H9A10 (600 mm) Cabinet

Installation/Owner's Guide

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The postpaid Reader's Comments form at the end of this document requests your critical evaluation to assist in preparing future documentation.

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Preface

Overview

This guide provides the information necessary to install the H9A10 (600 mm) Cabinet. This guide *does not* provide information concerning systems that can be installed in the cabinet. For information concerning systems installed in the cabinet, refer to the respective documentation shipped with the system.

Intended Audience

The instructions in this guide are for Digital Customer Service representatives and customer maintenance personnel who are familiar with computer hardware and operating systems. Personnel should be experienced and trained in installing computer and related equipment.

How to Use This Guide

Read all of this guide before installing the H9A10 (600 mm) Cabinet. As mentioned earlier, for information concerning systems installed in the cabinet, refer to the respective documentation shipped with the system.

Before installation, review the warranty. The terms of the warranty agreement with Digital may require that a qualified Digital Customer Service representative install the system. Contact your local Digital representative if you have any questions.

Organization

This guide is organized as follows:

Chapter 1, Introduction – Provides an overview of the H9A10 (600 mm) Cabinet features and specifications.

Chapter 2, Installation – Provides site preparation, unpacking, and installation information.

Appendix A, Field Replaceable Units (FRUs) – Provides a list of the field replaceable units (FRUs) for the H9A10 (600 mm) Cabinet.

Conventions

This guide uses the following conventions:

Convention	Meaning
Note	A note calls the reader's attention to any item of information that may be of special importance.
Caution	A caution contains information essential to avoid damage to the equipment.
Warning	A warning contains information essential to the safety of personnel.

Safety Symbol

The following symbol appears on the power controller. Please review its definition below:

This Dangerous Voltage warning symbol indicates a risk of electric shock and indicates hazards from dangerous voltage.

1
Introduction

1.1 Description

The H9A10 (600 mm) Cabinet (Figure 1–1) is a low-cost, computer-equipment enclosure system that meets the Electronic Industries Association (EIA) standard 310C and the International Electrotechnical Commission (IEC) 297 standards and can accommodate a slide-mounted chassis that fits into a standard 48.26-cm (19-in.) rack. The system is available with rails that have either the English RETMA (Radio Electronics Television Manufacturers Association) or metric RETMA rail-hole pattern.

Depending on the model ordered, the cabinet may have the following factory installed features:

- Equipment mounting rails with the English RETMA rail-hole pattern or the metric RETMA rail-hole pattern
- Front trim kit that provides a finished look to the front opening of the cabinet, or a front door kit that extends the front of the cabinet out 1.38 cm (3.5 in.) for equipment clearance and front door support. Both versions of the cabinet are shown in Figure 1–1
- Front door lock

Other cabinet features include the following:

- Vented top cover — This aids in the ventilation of the system.
- Removable vented rear door — This provides additional ventilation and controlled access to the rear of the cabinet. The door is not hinged.
- Four nonlocking casters — These facilitate the placement of the cabinet. The front two casters swivel. The rear two casters are fixed.
- Adjustable leveling feet — These are used to stabilize and secure the cabinet at the installation site.
- Stabilizer bar — This is used to provide cabinet stability when installing or sliding equipment out of the cabinet.

- Equipment interlock kit — This is a vertical bar at the rear of the cabinet that allows only one slide-mounted device to be pulled out of the cabinet at any one time.

  Note

  The equipment installed must have an interlock bracket to work with the interlock kit.

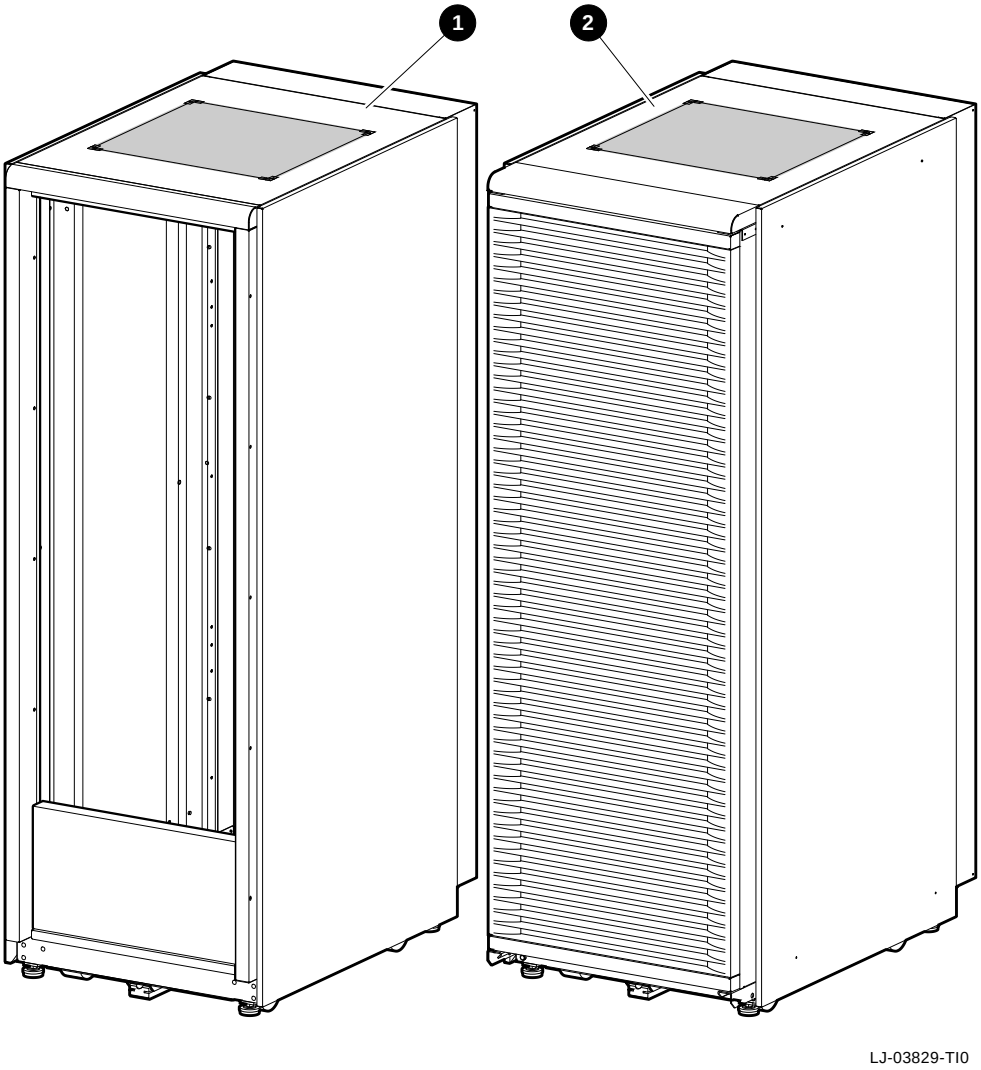
- Two single-phase H7600-AA (120 Vac) or H7600-AB (240 Vac) power distribution units (PDU) — Each power distribution unit provides ten (10) ac power outlets.

