Westell® Boxer® BXB19-A/AE Outdoor Battery Boxes

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1. GENERAL

1.1 Document Purpose

This document provides general, installation, and specification information for the Westell® Boxer® BXB19-A and BXB19-AE Outdoor Battery Boxes, one of which is shown in Figure 1. The intended audience for this document is Network engineering, operations, and installation personnel. See Table 2 for ordering information on these battery boxes and other orderable options for Boxer cabinets. For information on any Westell Boxer outdoor *equipment cabinet* typically installed with and above this battery box (the cabinet accepts equipment designed for 19" rack-mounting inside it), see Table 3 and the documentation shipped with the Boxer cabinet.

- NOTE -
Hereafter, the Boxer BXB19-A or BXB19-AE Battery Box may be referred to as the "battery box" and the Boxer cabinet installed above the battery box may be referred to as the "cabinet."

1.2 Document Status

Whenever this practice is updated, the reason will be stated here. This practice is updated to include the AE model, to delete the B model, to update Figure 14 and Table 2, and to add Figure 15 and Table 3.

1.3 Product Purpose and Description

The two-compartment Boxer *battery box* is designed to be mounted with and under a Boxer *cabinet*. The battery box provides an enclosed, weather-resistant, vented space for an optional battery back-up system for the Boxer cabinet. One of the two compartments of the battery box is an enclosed aesthetically-concealed area for cable access, storage, and cable ingress and egress. The open bottom and top ends of this cable compartment allows generous and ample cable and conduit access and routing through the compartment and up into the Boxer cabinet mounted above it. The other compartment is for customer-supplied batteries. The battery compartment is vented. Both compartments have a large, grounded, door panel which can be locked and unlocked with a 216 tool or can wrench. The battery compartment also contains a hasp on the front panel for an optional padlock. A kit shipped with the battery box is located in the battery compartment and contains the parts listed near the end of Paragraph 1.5.

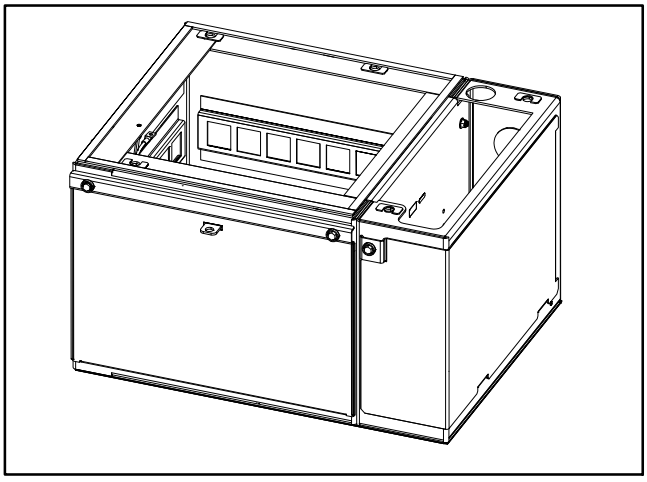


Figure 1. Isometric View of Boxer Battery Box

1.4 Product Mounting

The Boxer *battery box* is mounted with and attached to the bottom of a Boxer *cabinet*. The conjoined Boxer battery box and the Boxer cabinet can be installed outdoors, above ground, on a pad, a wall, an H-frame, a round pole (from 8" to 20" in diameter), or on a square pedestal or post (minimum 8" wide). All mounting hardware, structures, and surfaces must be capable of supporting the weight of *both* Boxer cabinets *plus* the weight of any equipment *and* batteries placed in them. The following are optional mounting kits for Boxer (also see Table 2).

A90-BXA-WH01: Wall and H-Frame mounting

A90-BXA-PM03: Pole mount kit for the conjoined cabinets

A90-BXA-19PT1: Pad mount kit

1.5 Product Features

The following are features and capabilities of the battery box.

- NEMA 3R
- Weather-resistant battery box
- Pad, H-frame, wall, and pole mounting with optional kits
- Five top-surface holes facilitate attachment to the Boxer cabinet mounted above it
- Security and access via 216 tool or can wrench
- Optional battery heater pad

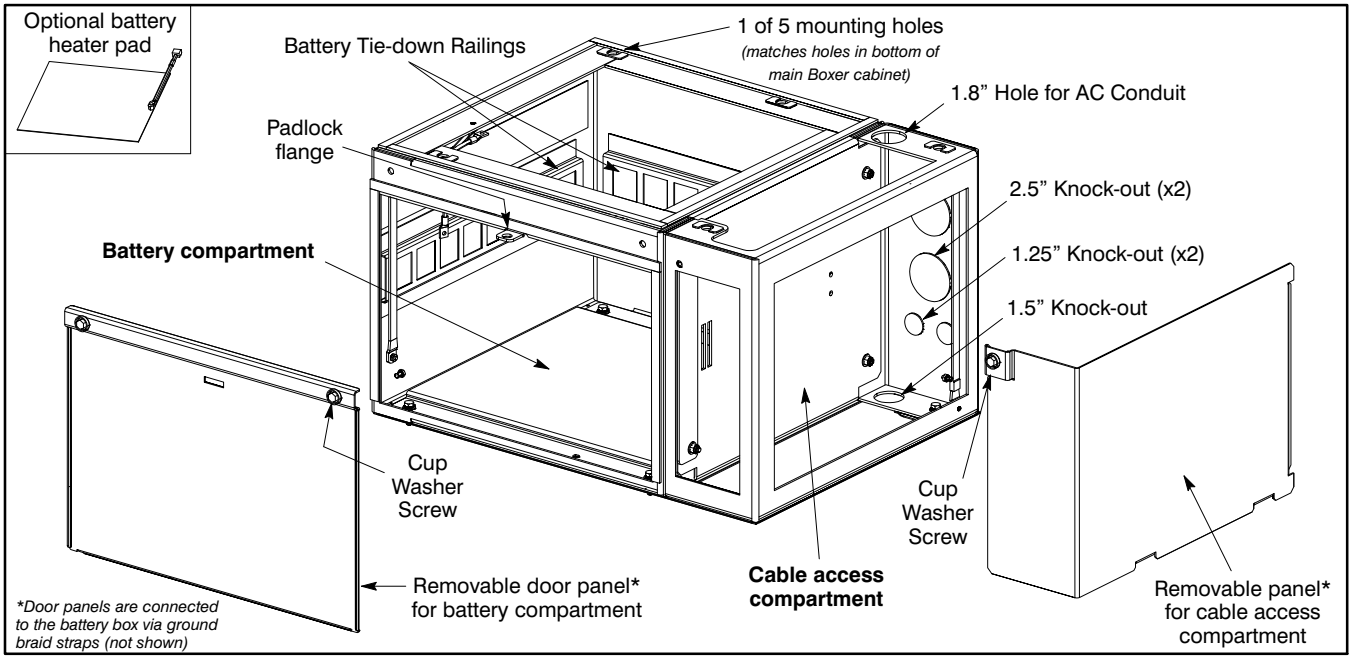


Figure 2. Isometric Open View of Boxer Battery Box

- Battery power cable
  - Includes cable for heater pad
  - BXB19-A includes cable and Lineage temperature probe
  - BXB19-AE includes cable to support Eltek temperature probe (temperature probe is not included)
- Approximate size = 14" (H) x 24" (W) x 18.25" (D)
- Weight = less than 23 pounds

Battery Compartment

- Louvered and screened side wall vents
- Lockable yet detachable access panel
- Braided ground cable (bonds panel to battery box)
- Two battery-strap tie-down railings
- Kit of parts, which contains the following items:
  - Multi-connector battery cable assembly
  - 2 bond straps/braids
  - One strengthening or stiffener L-bracket (mounts inside Boxer cabinet)
  - Battery spacer block
  - One battery tie-down strap
  - Insulator pad, for use with concrete pad mounting
  - Bag of hardware (includes screws, bolts, washers, and lock nut(s) to attach the battery box to the cabinet, and pad mount bolts)

Cable Access Compartment

- Lockable yet detachable access panel
- Open top and bottom surfaces for generous cable/conduit access
- Rear-wall cable-entry knock-outs (2 sizes)
- Braided ground cable (bonds panel to battery box)

2. FEATURES

This section describes the exterior and interior features of the Westell® Boxer® battery box in more detail. Refer to Figure 2 as needed while reading this section.

2.1 Construction and Materials

The Boxer battery box is designed to be weather-resistant for above-ground applications. As such, the cabinet withstands climatic conditions such as rain, snow, sleet, high winds, ice and sand storms. To help meet these conditions, the exterior box material is aluminum with powder-coated paint.

2.2 Battery Compartment

When viewed from the front, the battery compartment is on the left side of the battery box. This large compartment is protected by a padlockable door panel, and contains louvered and screened side-wall vents for air circulation. On the inside walls of the compartment are tie-down railings to secure the batteries. Provided is a battery spacer block (shown in Figure 4) which can be placed behind the batteries to help insure a snug fit when smaller batteries are used. The open top surface allows ample access to any cable access holes in the cabinet installed above the battery box.

2.2.1 Door Panel

The battery compartment is protected by a full-size door panel which provides ample technician and equipment access to the interior of the compartment. For security, at the top of the panel are two cup-washer screws, which unlock with a 216 tool or can wrench. A padlock hasp offers additional security. When closed and locked in position, a gasket on the inside perimeter of the door panel abuts or makes contact with the outer perimeter of the compartment's opening. When the hex cup-washer screws (door lock) are tightened, the door panel and gasket provide a seal to protect the batteries installed inside the compartment.

2.2.2 Battery Tie-down Railings

On both the left and rear inside walls of the battery compartment is a slotted, full-width, ½" deep tie-down railing used to secure batteries installed in the compartment. The provided tie-down strap can be anchored to these railings then wrapped around the batteries and tightened, to hold batteries in place.

2.2.3 Battery Spacer Block

The battery box is provided with a long, rectangular, sturdy, battery spacer block that is designed to be used between the back wall of the compartment and the rear of the installed batteries, to help insure a snug and square fit of smaller batteries placed in the compartment.

- COMPARTMENT DIVIDER WALL NOTE -
Between the left-side Battery Compartment and the right-side Cable-Access Compartment is a secure but detachable divider wall, to facilitate battery or cable installation, if needed.

2.3 Cable-Access Compartment

When viewed from the front, the cable-access compartment is on the right side of the Boxer battery box.

2.3.1 Removable Access Panel

The cable-access compartment is secured and opened via a large, vented, removable, L-shaped, locking access panel. This panel, shown in Figure 2, is opened and locked using a 216 tool or can wrench at the exterior cup-washer screw.

2.3.2 Rear Wall Knock-outs

As shown in Figure 2 and Figure 4, four knock-outs are provided in the rear wall of the cable access compartment. The two upper knock-outs are 2.5" in diameter, and the two lower ones are 1.25" in diameter.

2.3.3 AC Conduit Hole

As shown in Figure 3 and Figure 4, a 1.8" diameter hole is provided in the top flange and a 1.5" hole in the bottom flange of the cable compartment, for convenient attachment of AC conduit or fittings. Remove knock-outs prior to mounting the battery box, but only when it is absolutely necessary.

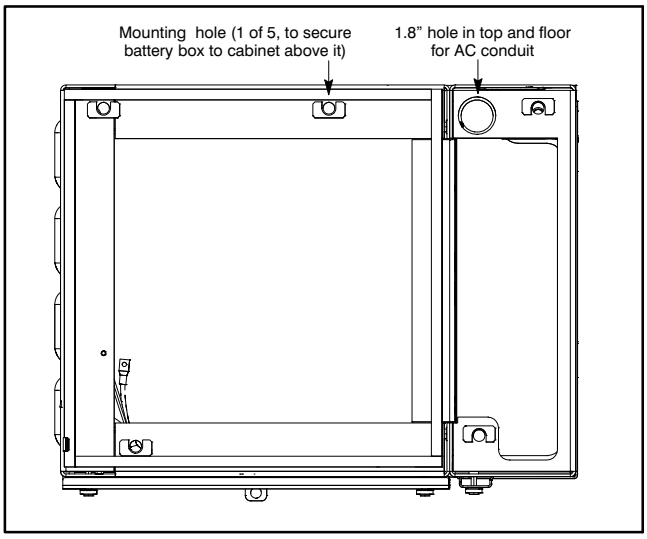


Figure 3. Top View of Battery Box

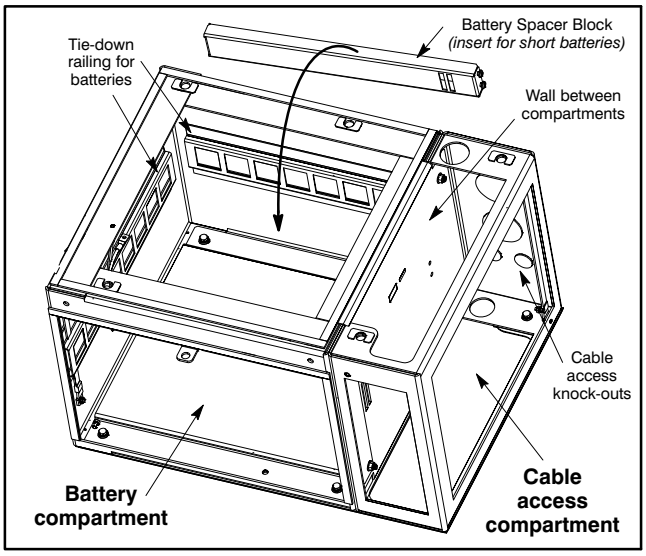


Figure 4. Top Isometric View of Battery Box

- KNOCK-OUT REMOVAL NOTE -
Always remove knock-outs (in both the battery box and the Boxer cabinet mounted above the battery box) where holes are desired before mounting the battery box or cabinet, regardless of the type of knock-out and regardless of the order of the mounting steps. All knock-outs should be knocked out from the inside of the cabinet, except for the small 0.575" knock-outs (which should be knocked out from the outside of the cabinet) or the concentric knock-outs.

