Compaq Extended Runtime Module Kit

Installation Instructions

For Compaq UPS R12000 XR Models

Read Instructions Completely
Before Beginning Installation Procedures

COMPAQ

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About This Device

The ERM consists of two battery packs in a 4U chassis. When operating at the Compaq recommended 80 percent load, one ERM extends the available UPS runtime by up to fifteen minutes.

These instructions assist qualified personnel with the installation of the Compaq Extended Runtime Module (ERM). Save these instructions for future reference.

Important Safety Instructions

Before installing this product, read the *Important Safety Information* guide included with the ERM kit.

> ⚠ **WARNING**
> - **The installation of this product must be performed by individuals who are knowledgeable about the procedures, precautions, and hazards associated with AC and DC Power Products.**
> - **The ERM must be connected directly to the UPS by a qualified electrician.**
> - **The connection of the ERM to the terminals of the Uninterruptible Power System (UPS) must be performed by a qualified electrician.**
> - **There are no user-serviceable components inside.**

Installation Considerations

Weight

> ⚠ **WARNING: To reduce the risk of personal injury or damage to the equipment:**
>
> 84.4 kg
> 186 lb
>
> - **Evaluate the floor-loading requirements by a facilities engineer before installation.**
> - **Observe local occupational health and safety requirements and guidelines for manual material handling.**
> - **Obtain adequate assistance to lift and stabilize the product during installation or removal. The ERM will be unstable when not fastened to the rails.**
> - **Remove all batteries to reduce the overall weight of the product.**
> - **Use two people to insert battery packs into the ERM chassis.**

Table 1: Component Weights

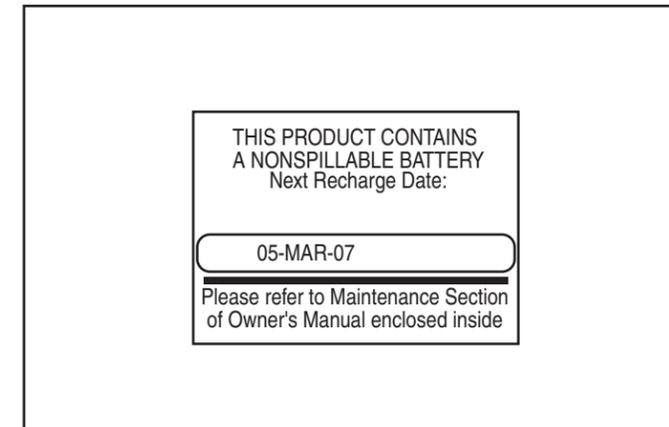| Item	Weight
Chassis	17.2 kg (38 lb)
Battery packs (2)	33.6 kg (74 lb) each
Total weight	84.4 kg (186 lb)

Position

> ⚠ **WARNING: To reduce the risk of personal injury or damage to the equipment, take the following precautions when installing the ERM.**
>
> - **The ERM must be installed at the bottom of the rack, with the UPS on top of the ERM. If placed in the rack with existing equipment, the rack must be reconfigured to allow installation of the UPS and ERM at the bottom of the rack.**
> - **The ERM must be mounted on the fixed rails included in the ERM kit. Use the Rack Template Tool shipped with the ERM kit, to align the rails.**

Preparing for Installation

Checking the Battery Recharge Date

Before unpacking the ERM, check the battery recharge date specified on the Battery Recharge Date Label affixed to the shipping carton.

> **IMPORTANT:** Do not use the batteries if the recharge date has passed. If the date on the Battery Recharge Date Label has passed without the batteries being recharged, contact a Compaq authorized service representative.

> THIS PRODUCT CONTAINS
> A NONSPILLABLE BATTERY
> Next Recharge Date:
>
> 05-MAR-07
>
> Please refer to Maintenance Section
> of Owner's Manual enclosed inside

Preparing the Site

> ⚠ **WARNING: To reduce the risk of electrical shock or personal injury while performing this procedure, use a Lockout/Tagout procedure to isolate the UPS from the AC branch circuit (AC mains). The Lockout/Tagout procedure should conform to local occupational safety and health regulations for the facility.**

To prepare the site:
1. Power down the UPS.
   a. Place the UPS in Standby mode by pressing the **Standby** button for three seconds. The load relays open and LED (1) begins to flash slowly.