  or

  Two single-phase 877-DA (120 Vac) or -E (240 Vac) power controllers — Each power controller provides six (6) ac power outlets.

- Two power cords — Depending on the power controllers or power distribution units shipped in the cabinet, the two power cords from the power controllers or power distribution units have either 5-30P plugs for 120-Vac operation or 6-20P (H7600-AB) or 6-30P (877-E) plugs for 240-Vac operation in the U.S.A., Canada, and Japan. If the plugs are not compatible to your power-source receptacle, contact your Digital Customer Service office for assistance.

Figure 1–1 H9A10 Cabinet



❶ Cabinet with front trim kit

❷ Cabinet with front door kit

1.2 Specifications

Specifications for the H9A10 (600 mm) Cabinet are as follows:

Physical	
Height, overall	170.0 cm (66.9 in.)
Width, overall	60.0 cm (23.6 in.)
Depth, overall	87.4 cm (34.0 in.)
Maximum vertical rackmounting space	155.0 cm (metric RETMA [1]) 59.5 in. (English RETMA [2])
Maximum vertical rackmounting space (with power controllers installed)	153.5 cm (metric RETMA [1]) 54.25 in. (English RETMA [2])
Horizontal rack width	Standard 48.26-cm (19-in.) EIA rail spacing [3]
Weight	
- Cabinet with two power controllers	126 kg (280 lb)
- Cabinet with two power controllers plus packing material	159.3 kg (354 lb)
- Fully configured (filled) cabinet	Up to 576 kg (1,280 lb)
- Fully configured (filled) cabinet plus packing material	Up to 609.3 kg (1,354 lb)
Casters, swivel, nonlocking:	
Diameter:	7.62 cm (3 in.)
Maximum capacity:	225 kg (500 lb)
Casters, fixed, nonlocking:	
Diameter:	7.62 cm (3 in.)
Maximum capacity:	225 kg (500 lb)
Enclosure finish	Painted
Electrical	
AC input voltage for 877-DA power controller or H7600-AA PDU	120 Vac, 80 to 135 Vac, single-phase, 3-wire
AC input voltage for 877-E power controller or H7600-AB PDU	240 Vac, 180 to 264 Vac, single-phase, 3-wire
AC load	24 A, maximum
Input line frequency range	47 to 63 Hz
Input power at full load	5,760 W, maximum

[1]Refers to the cabinet version that has the rail-hole pattern compliant with the metric RETMA standard

[2]Refers to the cabinet version that has the rail-hole pattern compliant with the English RETMA standard

[3]Depending on the cabinet model ordered, the rail-hole pattern may be compliant with either the English RETMA or the metric RETMA standard.

Electrical (cont)	
Input power at no load	10 W, maximum
Power cord	Two (2), 120 Vac with 5-30P connectors or two (2), 240 Vac with 6-20P (H7600-AB) or 6-30P (877-E) connectors

2
Installation

2.1 Introduction

This chapter provides the following information:

- Tools Required (Section 2.2)
- Site Planning (Section 2.3)
- Unpacking (Section 2.4)
- Installation Procedures (Section 2.5)

2.2 Tools Required

The tools needed to install the H9A10 (600 mm) Cabinet are:

- Utility knife
- Phillips screwdriver
- 5/8-inch box wrench or adjustable wrench

2.3 Site Planning

The cabinet requires a space of 60.0 cm (23.6 in.) by 87.4 cm (34.0 in.). In addition, the cabinet requires a clearance of 91.44 cm (36.0 in.) at both the front and rear of the cabinet for service. This may be greater depending on the distance that a system may be slid out of the cabinet.

Installation

Warning

High Leakage Current — An insulated earthing conductor that is identical in size, insulation material, and thickness to the earthed and unearthed branch-circuit supply conductors (except that it is green with or without one or more yellow stripes) is to be installed as part of the branch circuit that supplies the unit or system. The earthing conductor described is to be connected to earth at the service equipment or, if supplied by a separately derived system, at the supply transformer or motor-generator set.

The attachment-plug receptacles in the vicinity of the unit or system are all to be of an earthing type, and the earthing conductors serving these receptacles are to be connected to earth at the service equipment.

Warning

Use sufficient personnel when unloading the cabinet from the pallet or moving the cabinet to a new location. The cabinet weighs 126 kg (280 lb) empty, and can weigh up to 576 kg (1,280 lb) fully configured.

For site preparation details concerning the system devices installed or the systems to be installed in the cabinet, refer to the documentation for those systems.

2.4 Unpacking

The cabinet is shipped on a wooden pallet. Proceed as follows to unpack the cabinet:

1. Position the pallet with the cabinet in an area that provides sufficient workspace for unpacking. Ensure that there is sufficient clearance in front of the pallet (marked with a large F) to roll the cabinet down the ramps.
2. Refer to Figure 2–1. Cut and remove the plastic wrapping ❶ that secures the corner posts ❷ and the carton ❸ to the cabinet. The carton contains the two ramps.
3. Remove the corner posts ❷ and the carton ❸ from the pallet ❹.