2.4 Mounting Holes

Several types of mounting holes are provided in the battery box, to facilitate a secure and stable mounting. Further mounting and installation details are provided in Part 3.

2.4.1 Top Mounting Holes

Five small mounting holes are provided in the top surface flanges of the battery box (see Figure 3). These holes are designed to align with matching holes in the bottom of the main Boxer cabinet typically mounted above the battery box.

2.4.2 Bottom Mounting Holes

Small mounting holes are provided in the bottom flanges of the battery box, for use with anchor bolts when mounting on a concrete pad.

3. INSTALLATION

Use and follow local codes and company practices to install the Westell® Boxer® battery box. If none exist, use the instructions contained herein. The installation process consists of:

- inspecting the unit for damages that may have incurred during shipping,
- following proper safety precautions,
- reviewing pre-mounting considerations, such as selecting the mounting type and location, and preparing the mounting site,
- gathering all tools, materials, and equipment,
- mounting the battery box,
- mounting the main cabinet above the battery box,
- installing all cable conduit or ductwork
- making all ground, power, and signalling connections,
- mounting and wiring batteries inside the cabinet,
- testing the backup battery system,
- performing cabinet housekeeping, and closing and locking the cabinet.

The following paragraphs provide detailed instructions for performing these procedures.

3.1 Inspecting the Equipment

- INSPECTION NOTE -

Visually inspect the product for damages prior to installation. If damaged in transit, immediately report the damage to the transportation company and to Westell.

3.2 Following Proper Safety Precautions

The battery box should be installed only by authorized, trained personnel. Always exercise caution and follow all safety precautions.

- PRECAUTIONARY STATEMENT -

Never install telephone wiring during a lightning storm.

Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.

Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.

Use caution when installing or modifying telephone lines.

Important Safety Instructions (Please Save)

When using your telephone/telecommunications equipment, follow basic safety instructions to reduce the risk of fire, electric shock, and injury to person(s), including the following:

A. Read and understand all instructions.

B. Follow all warnings and instructions marked on product.

C. Do not place this product on an unstable cart, stand or table: the product may fall, causing serious damage to product.

D. Slots and openings in the cabinet are provided for ventilation. To protect it from overheating, these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.

E. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in the risk of fire or electrical shock. Never spill liquids of any kind on the product.

F. This product should be operated only from the type of power source indicated on the marking label.

3.3 Selecting and Preparing the Mounting Type and Site *(Pre-Mounting Considerations)*

3.3.1 The Boxer battery box is mounted below a Boxer cabinet (either indoors or outdoors) on an H-frame, a wall, a pole or large post, or on a concrete pad. The mounting surface, the support framework, as well as the hardware used to mount the enclosure all must be capable of supporting the weight of the both the battery box and cabinet above it as well as the weight of any equipment plus batteries mounted in them. A one-man lift and mounting is possible, however, always mount the cabinet per company practice. *Run all cables to the mounting location, perform any trenching, trench cable placements, and backfilling, and install any concrete pads prior to mounting the cabinet.*

3.3.2 Mount Boxer in a location with an adequate earth ground and power access, with unobstructed cabinet access, and which insures the best lighting, ventilation, heat dissipation, and equipment access. Verify sufficient space exists to remove the door panels, to access and mount the cabinet, and to adequately install, access, prepare, and dress all cables and batteries. Adequate horizontal and vertical space should be be left between any multiple installations to allow for cabinet opening, panel removal, equipment access, and cable routings and preparations. Follow company practice for the proper distance from the cable entry point or from upstream or downstream equipment.

3.4 Gathering all Tools and Equipment

The following tools and supplies (not provided) are required to mount the Boxer battery box.

Panel Opening/Locking Tools

- ☐ 7/16” can wrench or 216 tool
- ☐ Padlock (optional)

Cabinet Mounting Tools, Equipment, and Hardware

- ☐ Tape measure
- ☐ Marking utensil (to mark mounting hole locations)
- ☐ Level (optional)
- ☐ Power or hand drill with assorted bits
- ☐ Socket driver and sockets, or wrenches
- ☐ Mounting hardware
- ☐ Optional wall/H-Frame mount kit (A90-BXA-WH01)
- ☐ Optional pole-mount kits (A90-BXA-PM03 or A90-BXA-PM02)
- ☐ Optional pad mount template (A90-BXA-19PT1)
- ☐ Concrete pad materials and equipment (optional)
- ☐ Outdoor site preparation tools
- ☐ Safety gloves and glasses (optional)
- ☐ Power lift equipment (optional)
- ☐ Appropriate grounding materials and equipment

Cable Preparation Tools and Equipment

- ☐ Proper lengths, sizes, types, and quantities of conduit, connectors, fittings, and ductwork of choice
- ☐ Proper lengths and types of communications cables
- ☐ Proper lengths and types of power cables and fittings
- ☐ Cable opening and preparation tools
- ☐ Cable management supplies (ties, clips, markers, etc.)
- ☐ Power installation and testing equipment

Other

- ☐ Batteries of choice
- ☐ Optional battery heater pad (A90-BXA-HP01)

- BATTERY NOTE -
Always install batteries after the battery box is mounted.

- WEIGHT NOTE -
The mounting surface, structure, and hardware must be able to support the cabinet and the weight of the combined Boxer system (cabinets and equipment mounted in them). The total Boxer battery box weight is 273 pounds: 23 pounds (empty battery box) plus 250 pounds of batteries installed in it (max). Depending upon the specific boxer model used, the Boxer cabinet weight may be up to 120 pounds: 70 pounds (empty cabinet) plus 50 pounds of equipment installed in it (max). Thus, the maximum combined equipment and Boxer system weight is 393 pounds.

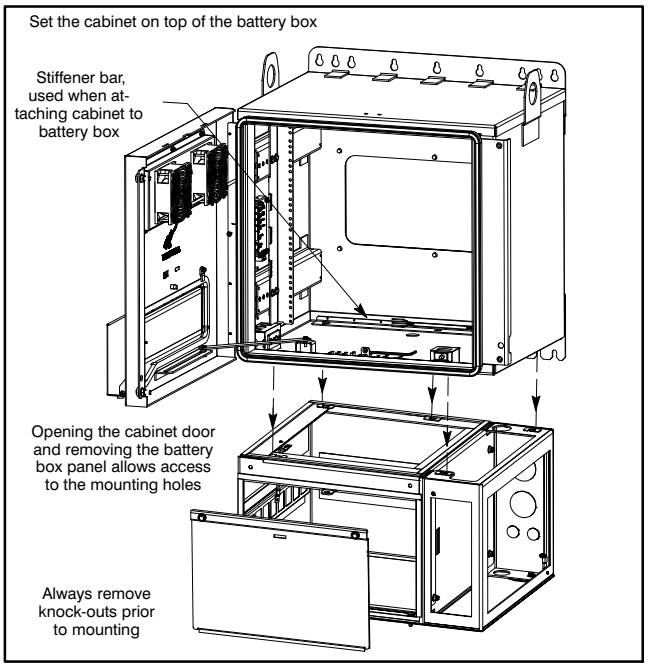


Figure 5. Mount Boxer Cabinet on Top of the Battery Box

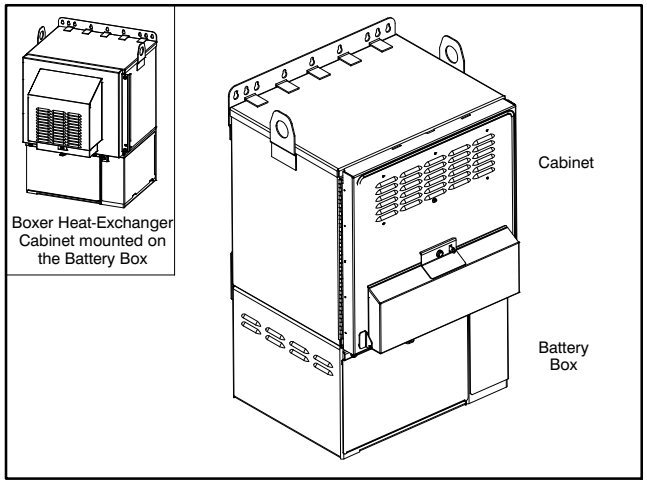


Figure 6. Battery Box Mounted with a Boxer Cabinet

3.5 Installing the Battery Box

The battery box is attached to the bottom of a Boxer cabinet, then the conjoined units are typically mounted on either a wall, an H-frame, a wood post (8” min. width), a telephone pole, or on a concrete pad (see joined units in Figure 6). Hardware to secure the two cabinets together is included. For any mounting type, prepare the site by verifying all ground, power, and communications cables are present at or near the installation site.

- KNOCK-OUT REMOVAL NOTE -

Always remove knock-outs (in the Boxer cabinet mounted above the battery box) where holes are desired before mounting the battery box or cabinet, regardless of the type of knock-out and regardless of the order of the mounting steps. All knock-outs should be knocked out from the inside of the cabinet, except for the small 0.575" knock-outs (which should be knocked out from the outside of the cabinet) or the concentric knock-outs.

3.5.1 Removing Knock-outs in the Top Cabinet

Regardless of the mounting type, prior to mounting and joining the cabinets together, remove knock-outs where access holes will be needed in the boxer cabinet which will be installed above the battery box.

There are five 0.575" diameter knock-outs in the floor of the Boxer cabinet where the battery box attaches to the cabinet (hole patterns of both units match). Remove these small knock-outs (see Paragraph 3.5.1 and the *KNOCK-OUT NOTE* therein*)* prior to joining and mounting the cabinets. Verify all other needed knock-outs are removed in the cabinet where cable access holes will be desired, including the knock-out for the battery cable, if not already removed.

3.5.2 Joining the Boxer Cabinet and the Battery Box

Regardless of the mounting type, attach the Boxer cabinet to the battery box prior to mounting or installing the conjoined units. To join the units, follow the steps below:

1. **Open and prepare both Boxer units.** Open the door of the main Boxer cabinet and remove both access panels of the battery box for easier handling and mounting hole access.

2. **Locate and open parts/hardware kit.** Find the bag of hardware and parts located inside the battery box. Open the bag and spread out the parts for easy access.

3. **Remove knock-outs in the Boxer cabinet.** If not already done, remove any required knock-outs in the cabinet (see Paragraph 3.5.1 and the *KNOCK-OUT NOTE* at this time).

4. **Install stiffener bar.** Install the L-shaped stiffener bar to the rear bottom surface of the cabinet. To do this, loosen the AC outlet box in the lower rear right corner, orient the bar so the mounting holes face down, slip the bar (lengthwise) behind the outlet box, and place it in the back of the cabinet where the rear wall meets the bottom surface. Align the holes in the bar with the holes in the cabinet, and secure the bracket to the bottom of the cabinet with the provided hardware. Retighten the AC outlet box.

5. **Set cabinet on battery box.** Lift the Boxer cabinet and place it on top of the battery box. Slide the cabinet to align the five holes in the top surface of the battery box with the matching holes in the bottom of the Boxer cabinet.

6. **Attach cabinet to battery box.** After aligning all holes, secure the units together by inserting, threading and tightening a bolt (plus a washer) through each set of aligned holes.