   > **NOTE:** Pressing the **Standby** button for seven seconds reboots the UPS. The UPS recovers to the Standby mode.
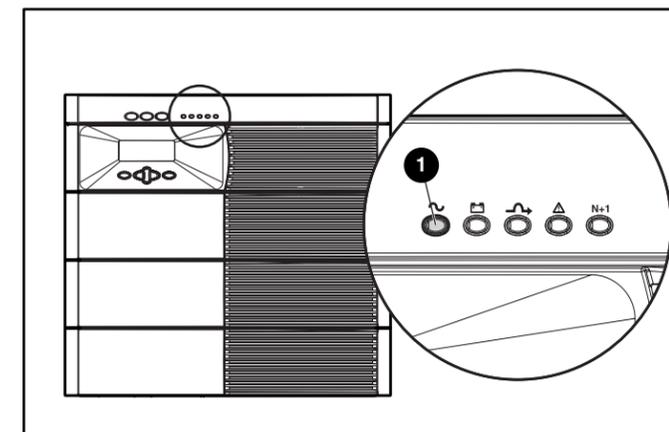
   b. Disconnect the AC mains by opening the switch or circuit breaker at the utility panel.
2. Remove all UPS electronic modules and battery modules. See the *Compaq Uninterruptible Power System R12000 XR Model Installation Instructions*.

Kit Contents

Documentation
- *Important Safety Information* guide
- *International Regulatory Compliance* guide

Rails
- Rails, with mounting hardware
- Rack template tool 4U (221282-021)

ERM
- ERM chassis
- Hardware
  — M4 Hex Nut with washer (1)
  — M4 x 10 Hex Screw (2)
  — M8 Hex Nut with Conical Washer (2)
- Battery packs (2)
- Front bezel

Cables
- UPS-to-ERM power cable set (283048-001)
- ERM-to-ERM power cable set (283049-001)

Tools and Materials Required

The following tools are needed:
- Torque wrench (8 to 160 lb-in capacity)
- #3 Phillips screwdriver bit
- Metric tools
  — 7 mm
  — 8 mm
  — 10 mm
  — 13 mm
  — 14 mm
- Multimeter

The following items are supplied with the Compaq rack:
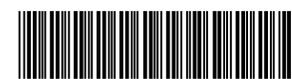- Screws
- Cage nuts
- Cage nut-fitting tool

Unpacking the ERM

Transport the packaged ERM to its installation location. Unpack the ERM near the rack where it will be assembled. Follow the unpacking instructions on the carton.
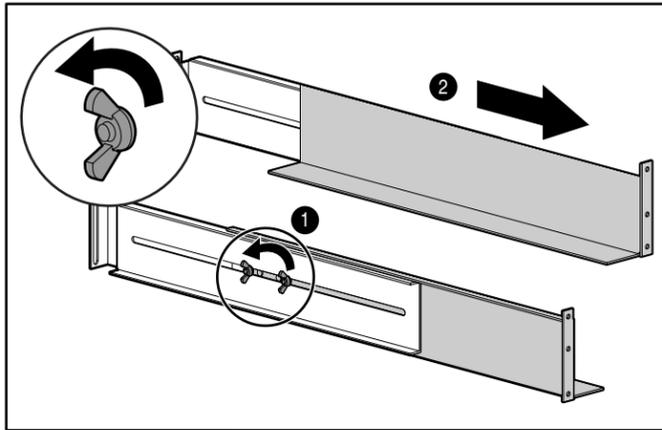
⚠ **WARNING:** The battery packs are charged from the factory; do not touch the metal contacts inside the connector.
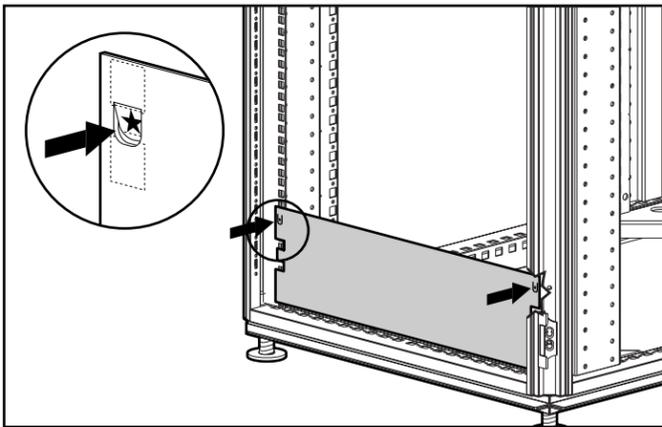
Mounting the Rails

The ERM must be mounted on the fixed rails supplied in this kit.
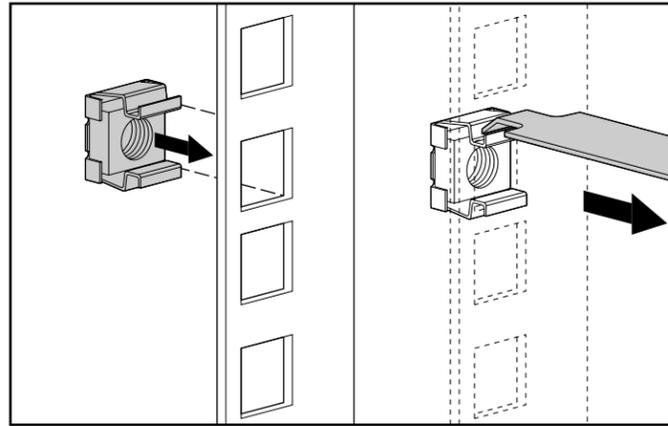
To mount the rails:

1. Loosen the wing nuts (1) and extend the brackets (2) to the desired length. Tighten the wing nuts slightly to stabilize the bracket.