Caution

In the next step, take care not to damage the cabinet finish when removing the shrinkwrap.

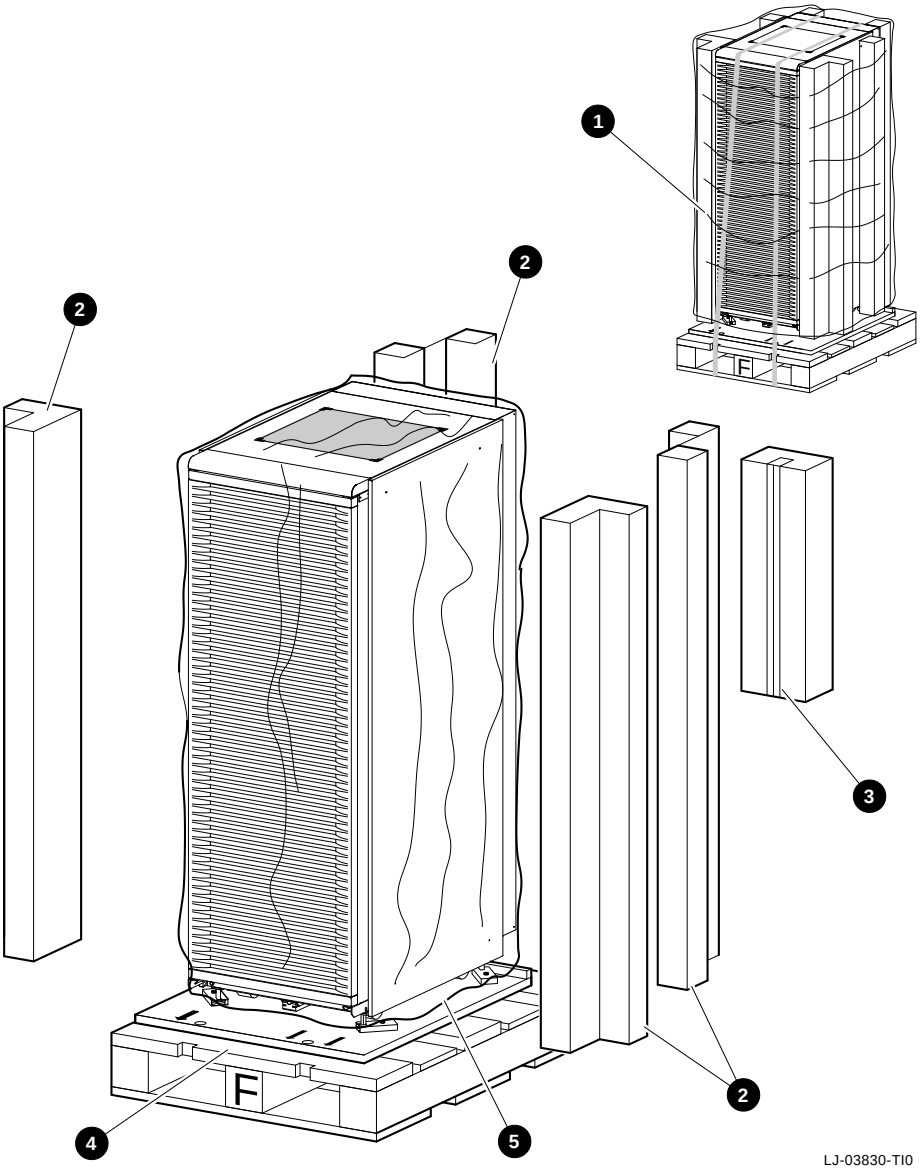
4. Remove the plastic bag ❺ covering the cabinet.
5. Check the cabinet and the associated equipment for any external damage. Report any damage to Digital Customer Service or a Digital sales office and to the responsible freight carrier.

Note

Keep all packing material and receipts in case a damage claim is filed.

Installation

Figure 2–1 Unpacking the Cabinet



6. Refer to Figure 2–2. Remove the four shipping bolts ❻ and brackets ❼ that secure the four cabinet leveler feet ❽ to the pallet ❹.

Note

The ramps attach to the front of the pallet. Therefore, the cabinet will have to be rolled frontwards down the ramps.

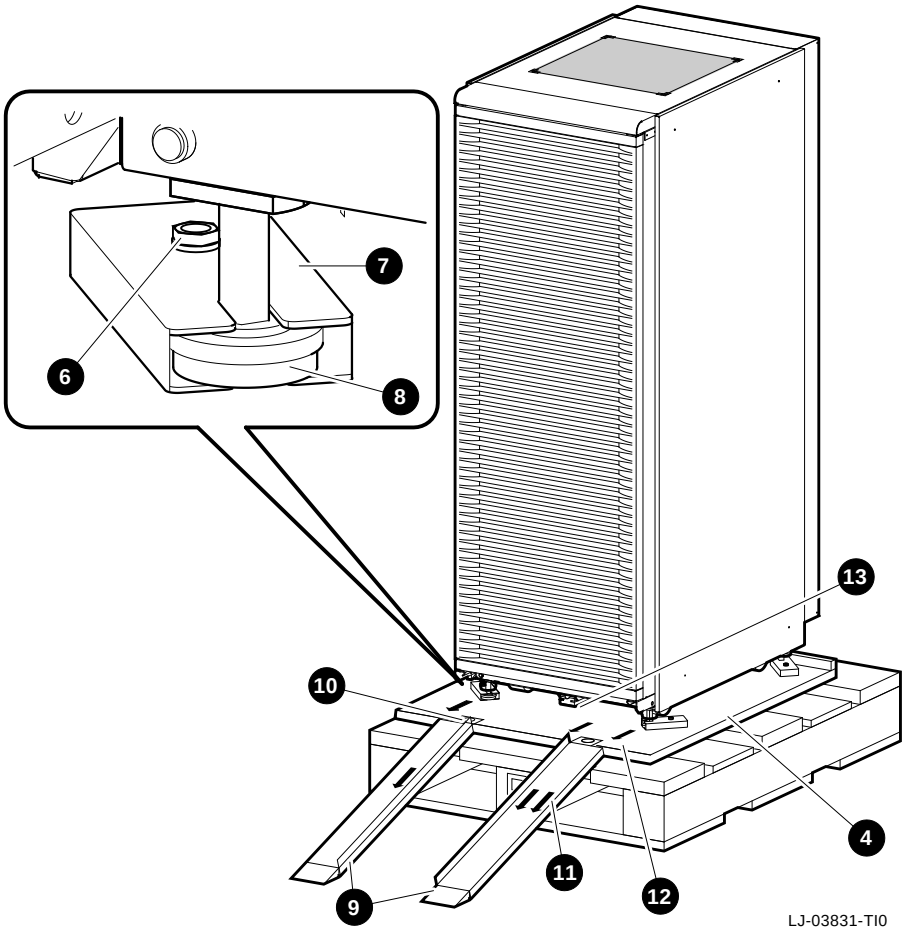
7. Remove the ramps ❾ from the shipping carton and set the ramps in the holes ❿ provided at the front of the pallet ❹. Ensure that the arrows ⓫ on the ramps match the pallet arrows ⓬ as shown in Figure 2–2.