3.5.3 Mounting on a Concrete Pad

Follow the steps below to mount the Boxer battery box on a concrete pad. The battery box (or an optional skirt) is required when mounting the main Boxer cabinet on a concrete pad. Order and use the optional A90-BXA19-PT1 Pad Mount Template Kit for mounting on a concrete pad. Use the numbered steps below and the instructions in Figure 7 to mount the conjoined Boxer cabinet and battery box on a concrete pad. *These instructions are guidelines; you must design, dig, mix, pour, and install the concrete pad per local building codes and practices.* Note the following additional concerns for concrete pad installations:

- Verify all required cabinet knock-outs have been removed (see the *KNOCK-OUT NOTE* and Paragraph 3.5.1*)*.
- Select a mounting location that is dry, grade level or higher, and will support a 48" X 42" wide concrete pad (min).
- If placing the concrete pad next to an adjacent structure, Westell suggests a 24" distance between the cable access door panel and any structure to allow for easy cable access.

- CONCRETE PAD MOUNT NOTE -

For concrete pad mounting, prepare and pour the concrete pad (and install the accompanying conduit or ductwork) per local codes and company practices, insert anchors in the wet concrete where holes at the bottom of the battery box are located (holes are 0.344" in diameter), and allow the concrete to dry, prior to mounting the Boxer units.

- CONCRETE PAD HEIGHT NOTE -

The pad location must be grade-level or above - it must not be below grade-level. The location must be able to support the combined weight of both Boxer cabinets and all internal equipment. Always follow local installation codes, procedures, and practices.

Concrete Pad Mounting Steps

1. **Determine exact concrete pad location.** Determine, select, and prepare the location for the concrete pad, per company practice and local codes. When determining the size of the pad, allow for 12" of concrete to extend out from *each* side of the battery box (so the pad is a total of 2 feet wider and 2 feet longer than the battery box).

2. **Prepare template.** Perform Steps 1-3 of Figure 7.

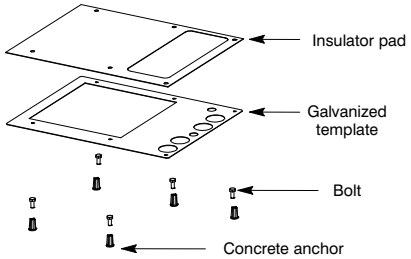
3. **Prepare the pad for conduit or ductwork.** Dig and frame the pad location per company practice. Once the pad is framed for concrete, but before pouring gravel or concrete, install any cable conduit or ductwork that is desired to be routed through the concrete and which will enter the battery box from the bottom.

4. **Prepare the pad for concrete (add gravel).** Fill and compact the pad site with gravel, per company practice.

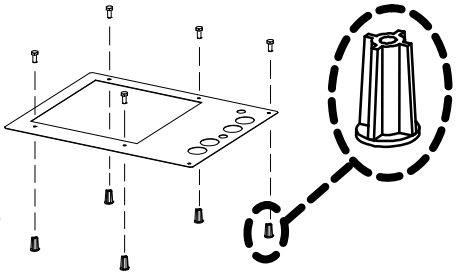
5. **Prepare and join both Boxer units.** If not already done, perform the steps in Paragraph 3.5.2 to open both Boxer units, to locate the bag of hardware in the battery box, to remove knock-outs, and to join the units.

6. **Pour concrete, place the template, then set insulator pad and battery box on dry concrete.** Perform Steps 4-7 of

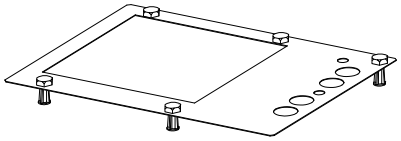
❶ ***Examine kit contents.*** Locate the A90-BXA19-PT1 pad mount template kit and examine and separate all parts.



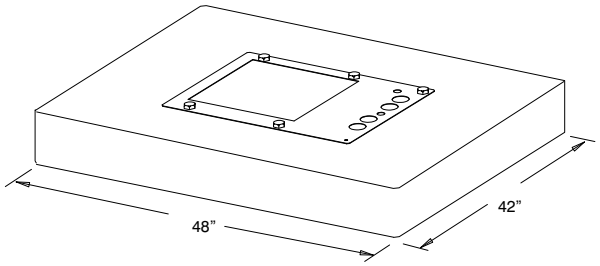
❷ ***Align bolts, holes, and anchors.*** Insert bolts through the 6 holes in the galvanized template, align each screw with an anchor, and firmly tighten the bolt to the anchor, with the template between them.



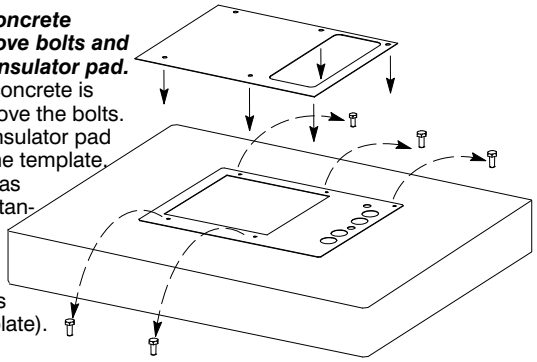
❸ ***Affix anchors and bolts to template.*** Firmly tighten the bolts to the anchors, with the template between them.



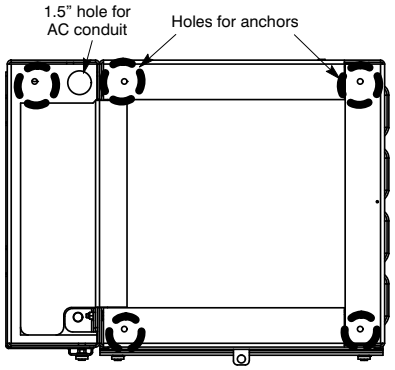
❹ ***Prepare concrete pad and place template on pad.***
Dig and frame the pad location per company practice. Allow for 12" of concrete past the perimeter walls of the template (a 48" wide by 42" deep pad is suggested). Once the pad is framed for concrete, but before pouring gravel or concrete, install any cable conduit or ductwork that is desired to be routed through the concrete and which will enter the battery box from the bottom. Fill and compact the pad site with gravel per company practice. Pour concrete and level to grade or slightly above — *the top surface of the pad must not be below grade level*. While the concrete is wet, set the template onto the top surface of the concrete, being sure the anchors are fully immersed and surrounded by wet concrete. Remove any spilled concrete from the top of the template or from the bolts before it dries.



❺ ***After concrete dries, remove bolts and place the insulator pad.*** When the concrete is cured, remove the bolts. Place the insulator pad on top of the template, orienting it as shown (rectangular cut-out is over the round holes of the template).



❻ ***Align 5 holes in bottom of battery box with 5 anchor holes.*** Locate the five small holes at the bottom of the box. Align the five holes in the bottom of the box with the five holes in the pad, template, and the five anchors.



Bottom view of battery box

❼ ***Install battery box.***
Once the holes are aligned with the matching holes in the pad and template, set the battery box on top of the insulator pad and template.

When the holes are aligned, insert a bolt through each set of aligned holes, and drive the bolts into the threads of the anchors in the concrete under the template.
Tighten all bolts securely, and test the installation stability by attempting to move or wiggle the box. Tighten any looseness.

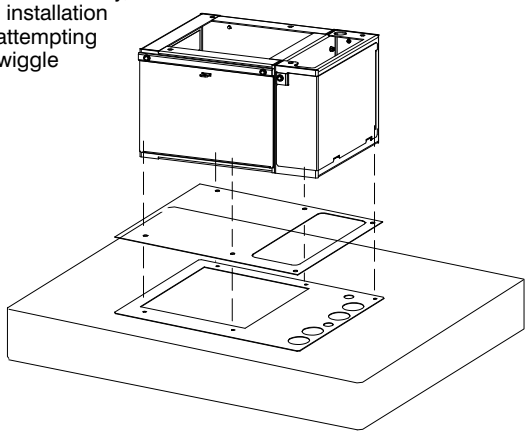


Figure 7. Concrete Pad Mounting

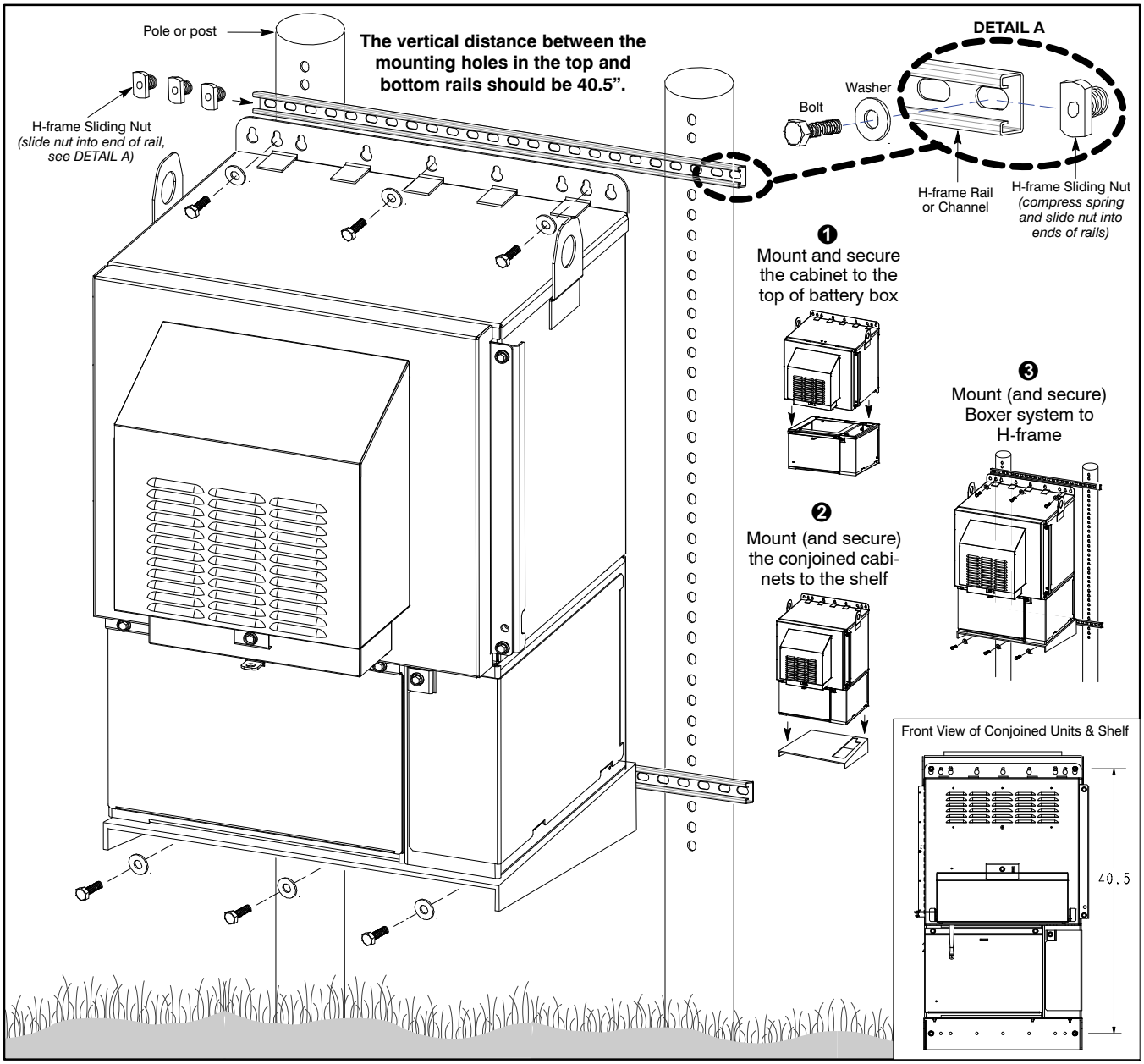


Figure 8. H-Frame Mounting

Figure 7 to pour the concrete, to place the template on the wet concrete, and once the concrete dries, to place the insulator pad and conjoined Boxer cabinets on the dry cured concrete.

7. **Test installation firmness.** Test the installation by attempting to move the conjoined cabinets. Correct any looseness.

8. **Determine next step.** Proceed to Paragraph 3.6, 3.7, or 3.8 to make ground connections, to install conduit, ductwork, fittings, and or cables, and make battery connections.

3.5.4 Mounting on an H-Frame

Follow the steps below to mount the Boxer battery box on an H-frame. When mounting on an H-Frame, order and use the A90-BXA-WH01 H-frame and wall mounting kit. See Figure 8 for an H-frame mounting drawing.

