H9A15 Cabinet

Installation/Owner's Guide

Order Number: EK-H9A15-IN. A01

Digital Equipment Corporation

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Preface

Overview

This guide provides the information necessary to install the H9A15 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 H9A15 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 H9A15 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 H9A15 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 distribution unit. 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 H9A15 Cabinets (Figure 1–1 and Figure 1–2) are low-cost, computer-equipment enclosure systems that meet the Electronic Industries Association (EIA) standard 310C and the International Electrotechnical Commission (IEC) 297 standards and can accommodate fixed or slide-mounted chassis that fit into a standard 48.26-cm (19-in.) rack.

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

- Equipment mounting rails with the EIA universal 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 6.35 cm (2.5 in.) for equipment clearance and front door support. Both versions of the standard depth cabinet are shown in Figure 1–1 and both versions of the extended depth cabinet are shown in Figure 1–2.
- Front and rear doors with key locks
- A collar assembly that extends the rear of the cabinet 18.75 cm (7.38 in.)

Other cabinet features include the following:

- Vented top cover — This aids in the ventilation of the system.
- Hinged vented rear door — This provides additional ventilation and controlled access to the rear of the cabinet.
- 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 bars — These are 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 actuator bracket to work with the interlock system.

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

  Note

  The H7600-BB PDU has not been rated for North America and cannot be sold in the U.S. or Canada.

  Each H7600-CB power distribution unit provides twelve (12) IEC 320 ac power outlets.

  Warning

  The H7600-CB PDU is approved only for low-leakage applications. The total ground current is not to exceed 3.5 mA.

- Two power cords — Depending on the power distribution units shipped in the cabinet, the two power cords from the power distribution units have either L5-30P plugs for 120-Vac (H7600-AA) operation, L6-20P plugs for 240-Vac (H7600-AB) operation, or IEC 309 plugs for 240-Vac (H7600-BB) operation. The 240-Vac H7600-CB PDU has an IEC 320-C20 power receptacle that accommodates a detachable power cord. If the plugs are not compatible to your power-source receptacle, contact your Digital Customer Service office for assistance.

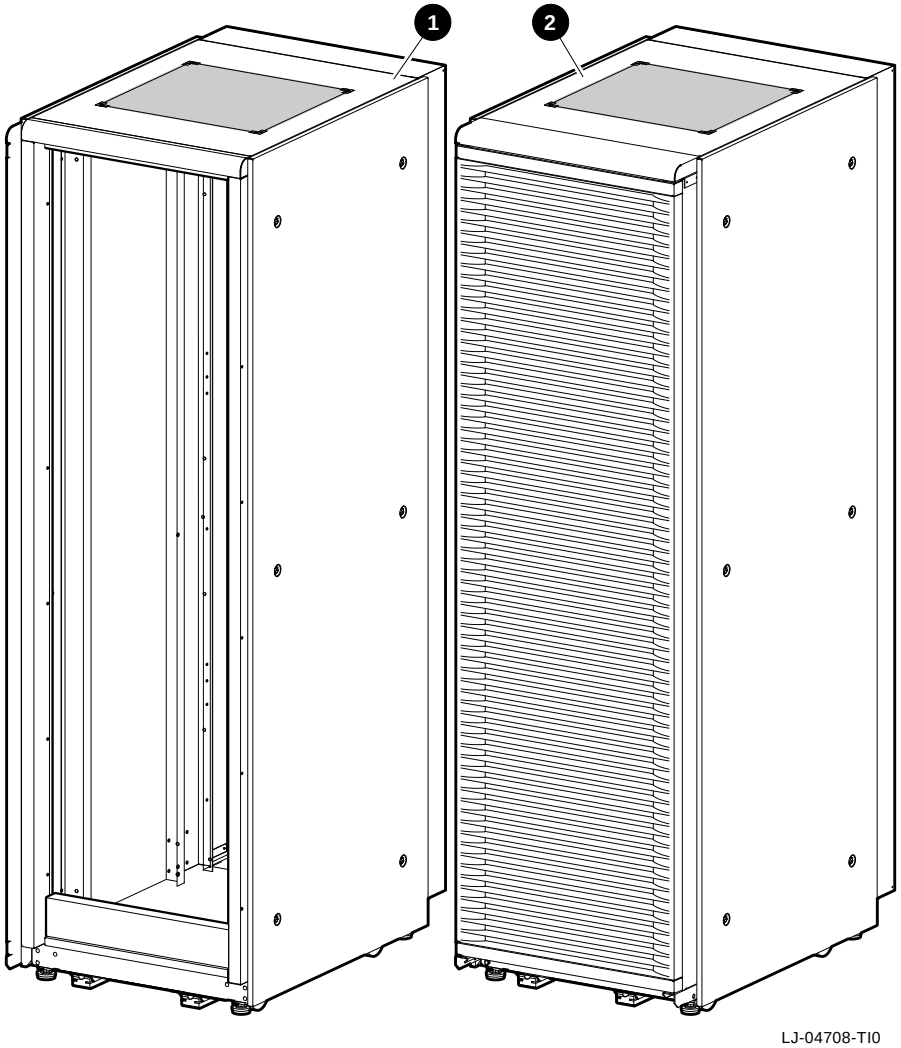
  For a list of the power cords available for the H7600-CB PDU, refer to Table 1–1.

Table 1–1 H7600-CB Power Cord Part Numbers

Country	Part Number
U.S., Canada, Japan	BN18X-4E
Australia, New Zealand	BN18D-4E
Central Europe[1]	BN25T-4E
UK, Ireland	BN18B-4E
Switzerland	BN27G-2E
Denmark	BN27K-2E
Italy	BN18E-4E
India, South Africa	BN22V-4E
Israel	BN27N-2E

[1]Central Europe includes Austria, Algeria, Belgium, Finland, France, Germany, Netherlands, Norway, Portugal, Spain, and Sweden.