2. Use the rack template tool to measure and mark the screw locations for the rails on the front and rear of the rack.

3. Use the cage nut tool to install the cage nuts in the rear rack-mounting rails.

4. Insert at least one screw through each rack-mounting rail and into the front of each rail.
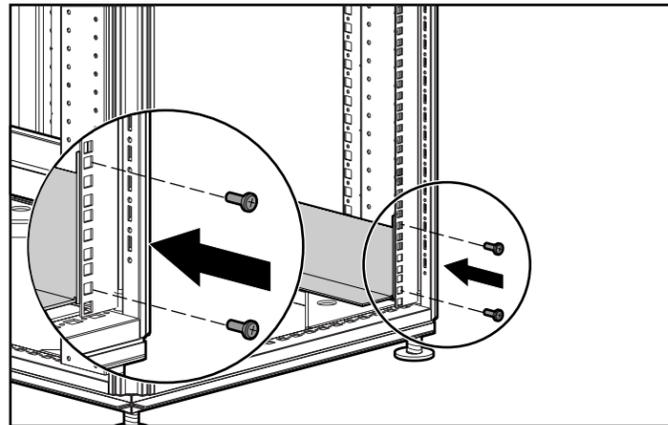
5. Insert the back screws into the cage nuts that were installed in step 4.
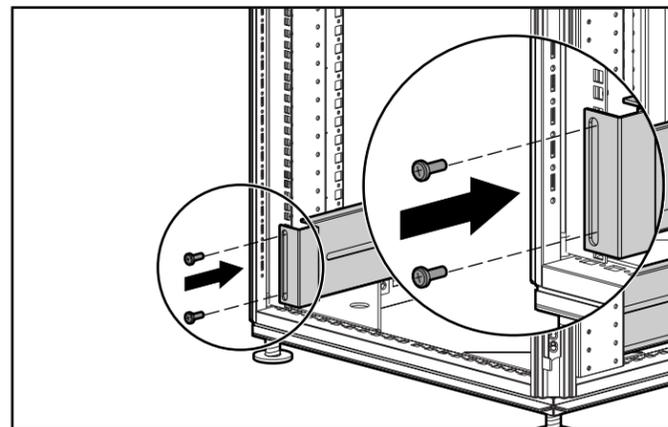
Installing the ERM in the Rack

Before attempting to install the ERM, review and adhere to all safety information provided in the "Installation Considerations" section of this document.
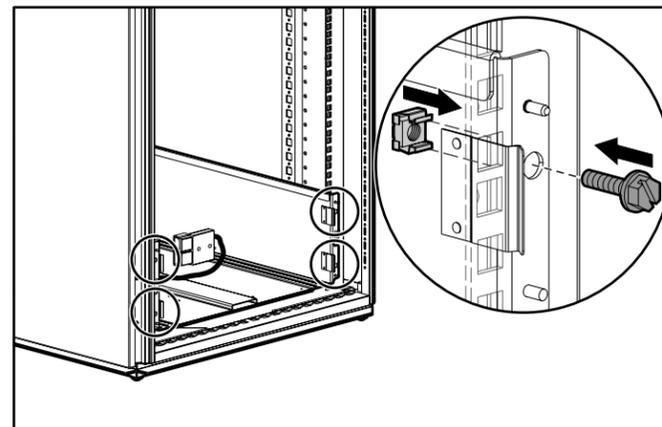
To install the ERM in the rack:

1. With one person on each side of the carton, remove the ERM chassis from the carton.

2. Gently lower the chassis to the floor in front of the rack.

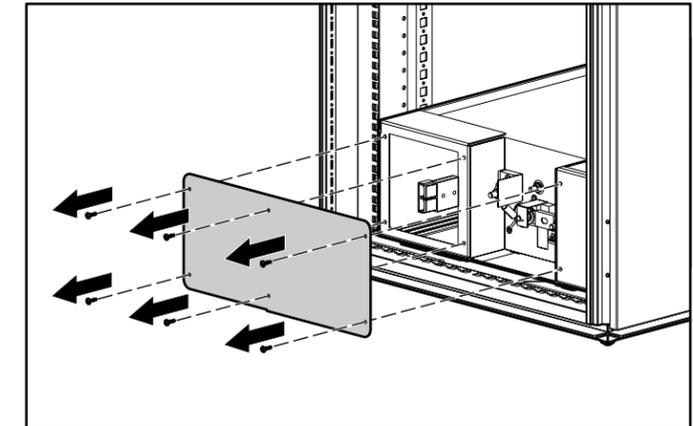3. With one person on each side, lift the chassis to rail level and slide into place.
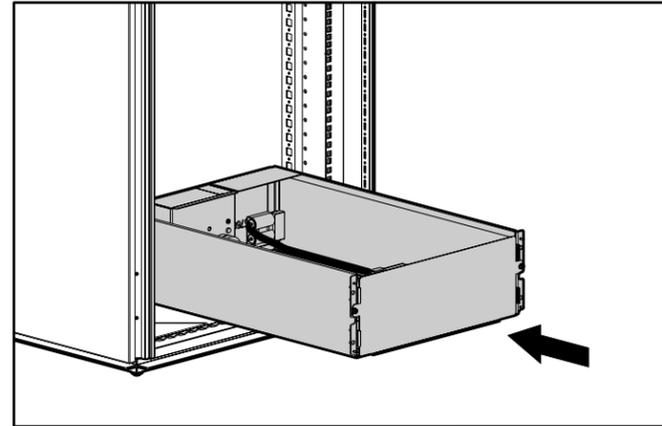
4. Remove the front panel from the ERM chassis.
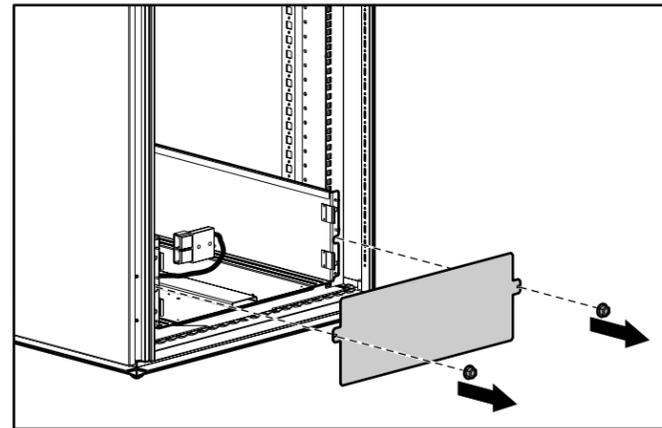
5. Secure the chassis to the rack using the screws and cage nuts supplied with the rack.

NOTE: After installing the ERM chassis, insert additional screws for additional support, if any screw holes are unoccupied.
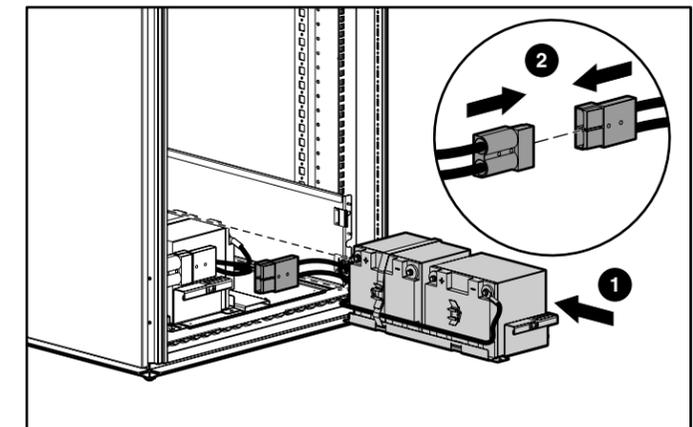
6. Remove the electrical access cover on the rear of the ERM chassis.