1. **Locate and open H-frame mounting kit.** Unpack and spread out the contents of the H-Frame mounting kit.

2. **Prepare and join both Boxer units.** If not already done, perform the steps in Paragraph 3.5.2 to open both Boxer units, to locate the bag of hardware in the battery box, to remove knock-outs, and to join the cabinet to the battery box.

3. **Attach the shelf from the mounting kit to the battery box.** Align the holes in the shelf with the holes in the bottom of the battery box, then from inside the battery box, insert one of the provided bolts (and washer) through the aligned holes, and thread a nut (and washer) onto the bolt from the bottom of the shelf, until the nut is fully tightened. Repeat for each bolt and set of aligned holes.

4. **Determine and set heights of H-frame rails.** Per company practice and application, determine then set the heights and positions of both H-Frame rails. ***The vertical distance between the mounting holes in the top and bottom rails should be 40.5".***

5. **Place sliding nuts in position in the H-frame rails.** Slide a minimum of three H-frame sliding nuts in both the top and bottom H-frame rails in the approximate desired mounting hole locations.

6. **Attach top of cabinet to upper H-frame rail.** An assisted or two-person lift is recommended. Lift the conjoined cabinet, battery box, and shelf units, align the top cabinet mounting holes with the holes in the sliding nuts in the top H-frame rail, and insert the bolts (minimum of three) through the aligned holes. Continue to hold the conjoined Boxer units, align the lower mounting rail sliding nuts with the mounting holes in the shelf unit, then insert and thread a minimum of three bolts into the sliding nuts. Firmly tighten all bolts.

7. **Test installation firmness.** Test the installation by attempting to move or wiggle the conjoined Boxer units. Correct any looseness and fully tighten all hardware.

8. **Determine next step.** Proceed to Paragraph 3.6, 3.7, or 3.8 to make ground connections, to install conduit, ductwork, fittings, and or cables, and make battery connections.

- WALL MOUNTING NOTE -
The wall and the mounting hardware must be able to support the combined weight of both the battery box (and all batteries) and the Boxer cabinet (and all equipment installed in it).

3.5.5 Mounting on a Wall

Follow the steps below to mount the battery box and a Boxer cabinet to a wall using the A90-BXA-WH01 wall and H-frame mounting kit. The wall must be able to support the weight of both the Boxer cabinet (and all equipment mounted in it) and the battery box and all batteries mounted in it (approximately 275 pounds total).

1. **Find best wall position.** Per company practice and application, determine the best mounting height and position for the conjoined cabinet and battery box on the wall. Verify this location meets all cabinet spacing requirements.

2. **Locate and open wall mount kit.** Unpack and spread out the contents of the A90-BXA-WH01 wall mount kit.

3. **Prepare and join both Boxer units.** If not already done, perform the steps in Paragraph 3.5.2 to open both Boxer units, to locate the bag of hardware in the battery box, to remove knock-outs, and to join the Boxer cabinet to the battery box.

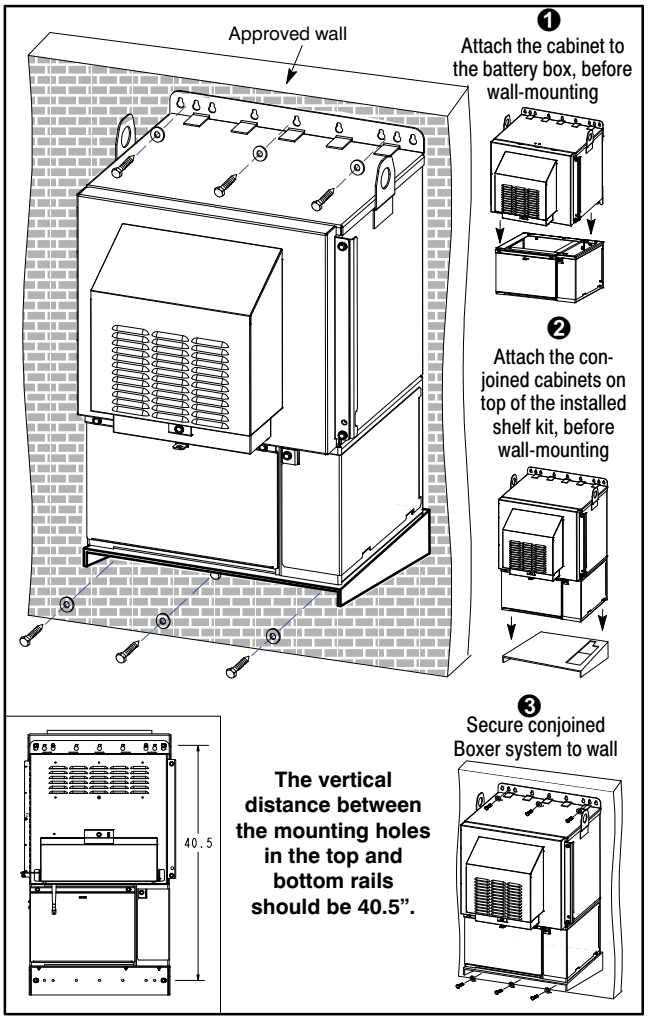


Figure 9. Wall Mounting

4. **Attach the shelf from the mounting kit to the battery box.** Align the holes in the mounting kit's shelf with the holes in the bottom of the battery box, then from inside the battery box, insert one of provided bolt (and washer) through the aligned holes, and thread a nut (and washer) onto the bolt from the bottom of the shelf, until the nut is fully tightened. Repeat for each bolt and set of aligned holes.

5. **Prepare the wall mounting hardware.** Bring the appropriate wall-mounting hardware to the installation site. In addition to the wall structure and surface, the hardware must be capable of supporting the weight of both cabinets plus the weight of their internal equipment and batteries.

6. **Mark mounting hole locations on the wall.** Lift the conjoined Boxer units, level it, and mark all the mounting hole locations on the wall. Mark a minimum of three holes on the top and on the bottom (each).

7. **Drill mounting holes.** Drill appropriately-sized pilot holes (smaller than the width and depth of the mounting bolts,

screws or fasteners) into the wall at all marked hole sites. ***Do not drill the holes too large.***

8. **Partially install top mounting bolts.** Verify the head of the top mounting bolts will fit through the keyhole-shaped mounting holes in the top mounting flange of the Boxer cabinet. Install the top, approved, mounting bolts into the predrilled holes in the wall. Use washers if necessary. Leave approximately 1/4" of the bolt protruding from the wall.

9. **Lift and place conjoined Boxer system against the wall.** Lift the unified Boxer system, align the top mounting keyholes in the Boxer cabinet with the bolts protruding from the wall, and hang the Boxer system on the bolts, but continue to hold it until all mounting bolts are fully installed.

10. **Drive top mounting bolts.** Fully tighten the top mounting bolts, but continue to manually hold the Boxer system against the wall during the next step.

11. **Install bottom mounting bolts.** Install the bottom, approved, mounting bolts into the predrilled holes in the wall. Use washers if necessary. Fully drive and tighten the bolts into the wall.

12. **Test installation firmness, release hold if secure.** Test the installation by attempting to move or wiggle the cabinet, battery box, and shelf. Again fully tighten all mounting hardware. Manually release any holding of the system after all mounting hardware proves to be secure.

13. **Determine next step, or close up cabinet and clean the site.** Proceed to Paragraph 3.6, 3.7, or 3.8 to make ground connections, to install conduit, ductwork, fittings, and or cables, and make battery connections.

3.5.6 Mounting on a Pole

The pole mount kit is shown in Figure 10. For pole mounting, follow the steps in Figure 11. The pole is typically an existing, wood, telephone pole (minimum 8" diameter).

- NOTE -
Always follow local safety precautions and standard operating procedures for grounding the equipment when installing, upgrading, repairing or maintaining equipment. Any instructions or information contained herein is subordinate to local codes, operating procedures or practices.

3.6 Making Ground Connections

Copper ground lugs that accommodate #6 to #14 gauge wire are provided on a ground plate on the interior floor of the Boxer cabinet (see Figure 12). Also on the plate are eight sets of bond posts. To ground the battery box to the cabinet's ground plate, two bonds straps (provided) must be installed, as explained in the steps below.

1. **Locate the bond straps.** Find the bond straps that are provided in the kit shipped with the battery box. One bond strap is to be installed inside the battery box, and one is installed in the cabinet, at the bottom. Note that each ring end of each strap has a hole in it, and also note that one hole is larger than the other.

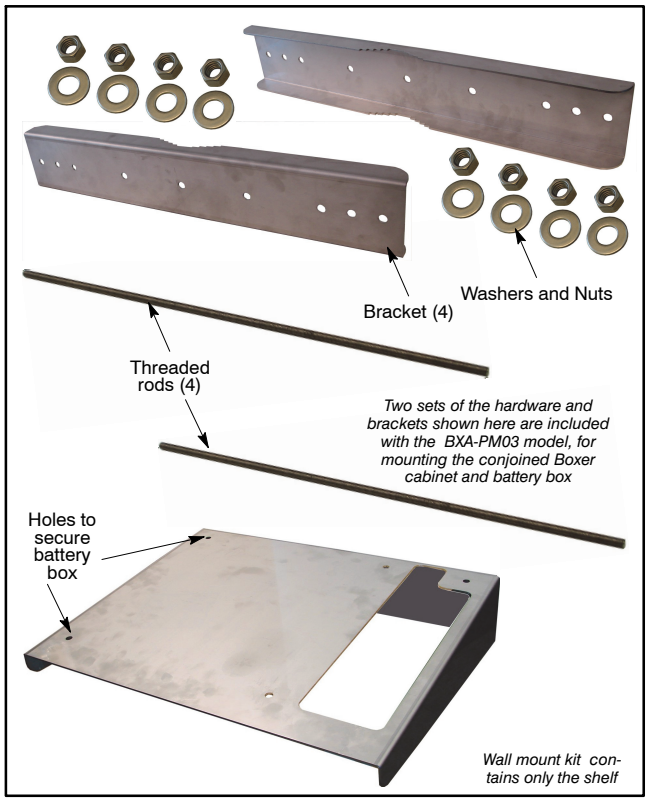


Figure 10. BXA-PM03 Pole Mount Kit

2. **Install one end of the cabinet bond strap.** Install the ring end with the larger hole around a post on the main Boxer cabinet's ground plate.

3. **Install other end.** Install the ring end with the smaller hole between a provided washer and screw, in the bottom front left corner in the cabinet, as shown in Figure 13.

4. **Install battery box bond strap.** As shown in Figure13, attach one end of the other bond strap to the downward facing post provided for it on the top flange of the battery box near the left wall. Attach the other end of the strap to the bolt that enters the top left front corner of the battery box from the cabinet above. this bolt also secures the bond strap located inside the cabinet above. Secure the bond strap with the provided nut.

5. **Route earth ground wire to main Boxer cabinet ground plate.** Run an earth ground wire into the battery box up through the cable compartment, through a knock-out in the main cabinet above the battery box, and to the desired ground lug in the ground plate of the main Boxer cabinet.

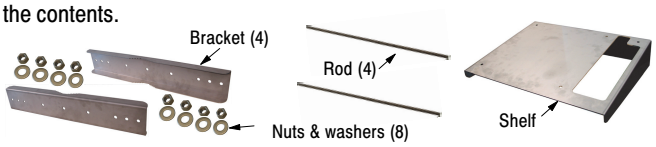
6. **Seal the earth ground entrance hole.** Depending on the type of fitting or grommet used, it may be necessary to seal the ground wire entrance hole, as stated in the note below.

- NOTE -
To improve the integrity of the cable entry seals when rubber grommets are used, a water-proof foam or silicone sealant should be used on the interior side of the cabinet, around the exposed grommet and cable entry.

Pole Mounting Instructions

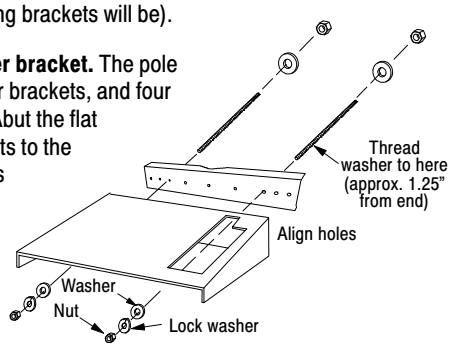
1. Perform all the steps of Paragraph 3.5.2.

2. **Open Pole Mount Kit.** Open the BXA-PM03 Pole Mount Kit and spread out the contents.