Caution

In the next step, the leveler feet must be fully retracted to prevent contact with the ramp or the floor when the cabinet is unloaded from the pallet.

8. Adjust the four cabinet leveler feet ❽ and the leveler foot on the stabilizer bar ⓭ to the maximum upward position.

Figure 2–2 Installing the Ramps



Warning

In the following step, use sufficient personnel to move the cabinet off the pallet. The cabinet weighs 126 kg (280 lb) empty, and can weigh up to 576 kg (1,280 lb) fully configured.

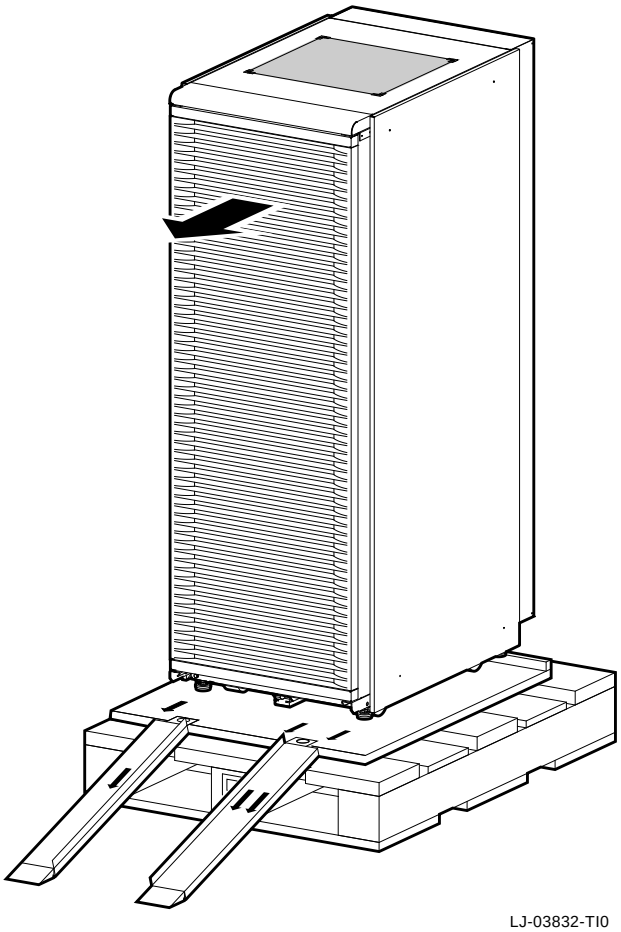
Equipment installed in the cabinet can make the cabinet top heavy or cause it to accelerate rapidly down the ramps if not restrained. Be prepared to guide and control the motion of the cabinet.

9. Refer to Figure 2–3 and roll the cabinet down the ramps using sufficient personnel for safety.
10. Wheel the cabinet to the desired location.
11. Adjust the leveler feet downward so that the cabinet is level and the load is removed from the casters.

Caution

Ensure that the leveler feet extend enough to carry the load of the cabinet so that the casters spin freely. If not, damage to the casters will result over an extended period of time.

Figure 2–3 Deskidding the Cabinet



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2.5 Installation Procedures

During the installation of the cabinet, one or more of the following procedures may be needed:

- Removing and Replacing the Rear Door (Section 2.5.1)
- Removing and Replacing the Front Door Latch Bracket (Section 2.5.2)
- Removing and Replacing the Front Filler Panels (Section 2.5.3)
- Adjusting the Stabilizer Bar (Section 2.5.4)
- Using the Interlock System (Section 2.5.5)
- Removing and Replacing the Power Distribution Unit (Section 2.5.6)
- Removing and Replacing the Power Controller (Section 2.5.7)

2.5.1 Removing and Replacing the Rear Door

The rear door provides access into the rear of the cabinet. To remove the rear door, refer to Figure 2–4 and proceed as follows:

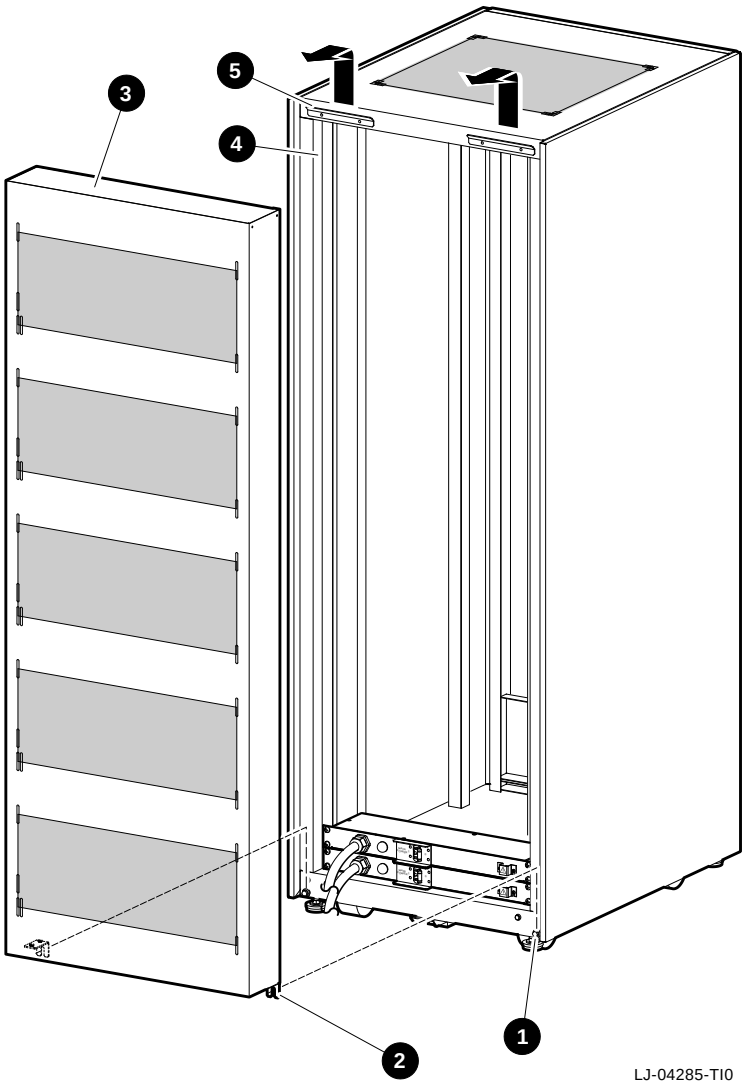
Removal

1. Loosen the two M6 screws ❶ securing the tabs ❷ on the rear door ❸ to the cabinet ❹.
2. Grasp both sides of the rear door ❸ about midway up the door. Then lift the door off and away from the two brackets ❺ and the M6 screws ❶.
3. Place the rear door ❸ aside and out of the way.

Replacement

To replace the rear door, reverse the removal procedure, steps 1 through 3.

Figure 2–4 Removing and Replacing the Rear Door



2.5.2 Removing and Replacing the Front Door Latch Bracket

To remove the front door latch bracket, refer to Figure 2–5 and proceed as follows:

Removal

Remove the two 8-32 screws ❶ and two 8-32 kepnuts ❷ that secure the front door latch bracket to the cabinet frame.

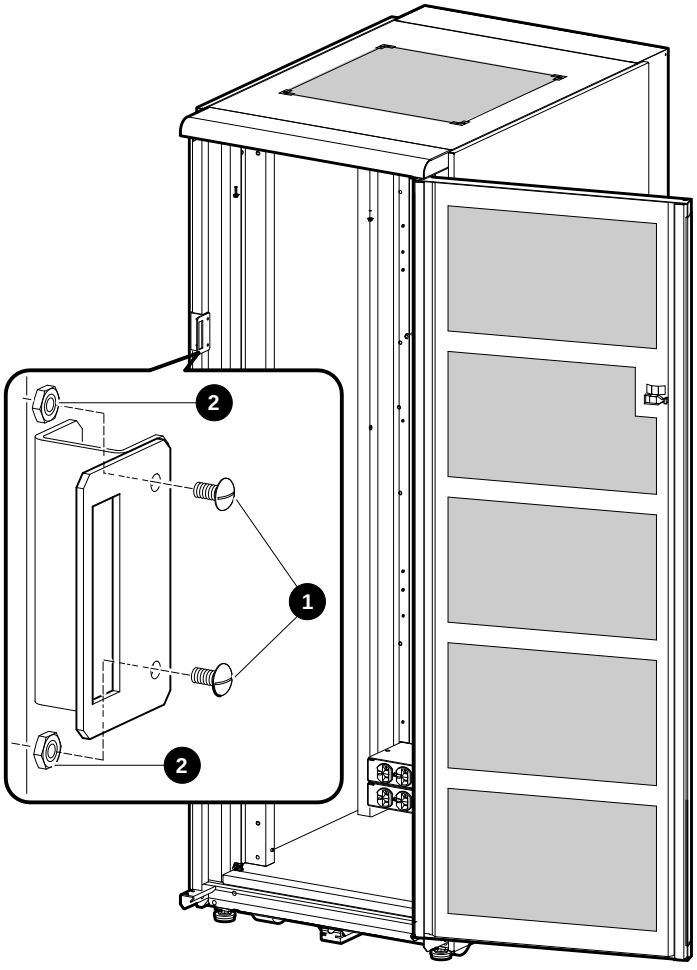
Replacement

To replace the front door latch bracket, align the two holes on the front door latch bracket with the two holes on the cabinet frame, and secure it in place with the two 8-32 screws ❶ and two 8-32 kepnuts ❷.

Note

The front door latch bracket prevents the left-side access door on an AlphaServer 2100 RM series system installed in the top of the H9A10 cabinet from being fully opened, and must be removed to allow access.