7. Insert the left battery pack (1) and connect the battery pack connector to the connector in the ERM chassis (2).
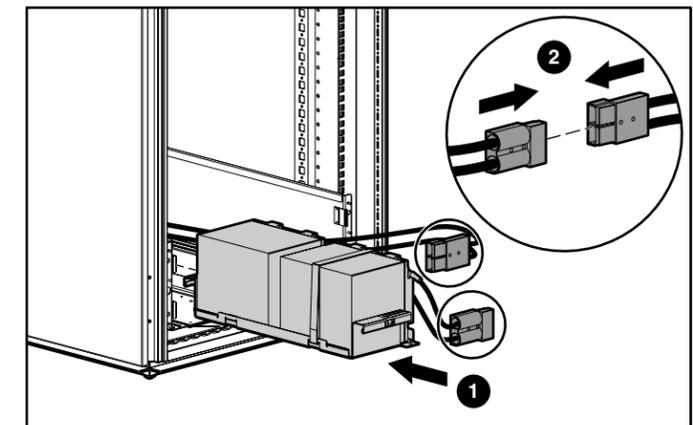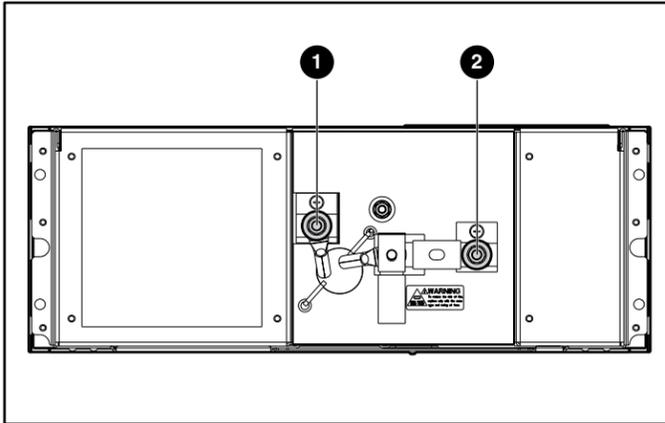
8. Insert the right battery pack (1) and connect the battery pack connector to the connector in the ERM chassis (2) through the rear opening.
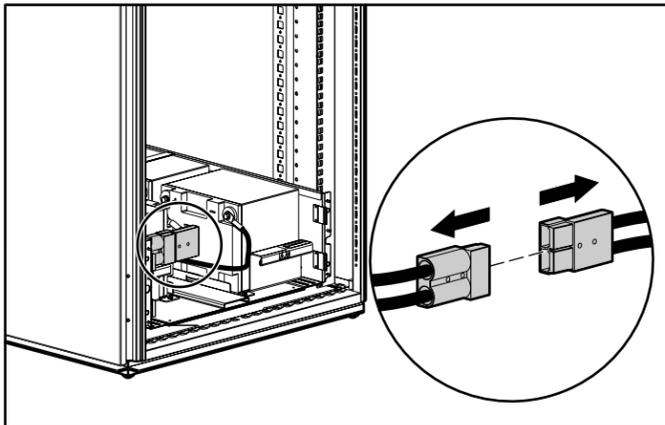
9. Verify the polarity of the DC voltage using a multimeter between terminals, positive (1) and negative (2), before wiring the ERM to the UPS.

⚠ **WARNING: If the polarity is reversed, contact Compaq for replacement of the ERM.**


10. Disconnect the two battery pack connectors to the ERM, first the left battery pack and then the right battery pack, through the rear opening.


NOTE: Refer to the *Compaq Uninterruptible Power System R12000 XR Model Installation Instructions* for directions on how to assemble the UPS.

11. Remove the terminal block cover from the UPS. Remove the screws (1), release the cover (2), and remove the cover (3). Set aside, but do not discard the cover.
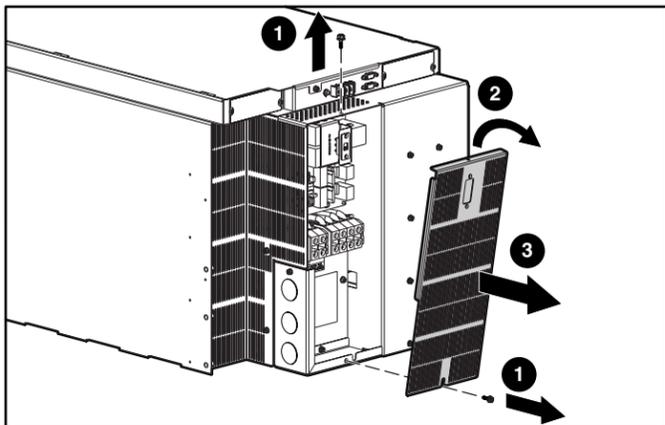

12. Remove the wiring port cover (2) by removing the screws (1). The UPS to ERM wiring port cover will drop out of the bottom of the UPS when the screws are removed.
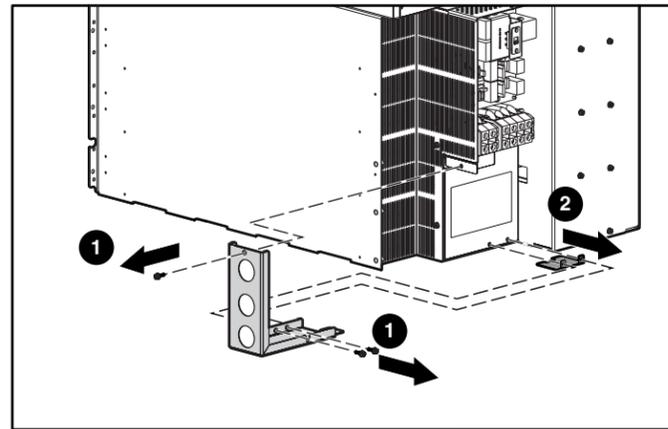