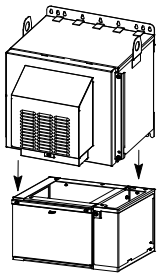


3. Determine mounting location, orientation, and height on the pole, per company practice. Mark the pole where the bottom of the installed Boxer system will be (where lower mounting brackets will be).

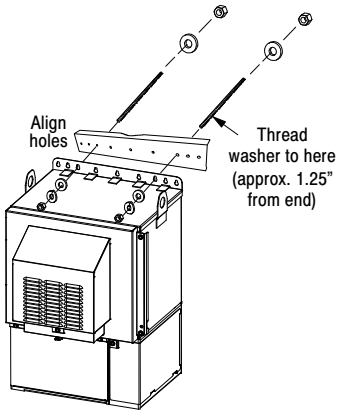
4. **Attach kit's shelf to a lower bracket.** The pole mount kit has one shelf, four brackets, and four heavy duty threaded rods. Abut the flat surface of one of the brackets to the flat back side of the shelf, as shown to the right. Align the holes in the bracket and the shelf. Thread a nut approximately 1.25" onto one of the four rods. Insert that same rod end through one set of aligned holes in the bracket and the shelf (insert starting from the bracket side toward the shelf side). The two selected aligned hole sets for the two rods should allow the final installed rod position to be as close as possible to the pole (if the pole is 8" in diameter, chose the holes that are 4" away from the bracket's center hole). Thread a washer, lock washer, then a small nut onto the end of the rod that protrudes about 1" out the shelf side of the aligned holes (on the under side of the shelf). Fully thread the nut onto the rod until very tight. Repeat for the second rod on the other bracket end.



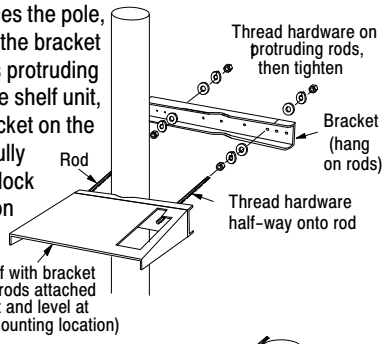
5. **Join Boxer cabinet to battery box.** If not previously done, attach the Boxer cabinet to the battery box, as explained in Paragraph 3.5.2



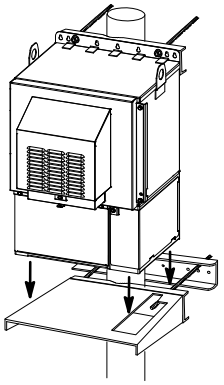
6. **Attach a bracket to top Boxer cabinet mounting flange.** Place the flat side of one mounting bracket against the back side of the cabinet's top mounting flange. Align the holes in the bracket with the holes in the flange. Thread a nut about 1.25" onto a rod, then insert that rod end through one set of aligned holes (same hole position as was chosen in Step 4 above). Slide and thread a washer, lock washer, then a small nut onto the end of the rod protruding about 1" through the cabinet's mounting flange, and fully tighten the nut. Repeat for the second rod on the other bracket end.



7. **Attach shelf to pole.** Locate the shelf (with attached bracket and rods from Step 4) and thread a nut, a lock washer, and a washer about half-way down each rod that protrudes out the back side of the shelf. Lift the shelf and place it against the pole at the marked height location and in the correct orientation (facing the final installed-product direction). Verify the serrated edges in the middle of the bracket abut the center of the pole, and hold the shelf in a level horizontal position. Locate another mounting bracket place it behind the pole opposite the shelf, orient it so the serrated edge faces the pole, align the holes in the bracket with the long rods protruding out the back of the shelf unit, and hang the bracket on the rods. Place and fully thread a washer, lock washer, and nut on each rod. Firmly tighten all nuts.



8. **Secure conjoined boxer cabinets to mounted shelf.** Lift the conjoined units (battery box, cabinet, and top mounting bracket) and set it on the secured shelf unit. Align the holes in the bottom of the battery box with the holes in the shelf, and insert (from inside the battery box) the provided bolts through all aligned holes. Thread washers, lock washers and nuts onto each bolt from the bottom of the shelf, and tighten nuts firmly.



9. **Attach top of conjoined cabinets to pole.** Hang the last bracket from the rods protruding from the cabinet's top mounting flange at the back side of the pole, placing the bracket's serrated edge against the pole and aligning the correct holes. Place and thread a washer, lock washer, then a small nut onto the end of each rod, then fully tighten the nuts. Repeat for the second rod on the other bracket end. Attempt to move or wiggle the conjoined units on the pole, resolve any detected loose connections, and firmly tighten all nuts. Cut extra rod length, if desired.

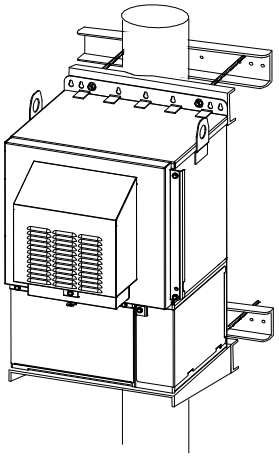


Figure 11. Optional Pole Mounting with Kit # BXA-PM03

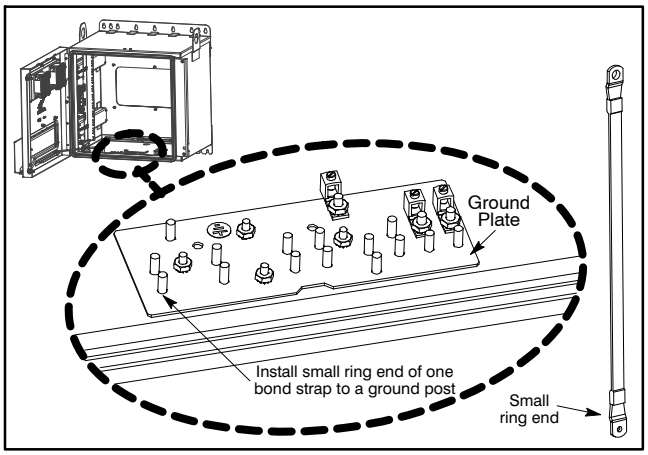


Figure 12. Ground Plate Location in Main Cabinet

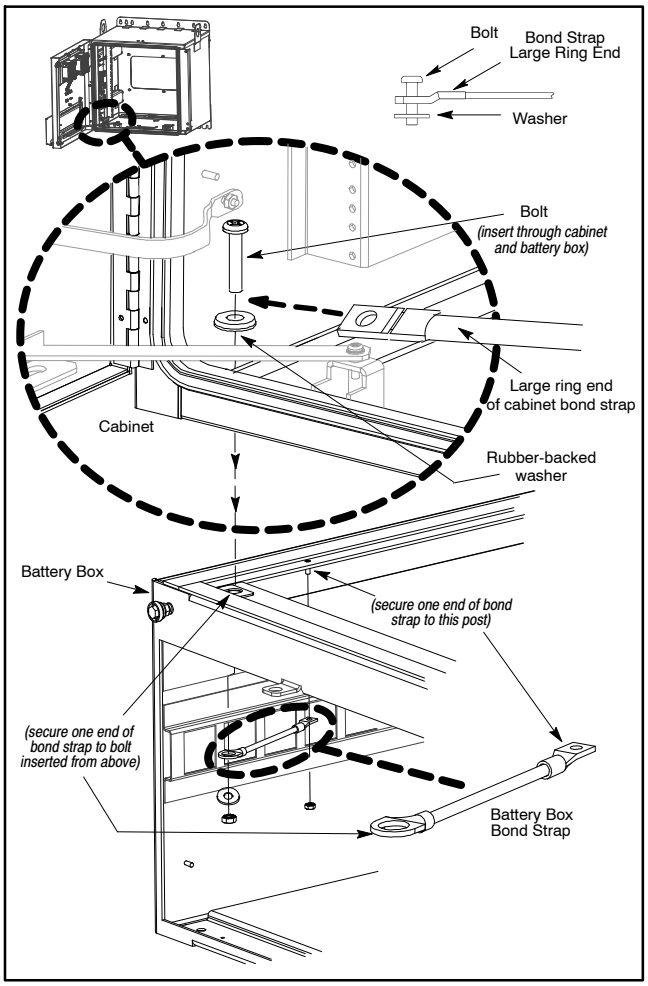


Figure 13. Installing Battery Box Bond Strap

3.7 Making Cable Access Compartment Connections (Installing Fittings and Conduit)

3.7.1 When a battery box is attached to a main Boxer cabinet, extra lengths of cables and conduit are needed for the additional height distance of the battery box, and an additional AC fitting may be used at the bottom floor of the battery box. Make these additional connections per company practice. Attach any grommets, conduit, innerducts, and/or fittings in the appropriate knock-out holes in the main boxer cabinet.

3.7.2 Route and feed cables through the conduit and the cable access compartment of the battery box, all per company practice. Also gently feed/pull the communications cable(s), if available at this time, from the outside up through the liquidtight tubing or steel conduit to the inside, allowing an adequate amount of slack in the cable to secure to connectors at a later time. If conduit is not required and only exposed cabling is installed, rubber grommets can be used to seal the communications cabling in the cabinet.

3.8 Making Battery Compartment Connections

To make battery connections in the battery compartment, a battery heater pad (optional), batteries, and battery cable must be installed. The paragraphs below provide a description of these procedures.

3.8.1 Installing an Optional Heater Pad

Model BXB19-A does not include a heater pad, but Westell offers an optional battery heater pad for it (Part # A90-BXA-HP01). If using the optional heater pad, locate and unroll the heater pad. Place the heater pad into the bottom of the battery compartment (Figure 16), connector cable side up, and connector end on the right side of the tray. Spread out the pad to cover the compartment floor. Connect the heater pad's connector to the battery cable (Connector C in Figure 14) in Paragraph 3.8.2 after the battery cable is installed.

- BATTERY CABLE NOTE -
The BXB19-A and BXB19-AE differ in the cable used for the temperature probe. The BXB19-A includes a Lineage temperature probe. The BXB19-AE includes an Eltek "ready" temperature probe cable. The Eltek temperature probe is field-provided and field-installed.

3.8.2 Installing the Battery Cable

A special battery cable (Figure 14 or Figure 15) is shipped with the battery box, to facilitate backup battery connections. The BXB19-A ships with the 023-800674 battery cable shown in Figure 15, and the BXB19-AE ships with the 023-800257 battery cable shown in Figure 14. The battery compartment end of the cable contains 4 connectors (shown as connectors A, B, C, D in Figure 14), which are connected to the batteries and the battery heater pad in the battery compartment. The power end of the cable also contains 4 connectors (shown as connectors E, F, G, and H in Figure 14), which are connected to AC and DC power connectors in the main cabinet above the battery box. The middle of the cable contains a special grommet (fitting with a threaded coupler and lock nut) which is installed in the hole at the bottom of the Boxer main cabinet. Follow the steps below to connect the battery cable.

