determined by a qualified structural engineer. Support footing and anchoring requirements will vary with live loads, seismic and wind loading.

IMPORTANT: For proper operation, equipment must be installed level (zero tolerance) in both horizontal axes. Failure to level equipment properly may result in moisture management problems, such as standing water inside equipment.

Standing water and wet surfaces inside equipment can result in microbial growth that may cause decreased final filter life, unpleasant odors and possible product quality problems.

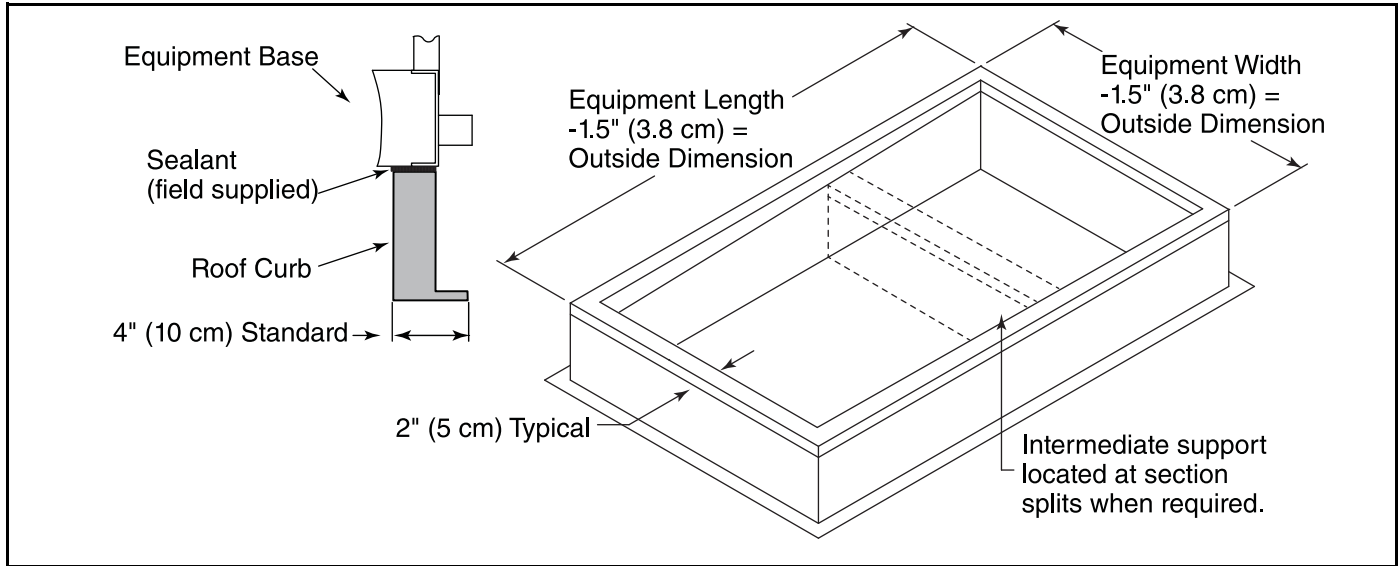
2.2.1 Roof Curb Support

Phoenix Air Systems can provide a full perimeter roof curb specifically designed for use with some smaller PE-Series equipment. The curb must be flashed into roofing and follow standard roofing practices to help ensure an air, vapor and watertight seal. There should also be a gasket/sealant placed between roof curb and equipment.

IMPORTANT

Uninsulated roof curbs cannot be used. Roof curb height varies. See submittal drawings. Consult factory for more information.

FIGURE 1: Roof Curb Support



SECTION 3: LIFTING EQUIPMENT**⚠ WARNING****Crush Hazard**

Use proper lifting equipment and practices.

Failure to follow these instructions can result in death, injury or property damage.

⚠ CAUTION

Only use crane to move air handler.

Do not push or pull air handler on ground.

Failure to follow these instructions can result in equipment damage.

⚠ WARNING**Falling Hazard**

Use proper safety equipment and practices to avoid falling.