13. Remove the DC bus bar cover (2) of the UPS by unfastening the four nuts (1).
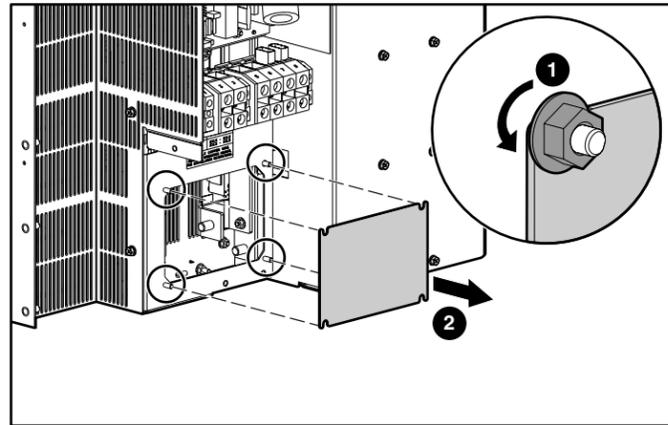
14. Connect the ERM to the UPS with the ERM-to-UPS power cable set included with the ERM kit. In order, connect the green/yellow cable (1) and torque the nut to 25 in-lbs (A) on the UPS and 75 in-lbs on the ERM (B). Connect the black cable (2) and torque the nuts to 160 in-lbs. Connect the red cable (3) and torque the nuts to 160 in-lbs.
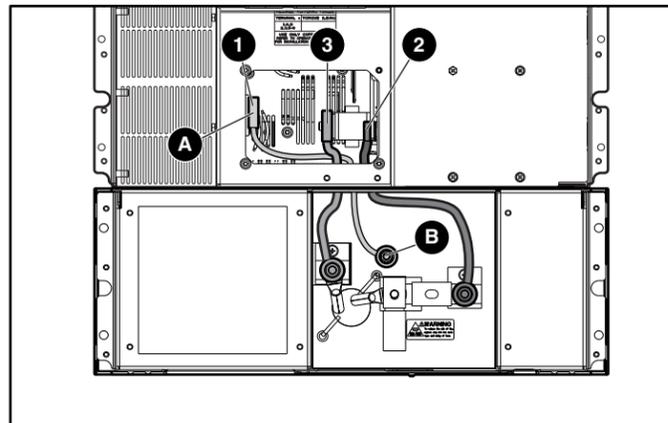

15. Connect a second ERM (if necessary) to the first ERM using the ERM-to-ERM power cable set included with the ERM kit. In order, connect the green/yellow cable (1) and torque the nut to 75 in-lbs. Connect the black cable (2) and torque the nuts to 160 in-lbs. Connect the red cable (3) and torque the nuts to 160 in-lbs.
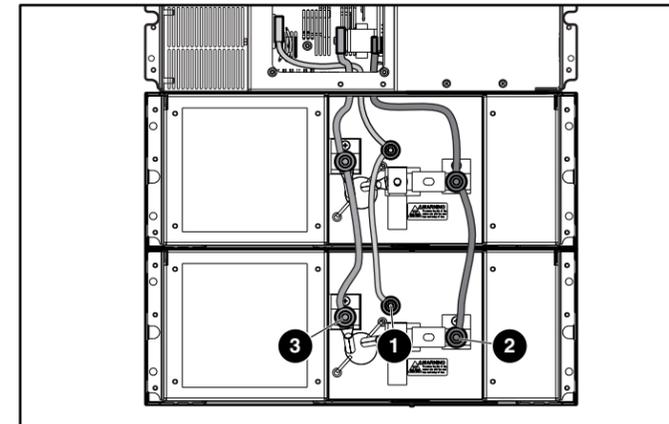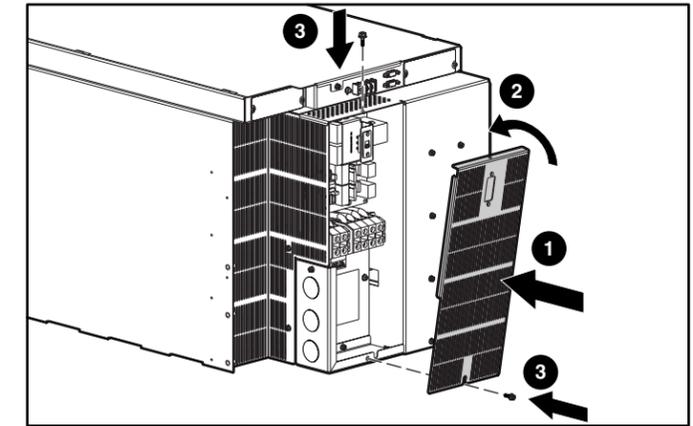