Figure 2–5 Removing and Replacing the Front Door Latch Bracket



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2.5.3 Removing and Replacing the Front Filler Panels

To remove a front filler panel, refer to Figure 2–6 and proceed as follows:

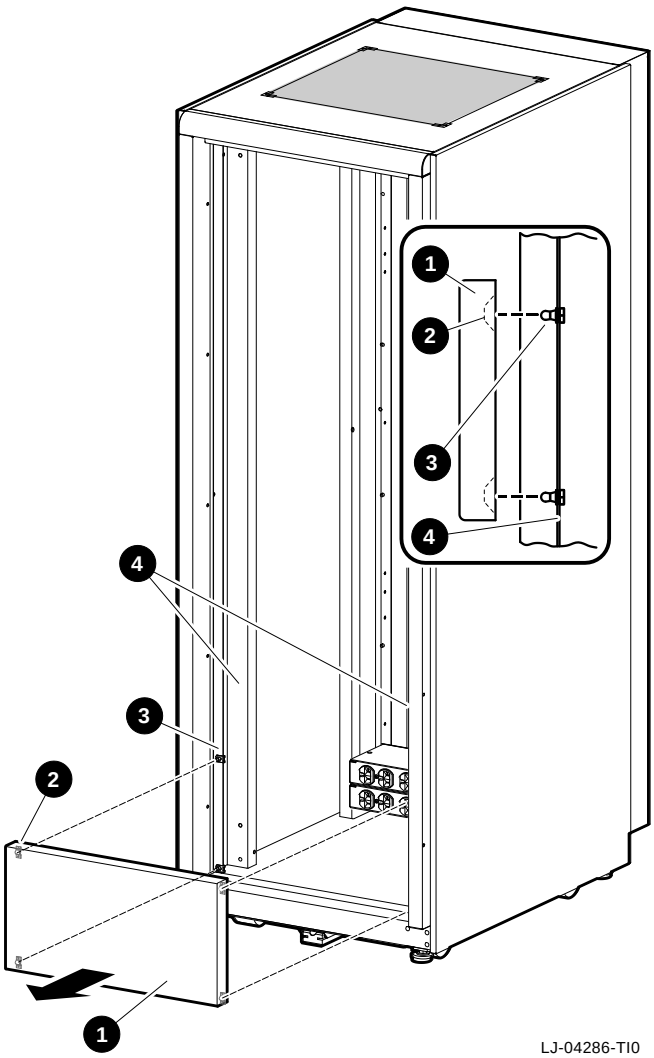
Removal

Grasp the front filler panel ❶ on both sides and then pull straight back away from the cabinet.

Replacement

To replace a front filler panel ❶, align the sockets ❷ on the front filler panel (refer to the exploded view) with the appropriate ball studs ❸ on the rails ❹ and push the panel into place.

Figure 2–6 Removing and Replacing the Front Filler Panels



2.5.4 Adjusting the Stabilizer Bar

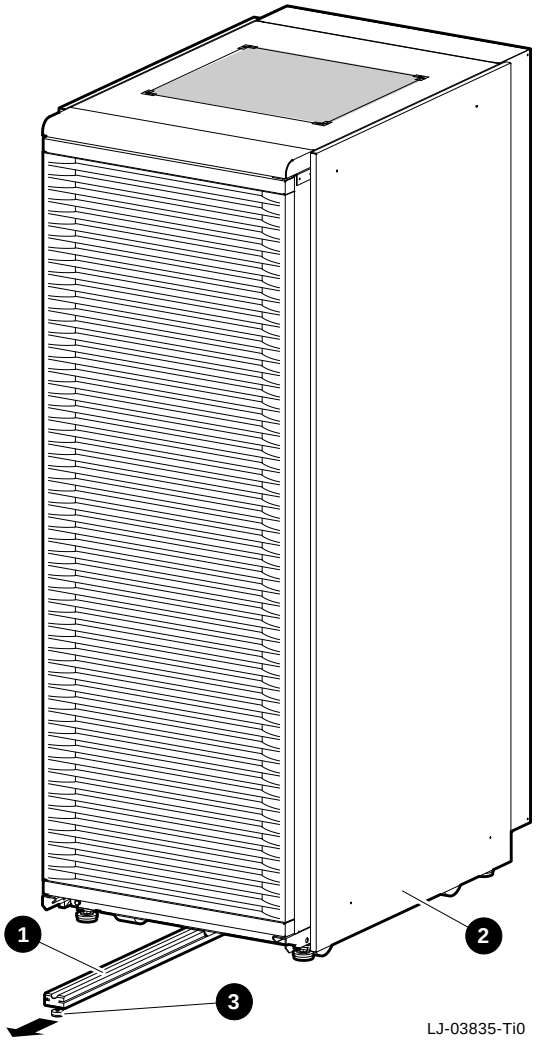
The stabilizer bar ❶ pulls straight out from the bottom front of the cabinet ❷ as shown in Figure 2–7. When the stabilizer bar is fully extended, adjust the foot ❸ at the end of the stabilizer bar until it touches the floor.

Warning

The stabilizer bar must be fully extended before any system is extended out of the cabinet on its slides.

The H9A10 (600 mm) Cabinet can hold several system configurations. The amount of force required to tip or make the cabinet unstable differs with each configuration.

Figure 2–7 Pulling Out and Adjusting the Stabilizer Bar



2.5.5 Using the Interlock System

The interlock system (refer to Figure 2–8) helps prevent cabinet instability by allowing only one system at any one time to be pulled out of the cabinet.

The interlock system consists of a vertical bar ❶ on which are mounted actuator latches ❷ for each product installed in the cabinet. These actuator latches engage the interlock actuator bracket ❸ on the rear of rackmount systems. When a rackmount system is pulled out of the cabinet, the actuator latches ❷ rotate to prevent any other rackmounted system that has an interlock actuator bracket from being pulled out of the cabinet. The expanded view (A) shows the position of the actuator latches when all systems are pushed into the cabinet. The expanded view (B) shows the position of all actuator latches after one system has been pulled out.

If additional products are installed into the cabinet, actuator latches for those products should be installed. To install actuator latches, proceed as follows:

1. Remove the screws securing the bottom mounting bracket to the cabinet ❹.
2. Slide the mounting bracket off the bottom of the vertical bar ❶.
3. Slide the stabilizer bracket ❺ for the new product onto the bottom of the vertical bar.
4. Slide the actuator latch ❷ for the new product onto the bottom of the vertical bar.
5. Replace the bottom mounting bracket ❹ and install the screws removed in step 1 but *do not* tighten them.
6. Position the stabilizer bracket so that the bottom hole in the stabilizer bracket ❻ aligns with the RETMA rail hole adjacent to the bottom of the installed product. This may require the loosening and sliding of other latches and stabilizer brackets to accommodate the new configuration.
7. Place the nut plate behind the RETMA rail and install and tighten the screws provided to secure the stabilizer bracket.
8. Position the new actuator latch ❷ to properly engage the product, and tighten the set screws to secure the latch.
9. Now tighten the screws to secure the bottom mounting bracket ❹.