Failure to follow these instructions can result in death, injury or property damage.

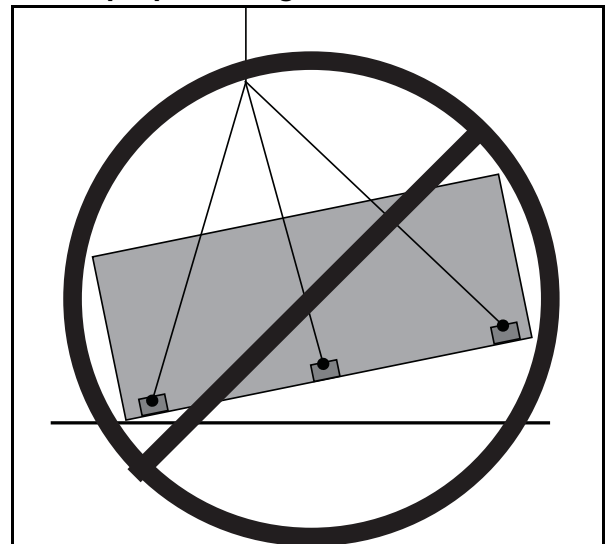
Depending on equipment size, it is shipped as one assembly or in multiple sections. If equipment is shipped in multiple sections, lift each piece separately.

3.1 Preparing to Lift Equipment:

Prior to lifting equipment, perform the following steps.

1. Remove all packaging, banding or blockers attached to equipment and ensure air handler is no longer bound to truck.
2. Remove all accessories or packages that were shipped with equipment, inside equipment or inside control enclosure.

3. Verify lifting lugs are intact, undamaged and secured to equipment.
4. Only use a crane to move or reposition air handler. Do not push or pull equipment on the ground since this could damage equipment's integrity and structure.
5. Prepare installation or storage location to accept equipment (i.e. roof curb, 4" x 4" (10 cm x 10 cm) timbers for storage placement). See *Page 3, Section 2*.
6. Verify lifting equipment can handle equipment's weight and required reach. Refer to mechanical submittal drawing.
7. Estimate center of gravity and test lift equipment to determine balance and stability. Equipment may be unbalanced or top heavy depending on its accessories, so it is imperative to lift equipment properly. Due to placement of internal components, equipment weight may be unevenly distributed with more weight at coil and blower sections.
8. Equipment must be kept level and upright during lift to prevent tipping, twisting or falling. Do not move or lift equipment tilted, upside down or on its side.

FIGURE 2: Improper Lifting

9. Before lifting equipment, make sure there are no loose items on equipment.
10. Piping, electrical and control enclosures and other items are attached to equipment exterior. Check these items to confirm they do not touch lifting cables and chains during equipment lifting.
11. Never lift equipment in windy conditions or above personnel.

3.2 Lifting Equipment

Lift equipment into place installing appropriate hardware (supplied by others) into all lifting lugs. Some equipment has more than four lifting lugs. Use all lifting lugs to lift equipment. Use spreader bars to ensure lifting cables or chains clear sides of equipment and any protruding items such as coil connections, control panels and door handles. See *Page 6, Figure 3*.

If equipment is shipped in multiple sections, lift each section separately. Assemble, once all sections are securely placed on platform or curb.

Rigging examples are shown for illustration only. Equipment lifting/rigging must be done by a contractor qualified in crane and rigging plan design and procedures. Spreader bars must extend full width of equipment.

FIGURE 3: Lifting Equipment (4 Lugs)