16. Replace DC bus bar cover (1) of the UPS by tightening the four nuts (2).
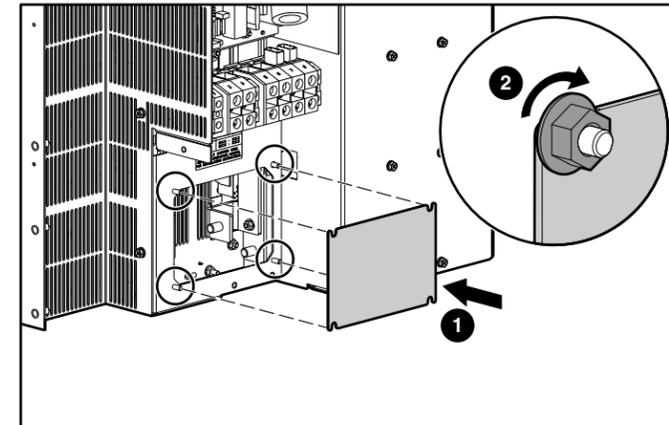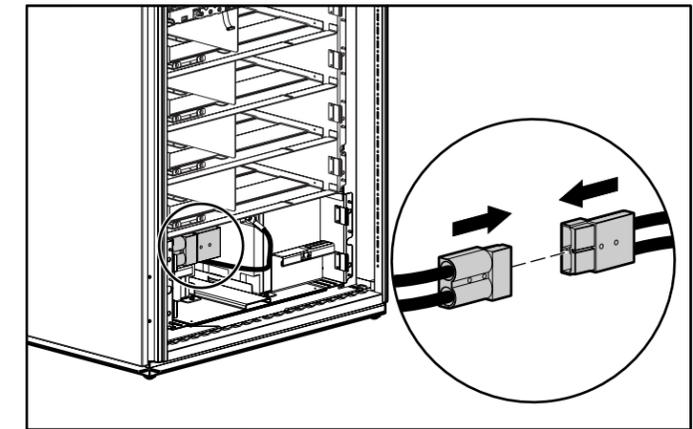

17. Replace the wiring port cover on the UPS. Insert the screw (1) first, then insert the remaining two screws (2).
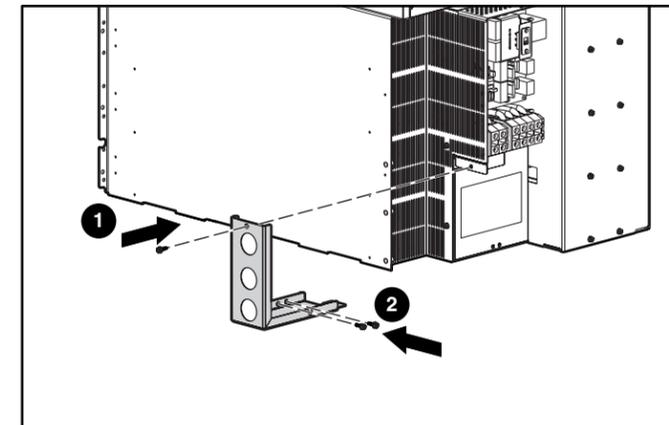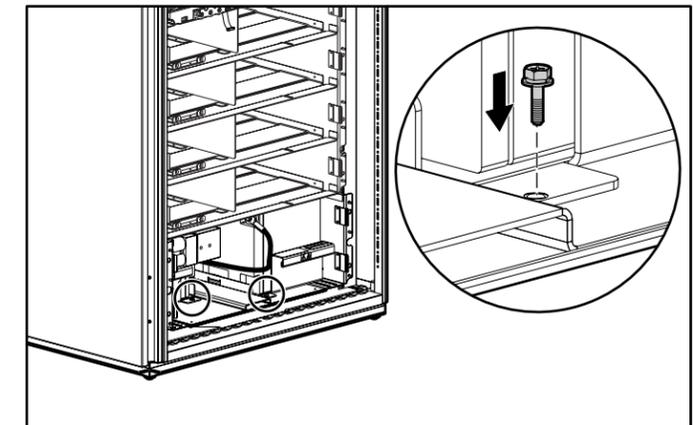

18. Replace the terminal block cover on the UPS (1), sliding it into place (2). Tighten the screws (3).
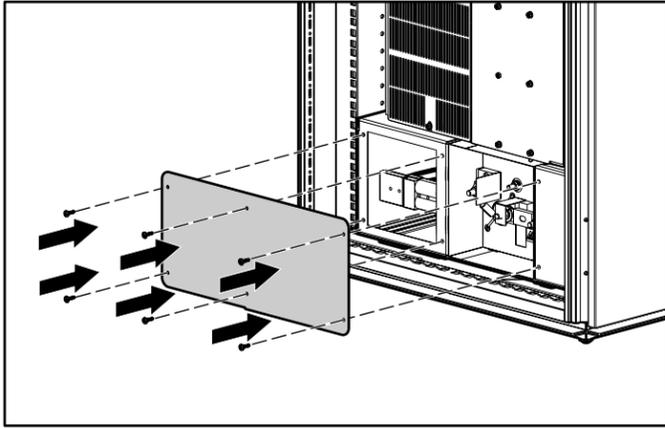

19. Connect the two battery pack connectors to the ERM, first the left battery pack and then the right battery pack, through the rear opening.