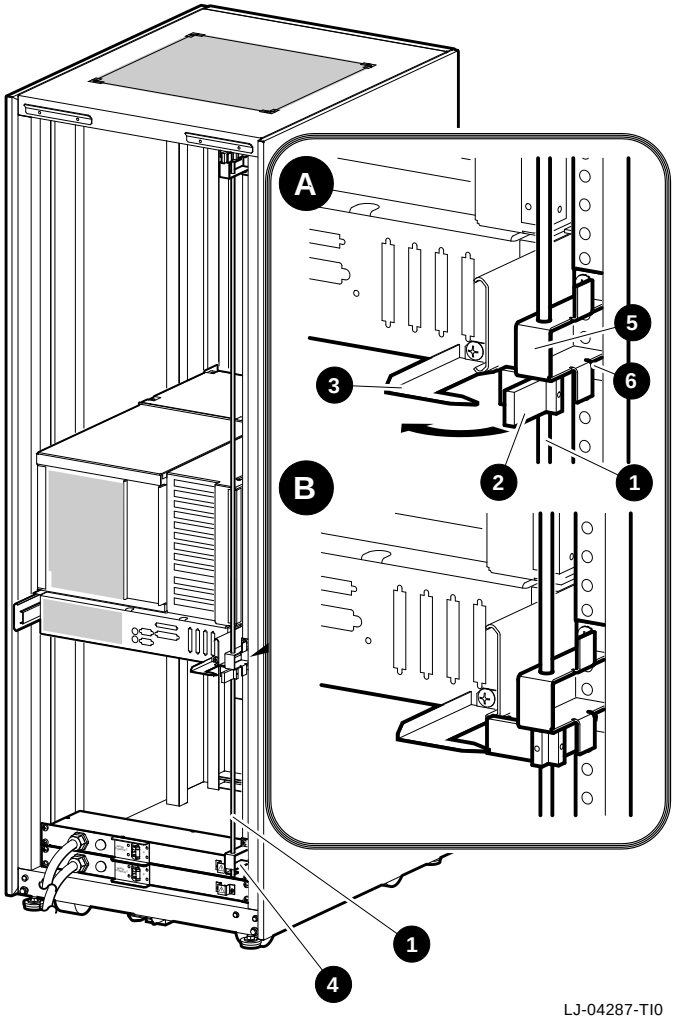
Note

The interlock system is compatible with the AlphaServer 2100 RM series systems. Other systems may not be compatible because the interlock actuator bracket may not engage properly. In these cases, do not install the interlock actuator bracket on those systems.

Warning

If a system is installed without an interlock actuator bracket or the vertical bar in the cabinet does not engage properly with the system interlock actuator bracket, it is the customer's responsibility to provide a stable cabinet.

Figure 2–8 The Interlock System



2.5.6 Removing and Replacing the Power Distribution Unit

To remove a power distribution unit, refer to Figure 2–9 and proceed as follows:

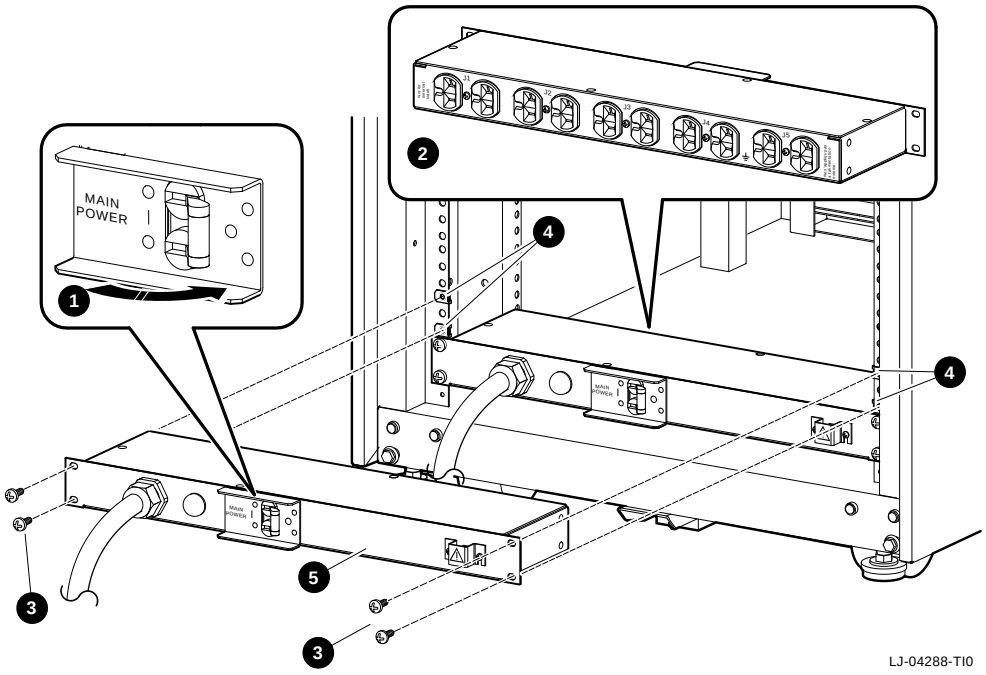
Removal

1. If the cabinet contains an operating system, turn off the system as described in the system documentation.
2. Disconnect the power distribution units from the ac power source.
3. Remove the rear door (refer to Section 2.5.1).
4. Set the Main Power switch ❶ on each power distribution unit to the off position (right).
5. Remove the bottom front filler panel (refer to Section 2.5.3). This provides access to the ac outlets on the power distribution units.
6. Note and record the power cord connections to the outlets ❷ at the rear of the failed power distribution unit. Then unplug the power cords from that power distribution unit.
7. At the rear of the cabinet, remove the four (4) 10-32 truss-head screws ❸ that secure the power distribution unit ❺ to the rear rails (via the four (4) 10-32 clip nuts ❹).
8. Pull out the power distribution unit ❺ and remove it from the cabinet.