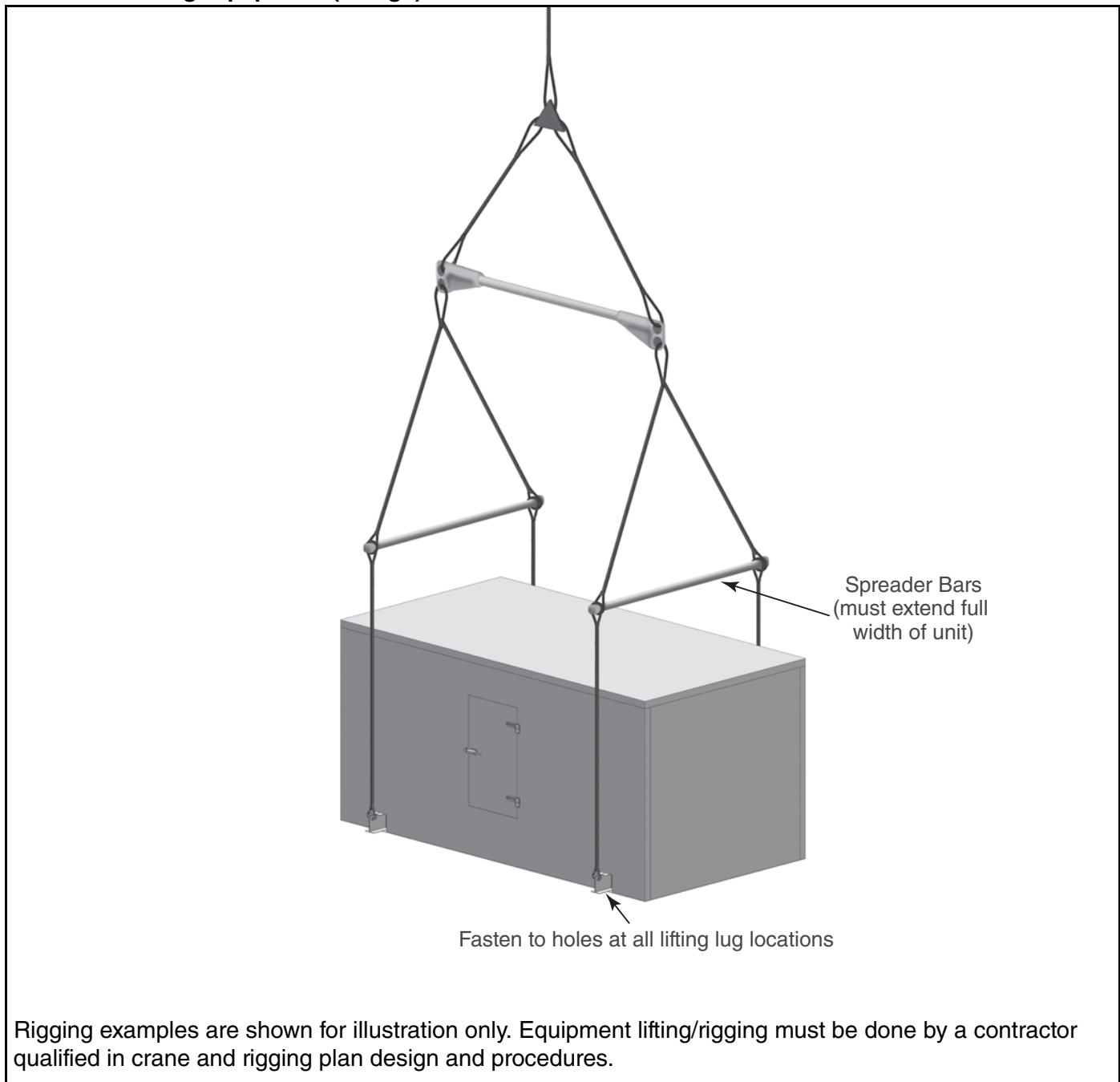