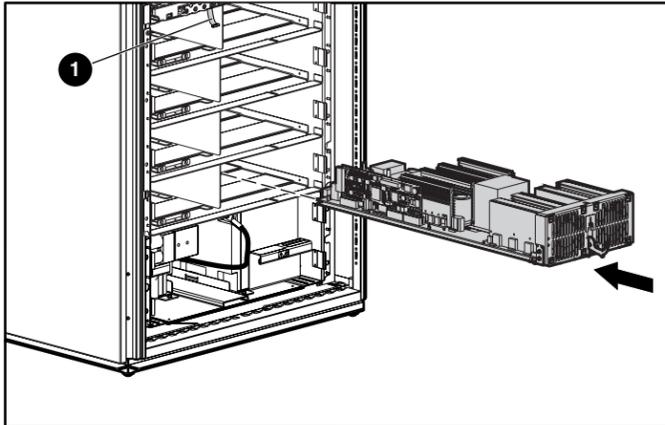20. Insert the screws to hold the battery packs in place.

21. Replace the electrical access cover on the rear of the ERM chassis.

22. Insert the electronics modules and battery modules into the UPS. See the *Compaq Uninterruptible Power System R12000 XR Model Installation Instructions*.
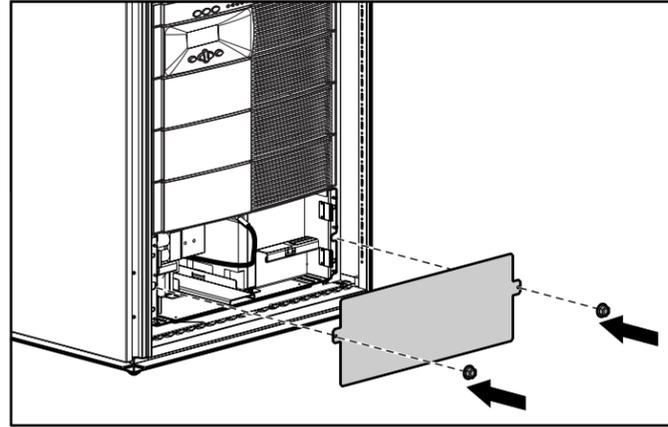
⚠ **CAUTION:** Do not damage the LED power cable (1) when inserting the top battery pack.
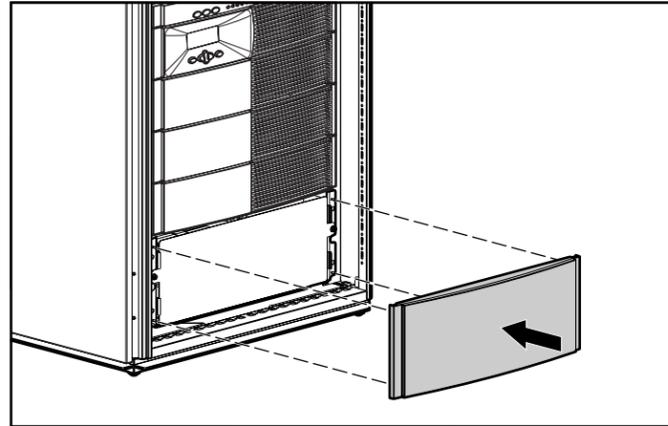

Completing the ERM Assembly

Attaching the Bezels

1. Attach the front panel of the ERM chassis with two screws.

2. Attach the ERM bezel to the front of the chassis. Snap the bezel into place to secure it.

Setting up the UPS and Commissioning the ERM

To set up the UPS to recognize the ERM, scroll through the LCD menu to the System Setup submenu. The ERM Setup and Commission Battery configuration needs to be set. See the Operation chapter of the *Compaq Uninterruptible Power System R12000 XR User Guide* for more information on using the UPS front panel controls and LCD display.

Charging the Batteries

With the UPS in Standby mode, allow the ERM batteries to charge before placing the UPS into service. The battery status can be monitored using the LCD display.

IMPORTANT: The battery packs will charge to:

- 80% of their capacity within 3 hours
- 100% of their capacity within 48 hours

Compaq recommends that you allow the batteries to charge for at least 24 hours before supplying backup power to your devices.