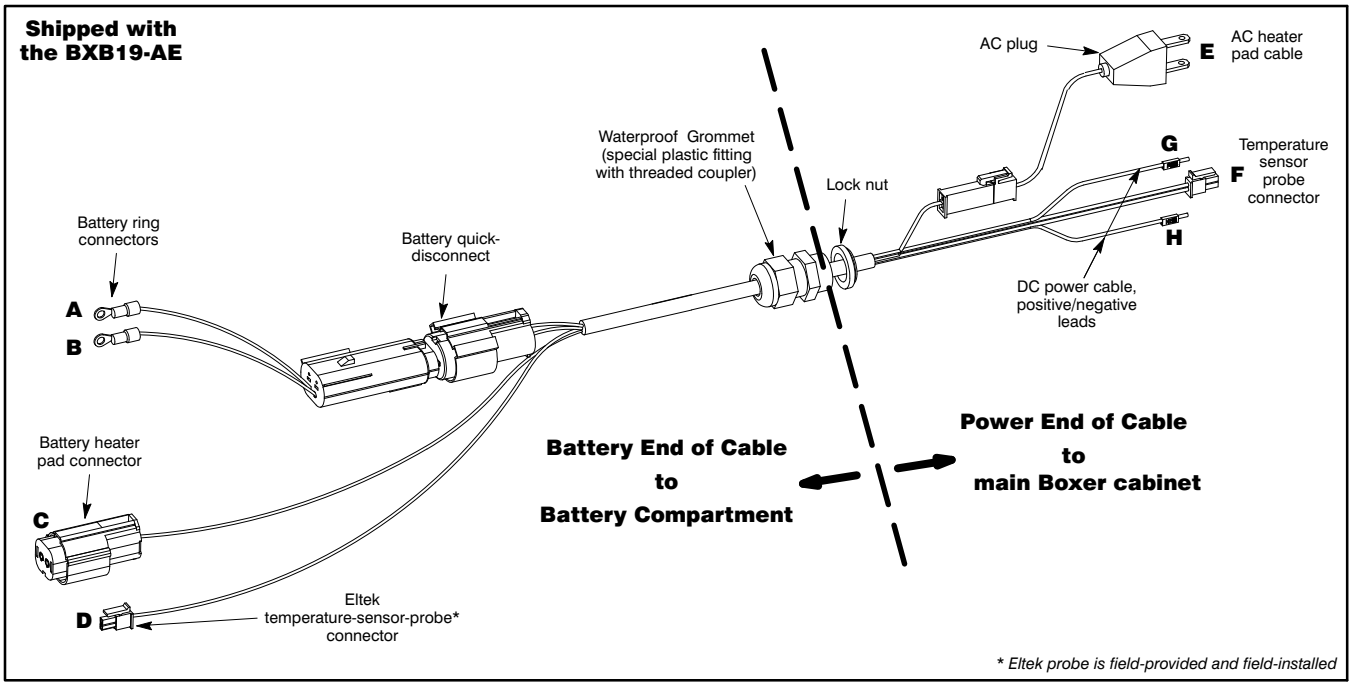


Figure 14. Westell Battery Cable Part # 023-800257 (supports field-provided/installed Eltek temperature probe)

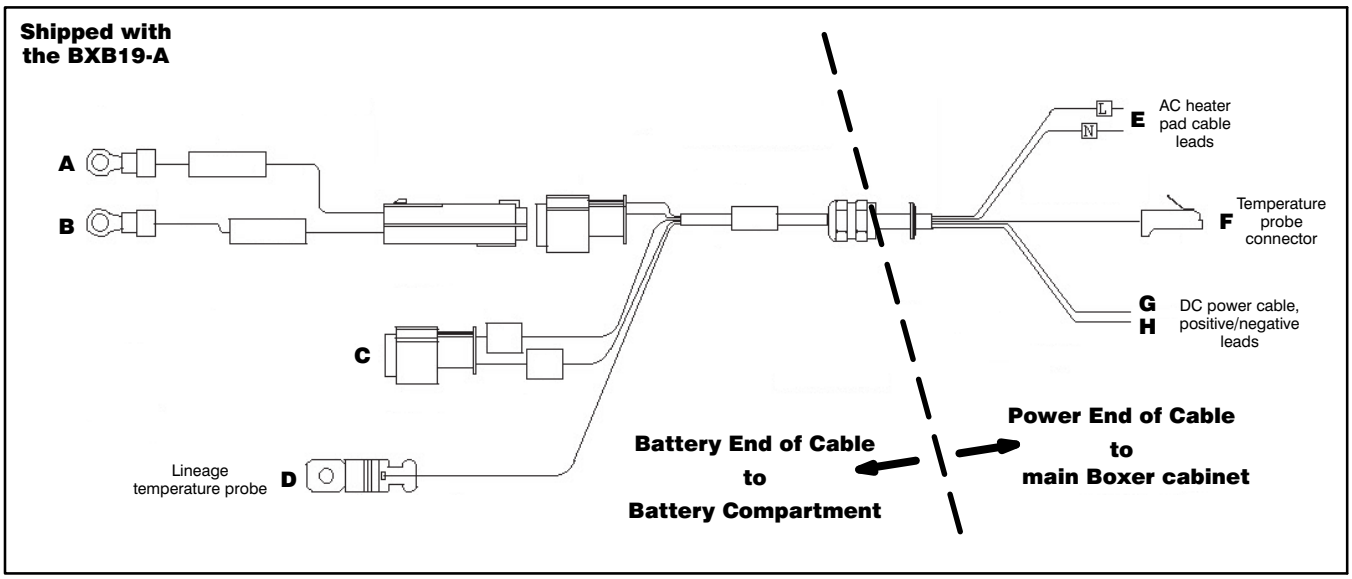


Figure 15. Westell Battery Cable Part # 023-800674 (includes Lineage temperature probe)

1. **Locate battery cable.** Find the battery cable located inside the kit of parts shipped with the battery box, and remove it from its protective wrapping. Note the special waterproof grommet and nut in the middle area of the cable.

2. **Remove knock-out in main Boxer cabinet.** If not already removed, locate the main cabinet's bottom knock-out that is provided for the battery cable and remove the knock-out.

3. **Remove nut from battery cable's middle grommet.** Unscrew and remove the lock nut from the threaded end of the special grommet/fitting in the middle of the battery cable.

4. **Route power end of cable into the the main Boxer cabinet.** Starting inside the battery box battery compartment, route the *Power* or *main cabinet end* of the cable (with the E, F, G, and H power connectors) up through the previously removed grommet lock nut installed in the knock-out hole in the cabinet, and into the main boxer cabinet. Pull the battery cable up as far as it will go, until the special grommet in the middle of the cable abuts the hole edges and the threaded part protrudes into the main cabinet.

5. **Secure cable's middle grommet in the knock-out hole.** Press and hold the cable's special grommet against the

knock-out hole and screw the threaded lock nut back onto the threaded part of the grommet. Fully tighten the nut.

6. **Install optional battery heater pad.** Install the optional battery heater pad at this time. Note that the cable/connector end of the pad should face right (be closest to the compartment divider wall).
7. **Connect heater pad to battery cable.** Locate the connector at the end of the heater pad cable and connect it to Connector C of the battery cable.
8. **BXB19-A Model: Connect AC plug to AC duplex outlet in main cabinet.** In the main cabinet, insert the battery cable's AC plug (Connector E) into the AC duplex outlet at the bottom of the cabinet.
9. **BXB19-AE Model: Wire to AC load center.** Connect AC wires directly to the AC load center.
10. **Connect temperature sensor probe connector to battery charger.** Locate connector F of the battery cable and connect it to the appropriate connector of the battery charger in the cabinet.

3.8.3 Installing the Batteries

Before battery installation, first install the battery cable by performing the steps in Paragraph 3.8.2, then install the optional heater pad (see Figure 16), then install the batteries, per company practice or per the steps below. The total battery weight cannot exceed 250 pounds. See Figure 16 and Table 1 for battery compartment dimensions.

1. **Select batteries.** Select the appropriate battery size and type per company practice and per the equipment requirements.
2. **Install the optional battery spacer block.** To help insure a snug battery fit, install the optional battery spacer block if the batteries are small enough to accommodate the installation of all the batteries plus the spacer block. The left wall tie-down railing can be used to adjust the installation depth of this spacer block. Orient the block as shown in Figure 16, and insert the left side flange of the block into the left-wall tie-down railing, per the battery depth. Secure the right side of the block to the holes located in the compartment divider wall.
3. **Install the optional battery heater pad.** Install the optional battery heater pad, if ordered or equipped. Place the pad on the battery compartment floor, with the connector/cable side toward the right (next to the divider wall between compartments).
4. **Place batteries in the battery compartment.** Gently place the batteries in the battery compartment, on top of the optional installed heater pad. Press the batteries up against the left and rear compartment walls (or the battery spacer block). Do not place a battery on the heater pad cable or connector, to avoid possible damage.
5. **Jumper the batteries together.** Jumper the batteries together, per company practice.
6. **Connect battery cable connectors to batteries.** In the battery compartment, locate Connectors A and B of the battery cable (see Figure 14) and connect them to the proper battery terminals, per company practice.
7. **Make battery compartment temperature sensor connections.** Locate the battery compartment's temperature sensor cable (install it if not pre-installed with the batteries) and connect it to Connector D of the battery cable.
8. **Connect DC leads to screw terminals of battery charger (user provided).** Locate the battery cable's DC leads (G and H in Figure 14) and connect them to the screw terminals of the battery charger's DC screw terminal strip, per company practice. Connect the red positive lead to the +V screw terminal, and connect the black negative lead to the -V terminal.

3.8.4 Installing the Battery Tie-down Strap

Once the batteries are placed in the battery compartment, use the provided battery strap to secure the batteries in place. To secure the strap, pass the strap through the left wall tie-down railing, route the strap around the front then right side of the battery group, pass the strap through a back wall (or the right divider wall) railing, then fasten the strap ends/connectors together and tighten the strap, to snug the batteries up against the rear and left walls of the compartment. Tighten the strap to remove any slack. Examine the strap to verify there is no strap kinking, binding, or slack.

3.9 Testing the Battery Box Connections

Perform system power-up per company practice or per the instructions in the main Boxer cabinet documentation. If trouble is encountered, verify all battery cable connections are secure and tight and have good contact or connection.

3.10 Closing and Locking the Cabinets

Upon completion, the installer should close and lock the Boxer cabinet and the battery box by replacing the both compartment door panels and tightening the cup-washer screws with a can wrench or 216 tool. The battery box compartment panel optionally can be locked with a padlock (customer supplied) via a hole provided in the provided padlock flange. Pick up any tools and materials at the installation site, and clean the site of any trash or debris.

4. MAINTENANCE

- CAUTION -

To avoid electrical shock, turn off any DC or AC power feeds before servicing the unit.

4.1 Replacing the Battery Cable

If the battery cable is not working properly, it can be replaced by disconnecting it and installing a new one. See Paragraph 6.2 for information on ordering a replacement. Always disconnect power at the source before removing the battery cable.

4.2 Inspection and Debris Removal

Westell® Boxer® battery box components are maintenance-free, however, at least once every six months, inspect Boxer to remove any debris from the vents or louvers (Figure 17). This facilitates proper operation of the cabinet and battery box and allows unobstructed air flow.

5. CUSTOMER & TECHNICAL SERVICES

5.1 Customer Service & Technical Assistance

If technical or customer assistance is required, contact Westell by calling or using one of the following options:

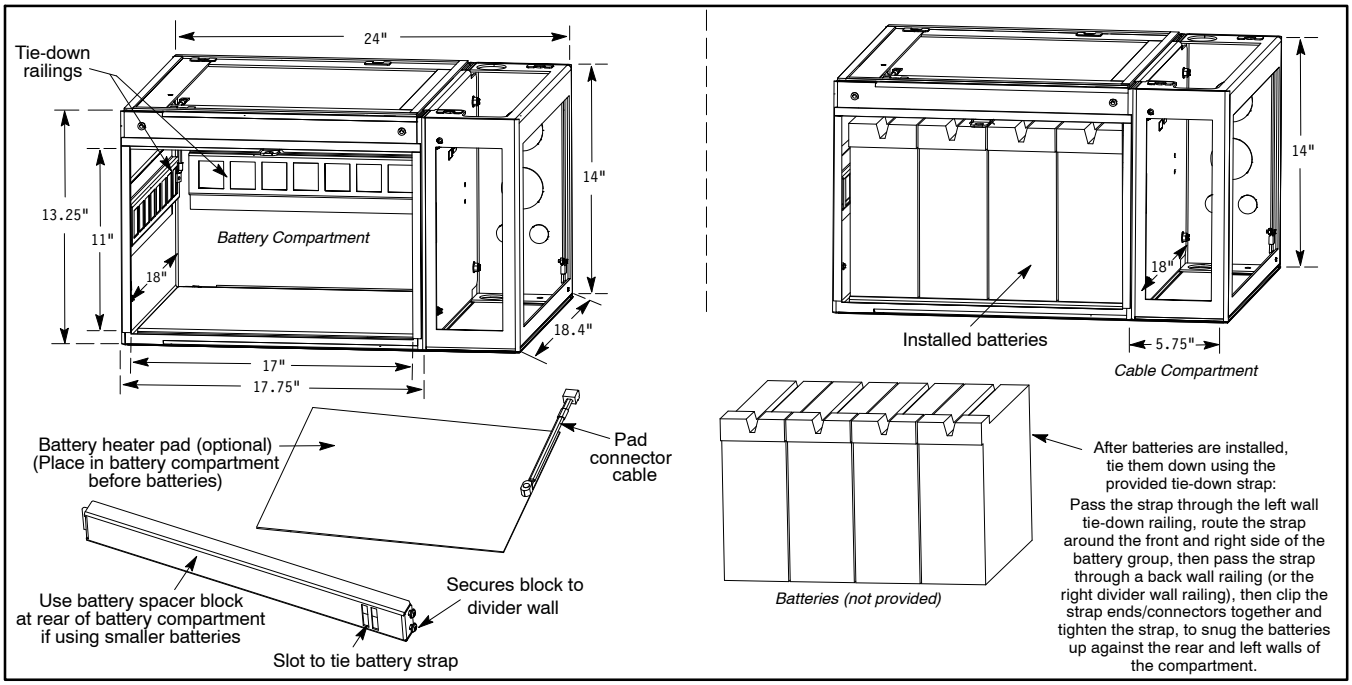


Figure 16. Placing Batteries in Battery Compartment

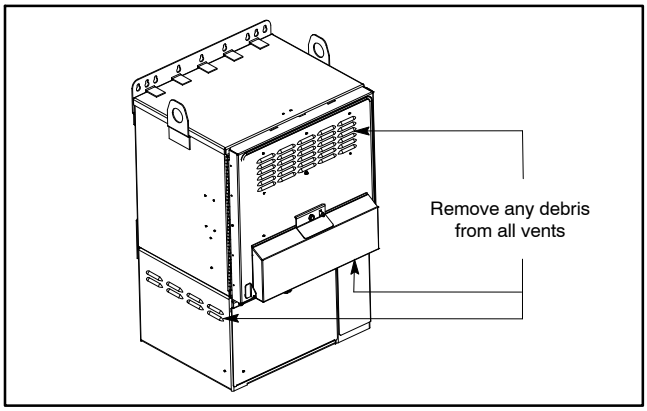


Figure 17. Clean the Air Intake/Exhaust Vents or Louvers

Physical Feature	U.S.	Metric
Height *(external)*	14.06 in.	35.71 cm
Width *(external, including vents)*	24.35 in.	61.85 cm
Depth *(including lock and flange)*	19.38 in.	49.23 cm
Depth *(without lock and flange)*	18.25 in.	46.36 cm
Height *(internal battery compartment)*	13.25 in.	33.7 cm
Width *(battery compartment, approx.)*	17.75 in.	45.1 cm
Depth *(battery compartment, approx.)*	18 in.	45.7 cm
Height *(internal cable compartment)*	13.9 in.	35.24 cm
Width *(cable compartment)*	5.75 in.	14.6 cm
Depth *(cable compartment)*	18 in.	45.7 cm
Weight *(empty, approx.)*	23 lbs.	10.4 kg
Weight Load *(Max.)*	250 lbs.	113.5 kg
Outside Operating Temp.	-40° to 115°F	-40° to 46°C
Internal cabinet Temp.	-40° to 149°F	-40° to 65°C
Humidity	0 to 95% (non-condensing)	

Table 1. Boxer Battery Box Physical Specifications

Voice: (800) 377-8766
email: *global_support@westell.com*

For additional information about Westell, visit the Westell World Wide Web site at http://**www.Westell.com.**

5.2 Part Numbers

This equipment is identified by a part number (A90-BXB19-A), which consists of three parts: the equipment issue letter (A), the assembly type (90), and the model number (BXB19-A). Each time a change is made to the product which changes the form, fit, or function of the product, the issue letter is incremented by one. Be sure to indicate the issue level as well as the model number when making inquiries about the equipment.

6. WARRANTY & RETURNS

6.1 Warranty

Westell warrants this product to be defect-free at shipment time. Westell also warrants this product to be fully functional for the time period specified by the terms and conditions governing the sale of the product. Equipment repairs/modification attempts by an unauthorized person will void the warranty.

6.2 Return and Replacement Policy

Westell will repair or replace any defective Westell equipment without cost during the warranty period if the unit is defective for any reason other than abuse, improper use, or improper installation. To return defective equipment, first request a Re-

turn Material Authorization (RMA) number from Westell by calling or using one of the options shown below. Once an RMA number is obtained, return the defective unit (freight prepaid), along with a brief problem description, to the address we will provide to you when you contact us.

Voice: (630) 375-4211
email: rgmdept@westell.com

Replacements will be shipped in the fastest manner consistent with the urgency of the situation. Westell will continue to repair or replace faulty equipment beyond the warranty period for a nominal charge. Contact Westell for details.

7. SPECIFICATIONS

7.1 Ordering Specifications

To order units, call the telephone number shown in Paragraph 5.1 and specify a specific model number shown in Table 2.

7.2 Regulatory/Agency Specifications

The Westell® Boxer® battery box is designed to meet the following regulatory, safety, or environmental specifications:

- NEMA 3R

7.3 Physical Specifications

The physical specifications are shown in Table 1.

Battery Box Ordering Information								
A90-BXB19-A	Westell Boxer battery box (for use with and mounting under the Westell 19" rack Boxer cabinet family. Includes kit of parts: battery tie-down strap, bag of hardware (screws, washers and lock nuts) to attach battery box to cabinet and multi-connector battery cable assembly. The battery cable assembly (023-800674) includes a Lineage battery temperature probe for use with Lineage rectifiers.							
A90-BXB19-AE	Same as above but the battery cable assembly (023-800257) includes a connector to support a field-installed Eltek temperature probe in place of the Lineage temperature probe.							
Other Boxer Battery Boxes, Accessories, and Options								
Type	**Part Number**	**Description**	**Supported Models**					
			Boxer 5	**Boxer 10**	**Boxer 16**	**Boxer 20**	**Boxer 30**	
Battery Boxes & Skirts	A90-BXB05V-A	Battery box standard	✓					
	A90-BXB19-A	Battery box standard, includes a Lineage temp. probe		✓	✓	✓	✓	
	A90-BXB19-AE	Same as BXB19-A but with Eltek temp. probe connector		✓	✓	✓	✓	
	A90-BXB19-C	Battery box standard but with bottom floor knock-outs		✓	✓	✓	✓	
	A90-BXB19-D	Battery box wide, for Boxer + SideCar		✓	✓	✓	✓	
	A90-BXS19-14	Skirt box for boxer, 14" high		✓	✓	✓	✓	
Accessories	A90-BXA-HP01	Battery heater pad		✓	✓	✓	✓	
	A90-BXA-PM02	Pole mount kit: main cabinet		✓	✓	✓		
	A90-BXA05V-PM2	Pole mount kit: main cabinet only	✓					
	A90-BXA05V-PM3	Pole mount kit: main cabinet + battery box	✓					
	A90-BXA-PM03	Pole mount kit: main cabinet + standard battery box		✓				
	A90-BXA-PM05	Pole mount kit: main cab. + standard & wide battery box			✓	✓	✓	
	A90-BXA-WH01	Wall/H-frame mount kit: main cab. + std & wide battery box		✓	✓	✓	✓	
	A90-BXA05V-WH1	Wall mount kit: main cabinet + battery box	✓					
	A90-BXA-PT1	Pad mount template: standard battery box		✓	✓	✓	✓	
	A90-BXA-PT2	Pad mount template: wide battery box		✓	✓	✓	✓	
	A90-BXA-CK01	Coupler kit (2) ½", (2) ¾", (4) 2"	✓	✓	✓	✓	✓	

Table 2. Boxer Battery Boxes, and Orderable Options and Accessories

Boxer Family Outdoor Cabinets				
Series	**Description**	**Cooling**	**Power**	**Part Number**
Boxer 5 *(5-RU 19" tall* rack)*	Main Cabinet	Passive cooling	N/A	A90-BXM05V19-NMT
		150W fan-cooled, always-on	-48VDC	A90-BXM05V19-NAF
		200W heat exchanger, always-on		A90-BXM05V19-2HE
		200W heat exchanger, temp-controlled	+24 or -48VDC	A90-BXM05V19-2HE3
		Same as -2HE3 but GR-487 Issue 4 complaint		A90-BXM05V19-2HE3G
Boxer 10 *(10-RU 19" wide rack)*	Main Cabinet	Passive cooling	N/A	A90-BXM1019-NMT
		400W heat exchanger, always-on	-48VDC	A90-BXM1019-NHE
		400W heat exchanger, temp-controlled	+24 or -48VDC	A90-BXM1019-NHE3
		Same as -NHE3 but GR-487 Issue 4 compliant		A90-BXM1019-NHE3G
		Same as -NHE3 but no rear panel & no lift ears		A90-BXM1019-NHE5
		600W fan-cooled, always-on, customer access door	-48VDC	A90-BXM1019-CAF
Boxer 16 *(16-RU 19" wide rack)*	Main Cabinet	400W heat exchanger, always-on	-48VDC	A90-BXM1619-4HE
		700W heat exchanger, temp-controlled		A90-BXM1619-7HE
		Same as the -7HE but GR-487 lss. 4 complaint		A90-BXM1619-7HEG
		4K BTU air conditioner, temp-controlled	120VAC	A90-BXM1619-4KAC
	Main Cabinet+SideCar+Battery Box	400W heat exchanger, always-on	-48VDC	A90-BXSC1619-4H
Boxer 20 *(20-RU 19" wide rack)*	Main Cabinet	400W heat exchanger, temp-controlled	+24 or -48VDC	A90-BXM2019-4HE3
		Same as the -4HE but GR-487 Issue 4 complaint		A90-BXM2019-4HE3G
Boxer 30 *(30-RU 19" wide rack)*	Main Cabinet	1000W heat exchanger, temp-controlled	-48VDC	A90-BXM3019-10HE
	Main Cabinet+SideCar+Battery Box	1000W heat exchanger, temp-controlled		A90-BXSC3019-10H

** In the Boxer 5 cabinet, the 19" wide rack is vertical (rotated 90 degrees, with channels at top and bottom).*

Table 3. Boxer Cabinet Ordering Information

Appendix A – Product Views

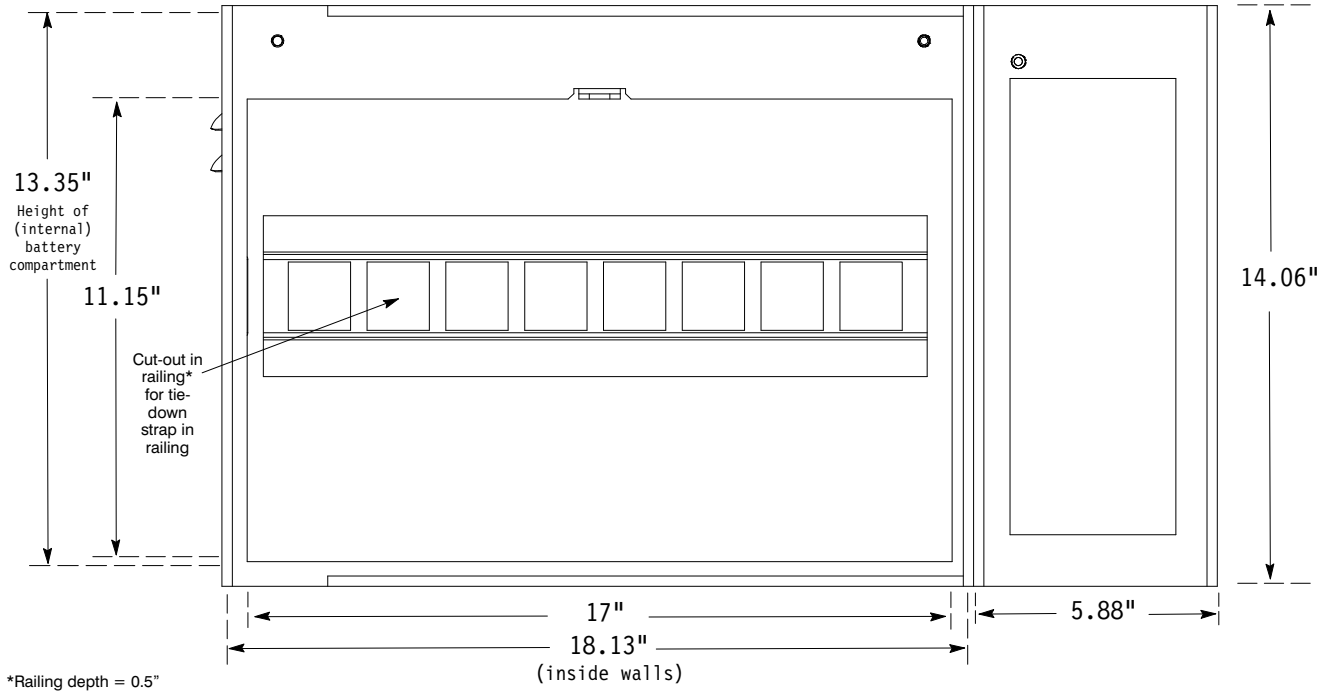


Figure 18. Front View of Battery Box (Panels Removed)