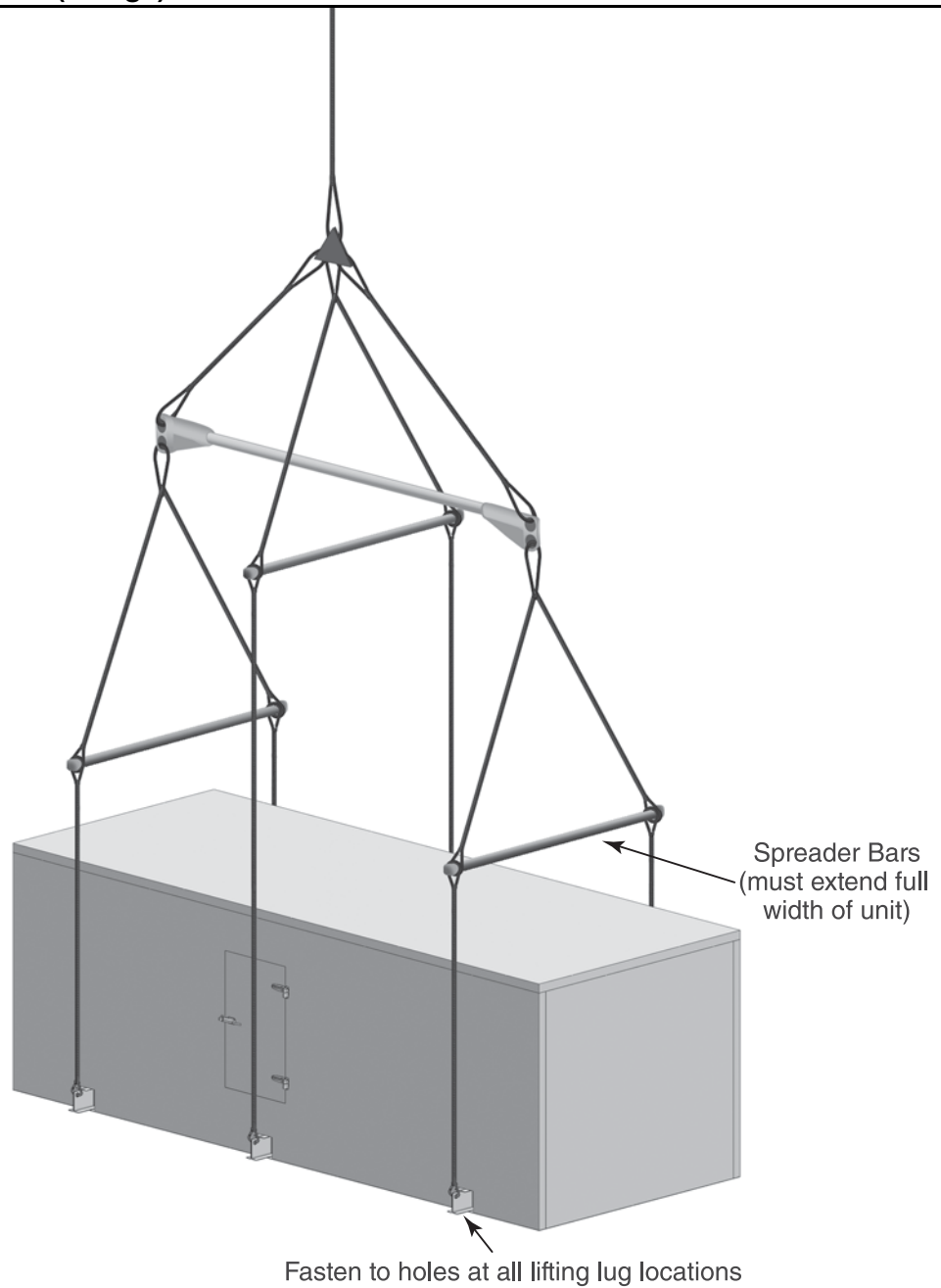