Replacement

To replace a power distribution unit, reverse the removal procedure, steps 2 through 8, then follow the power-on procedure in the system documentation.

Figure 2–9 Removing a Power Distribution Unit



2.5.7 Removing and Replacing the Power Controller

To remove a power controller, refer to Figure 2–10 and proceed as follows:

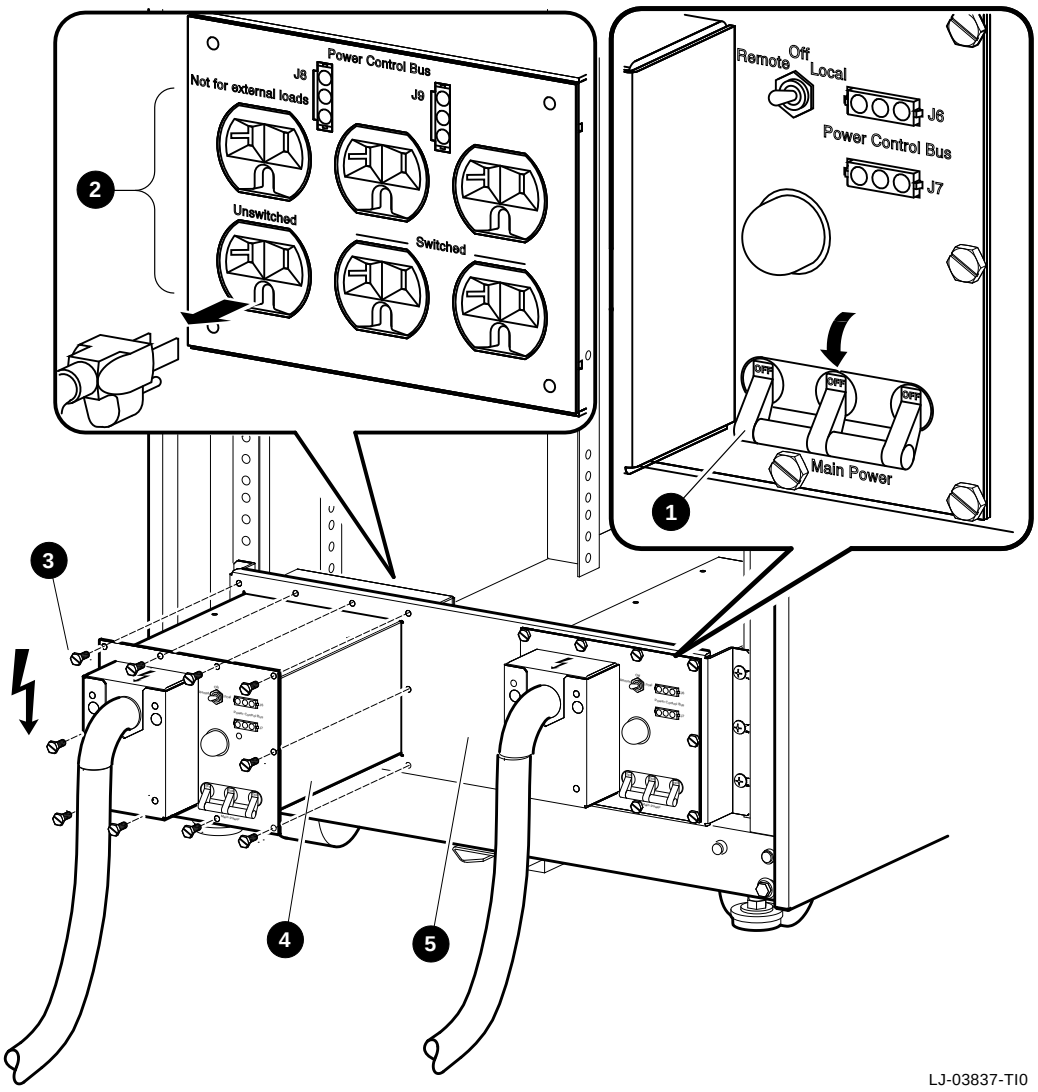
Removal

1. If the cabinet contains an operating system, turn off the system as described in the system documentation.
2. Disconnect the power controllers from the ac power source.
3. Remove the rear door (refer to Section 2.5.1).
4. Set the Main Power switch ❶ on each power controller to the off position (down).
5. Remove the bottom front filler panel (refer to Section 2.5.3). This provides access to the ac outlets on the power controllers.
6. Note and record the power cord connections to the outlets ❷ at the rear of the failed power controller. Then unplug the power cords from that power controller.
7. At the rear of the cabinet, remove the ten (10) retaining screws ❸ fastening the power controller ❹ to the power controller bracket ❺.
8. Pull out the power controller ❹ and remove it from the cabinet.

Replacement

To replace a power controller, reverse the removal procedure, steps 2 through 8, then follow the power-on procedure in the system documentation.

Figure 2–10 Removing a Power Controller



A

Field Replaceable Units (FRUs)

Table A–1 lists the field replaceable units (FRUs) for the H9A10 (600 mm) Cabinet.

Table A–1 Field Replaceable Units (FRUs)

Description	Part Number
Power controller, 120 Vac	877-DA
Power controller, 240 Vac	877-E
Power distribution unit, 120 Vac	H7600-AA
Power distribution unit, 240 Vac	H7600-AB

Reader's Comments

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EK-H9A10-IN. B01

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Thank you for your assistance.

I rate this manual's:	Excellent	Good	Fair	Poor
Accuracy (product works as manual says)	☐	☐	☐	☐
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Clarity (easy to understand)	☐	☐	☐	☐
Organization (structure of subject matter)	☐	☐	☐	☐
Figures (useful)	☐	☐	☐	☐
Examples (useful)	☐	☐	☐	☐
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