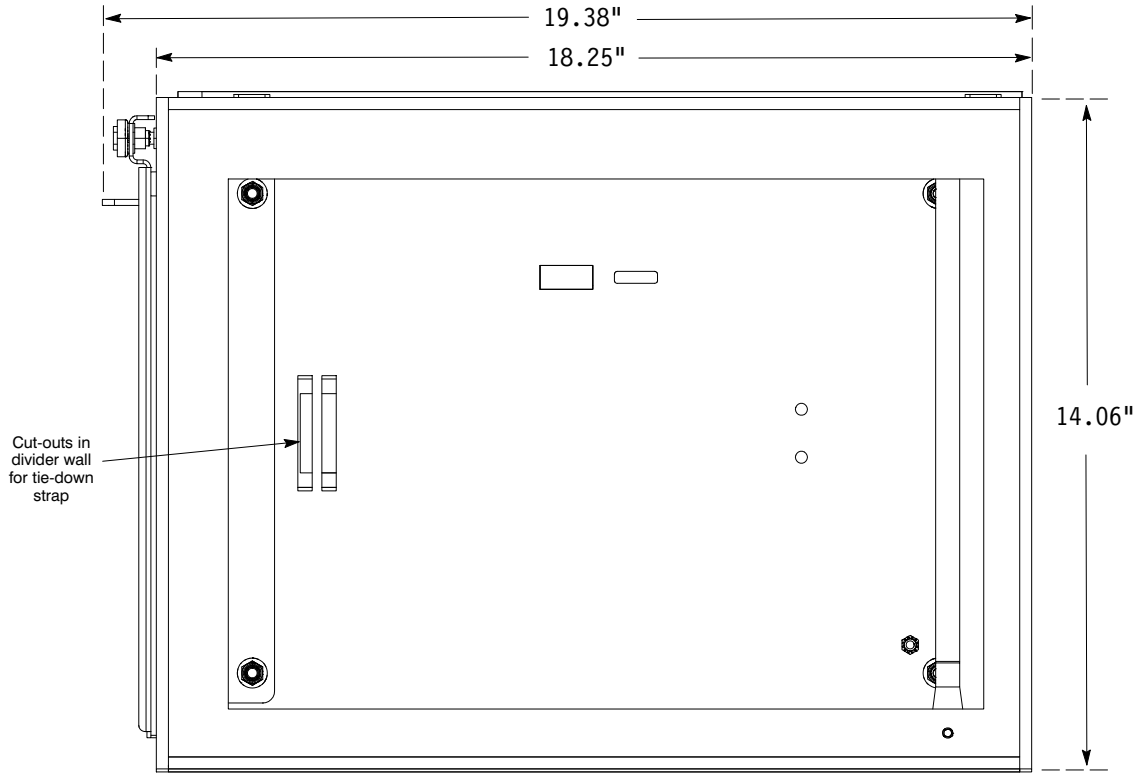


Figure 19. Right Side Boxer Battery Box, Panel Removed

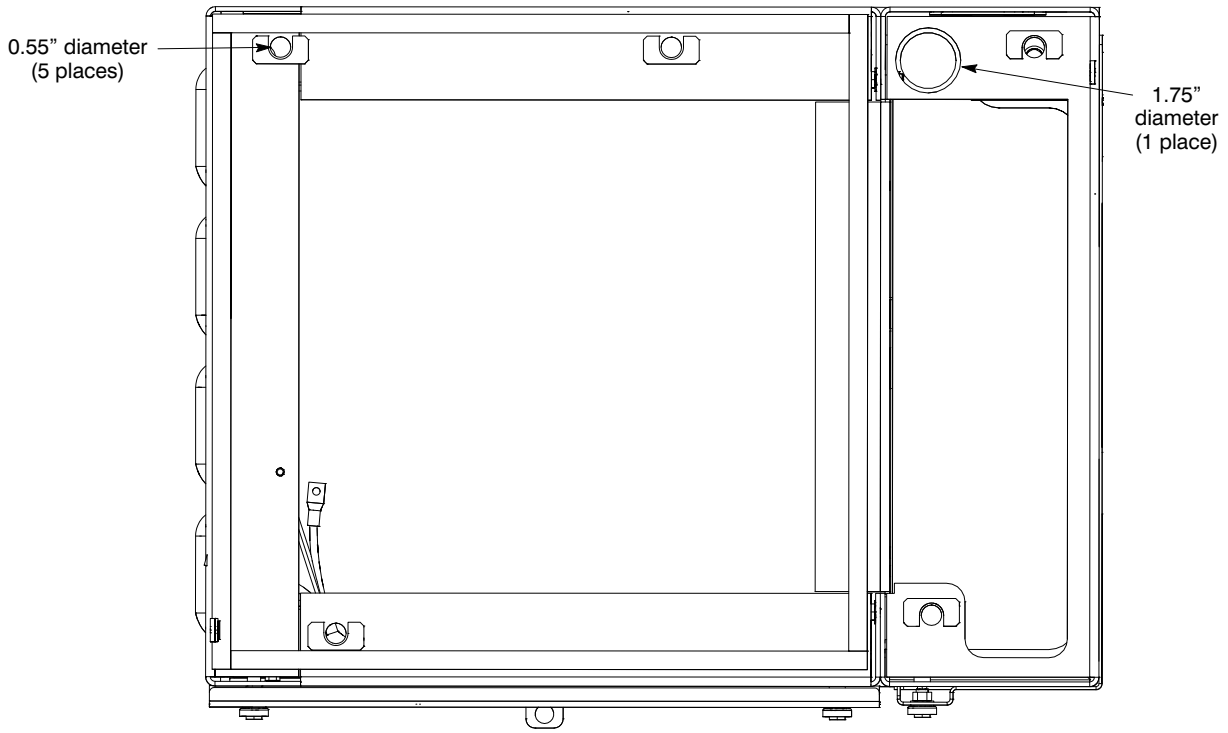


Figure 20. Top View, Battery Box

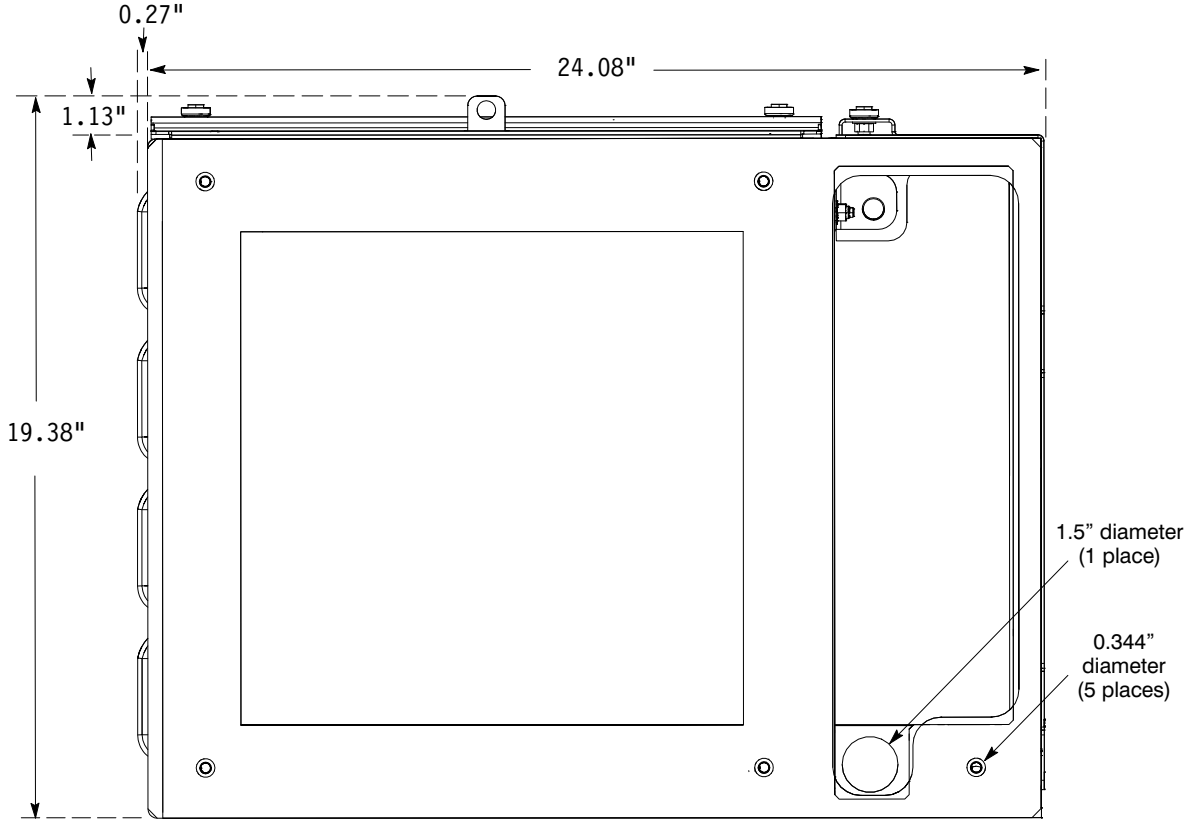


Figure 21. Bottom View, Battery Box

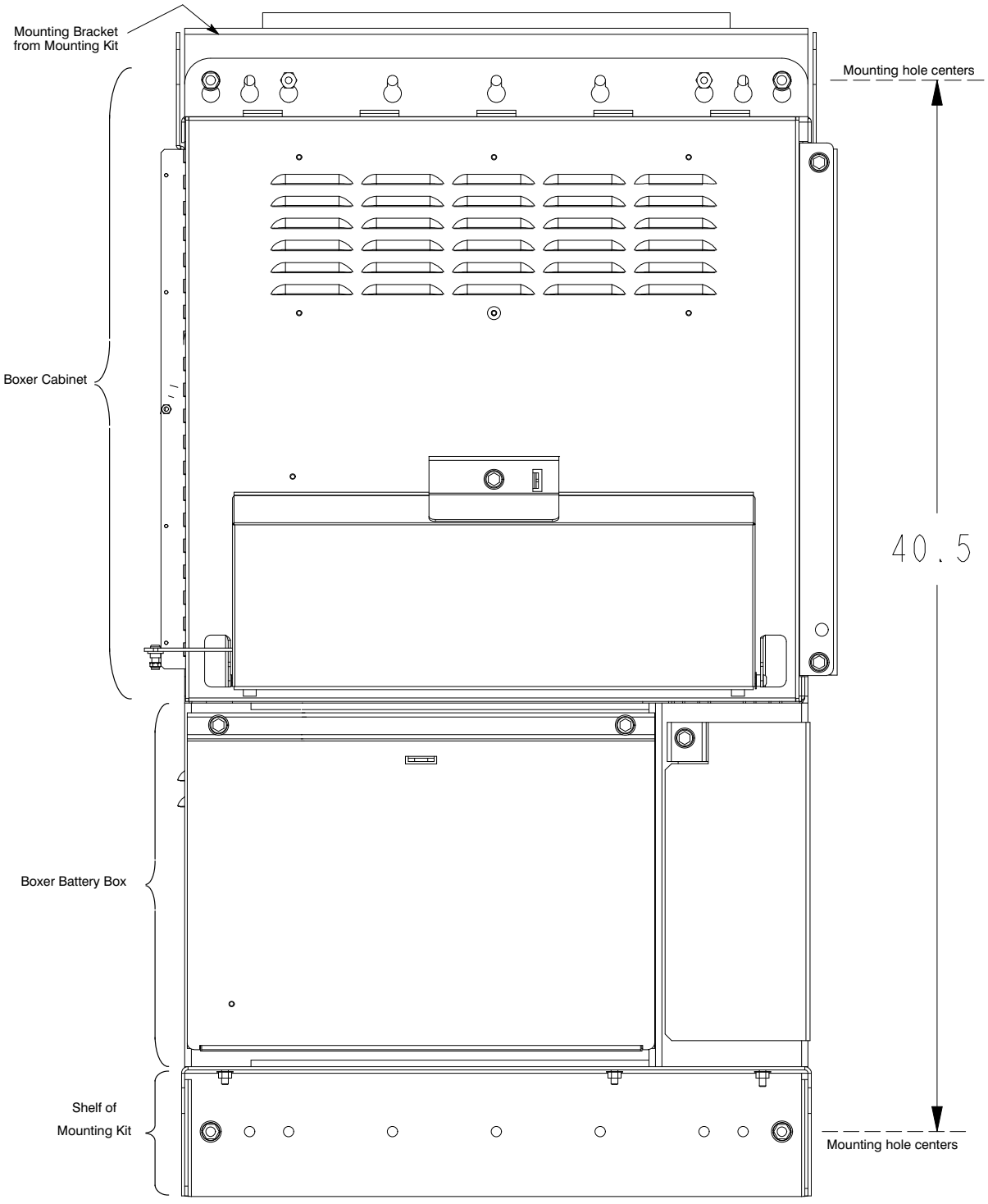


Figure 22. Front View of Boxer Cabinet, Battery Box, and Shelf Secured Together