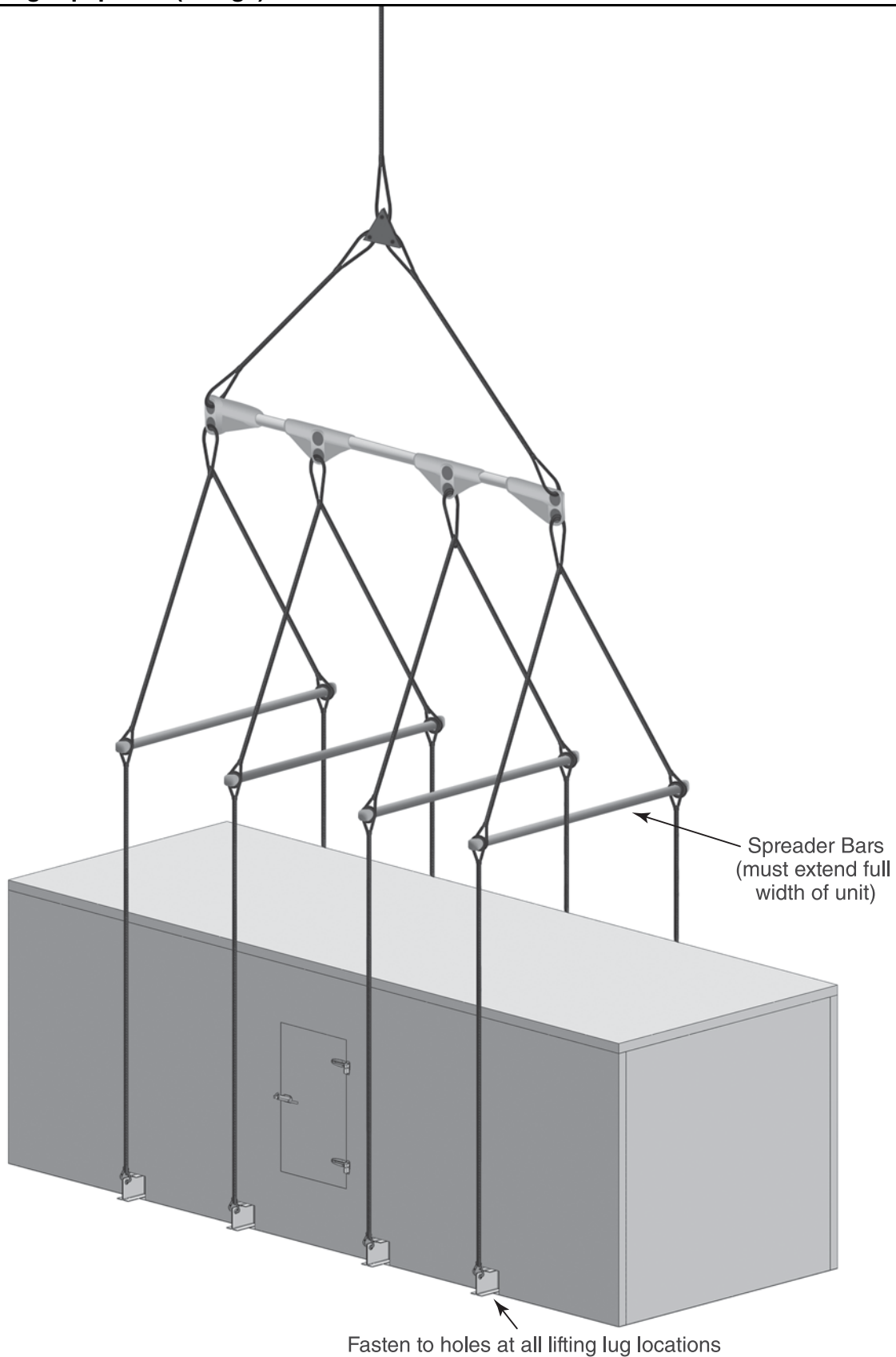


FIGURE 4: Lifting Equipment (6 Lugs)

Rigging examples are shown for illustration only. Equipment lifting/rigging must be done by a contractor qualified in crane and rigging plan design and procedures.

FIGURE 5: Lifting Equipment (8 Lugs)

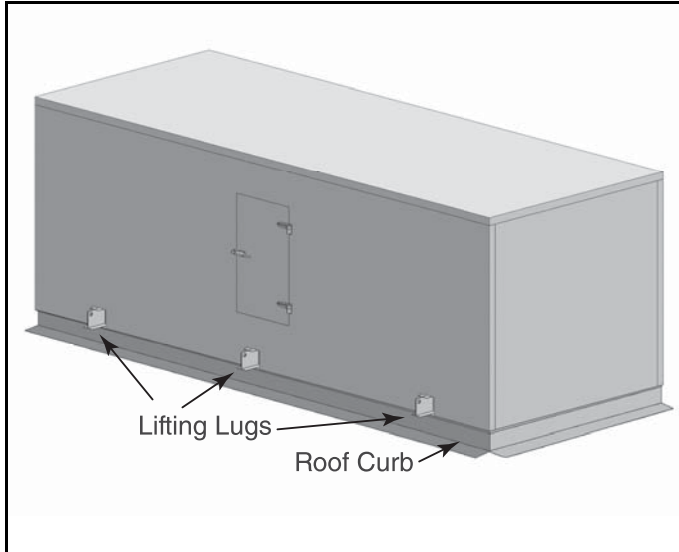


Rigging examples are shown for illustration only. Equipment lifting/rigging must be done by a contractor qualified in crane and rigging plan design and procedures.

SECTION 4: PLACING EQUIPMENT

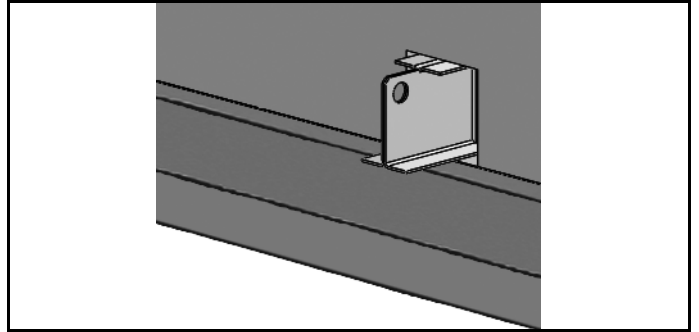
Before placing equipment, ensure installation site is properly prepared to accept equipment. See *Page 3, Section 2*. After confirming gasket/sealant is applied to roof curb, place equipment on curb.

FIGURE 6: Lifting Lugs

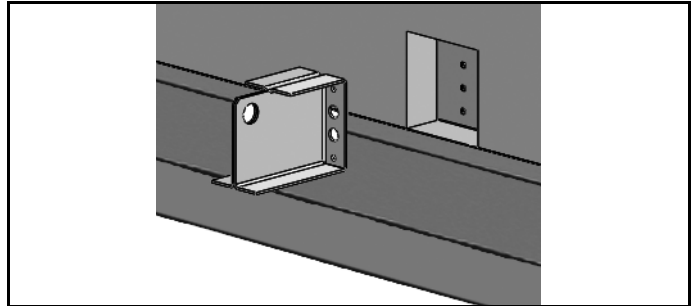


4.1 Lifting Lug Removal

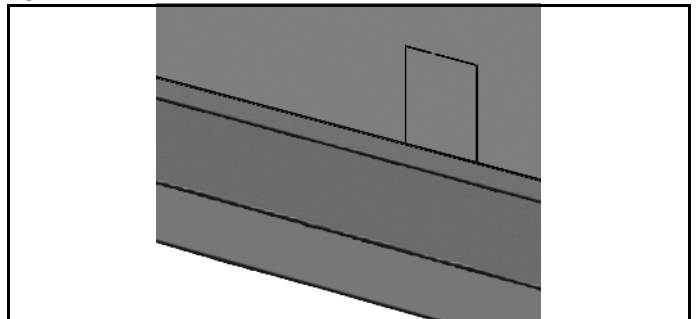
Step 4.1.1 Equipment is shipped with lifting lugs attached. See *Page 9, Figure 6*



Step 4.1.2 After equipment placement, remove and discard lifting lugs. Locate insulated wall cutouts, which are stored inside equipment during shipment.



Step 4.1.3 Caulk insulated wall cutouts securely in place. Completely caulk all seams to prevent condensation issues. All caulking must be water and air tight.



Fasten or weld equipment to roof curb. If welding, exercise extreme caution to prevent damage to equipment and curb insulation. Re-coat all welds to prevent deterioration or rust.