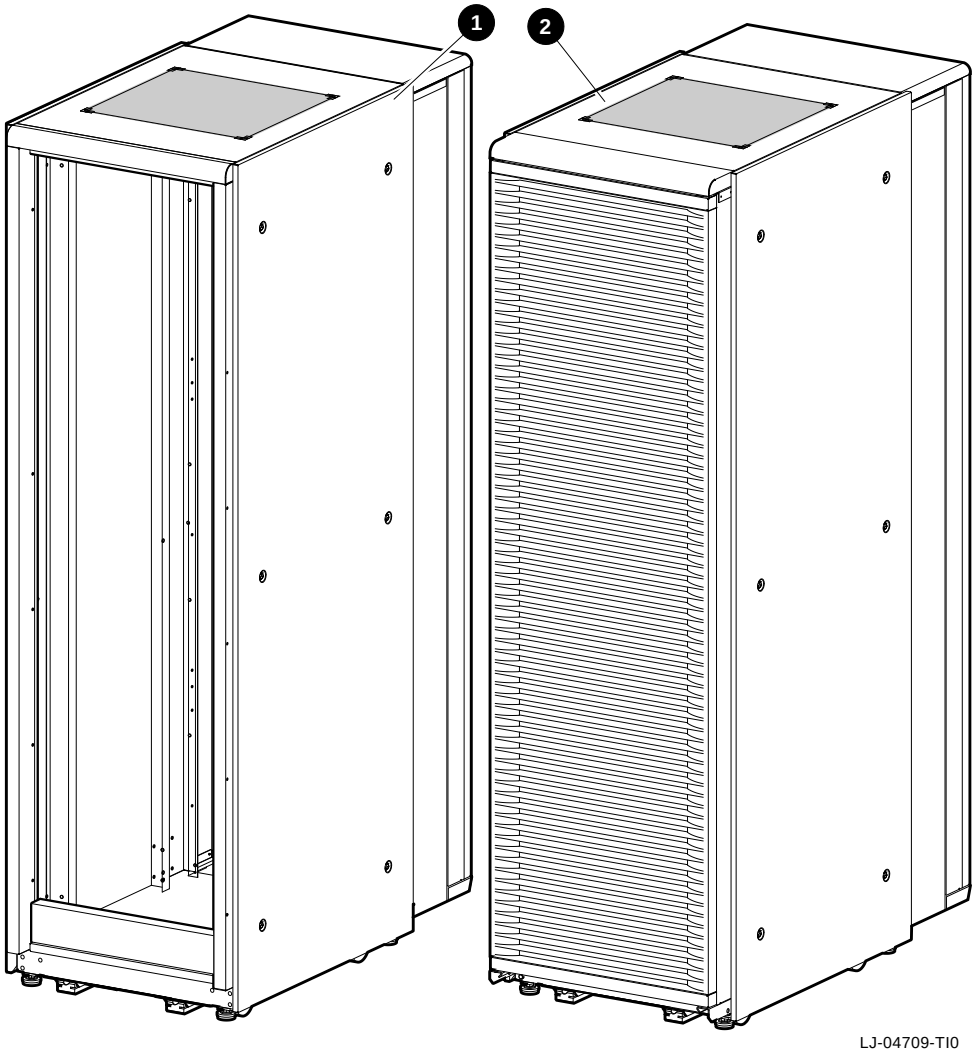
Figure 1–1 Standard Depth H9A15 Cabinets



❶ Standard depth cabinet with front trim kit

❷ Standard depth cabinet with front door kit

Figure 1–2 Extended Depth H9A15 Cabinets



❶ Extended depth cabinet with front trim kit

❷ Extended depth cabinet with front door kit

1.2 Specifications

Specifications for the H9A15 Cabinet are as follows:

Physical

Height, overall	199.9 cm (78.7 in.)
Width, overall	60.0 cm (23.6 in.)
Depth, overall	84.89 cm (33.42 in.) (Standard depth with front trim kit) 91.24 cm (35.92 in.) (Standard depth with front door kit) 103.6 cm (40.8 in.) (Extended depth with front trim kit) 109.95 cm (43.3 in.) (Extended depth with front door kit)
Maximum vertical rackmounting space	182.3 cm (71.75 in.)
Maximum vertical rackmounting space (with power distribution units installed)	173.4 cm (68.25 in.)
Horizontal rack width	Standard 48.26-cm (19-in.)
Weight	
- Standard depth cabinet with front trim kit and two power distribution units	124.74 kg (275 lb)
- Standard depth cabinet with front trim kit and two power distribution units plus packing material	150.14 kg (331 lb)
- Fully configured (filled) standard depth cabinet with front trim kit	Up to 578.34 kg (1,275 lb)
- Fully configured (filled) standard depth cabinet with front trim kit plus packing material	Up to 603.74 kg (1,331 lb)
- Standard depth cabinet with front door kit and two power distribution units	141.98 kg (313 lb)
- Standard depth cabinet with front door kit and two power distribution units plus packing material	167.38 kg (369 lb)
- Fully configured (filled) standard depth cabinet with front door kit	Up to 595.58 kg (1,313 lb)
- Fully configured (filled) standard depth cabinet with front door kit plus packing material	Up to 620.98 kg (1,369 lb)
- Extended depth cabinet with front trim kit and two power distribution units	137 kg (302 lb)

- Extended depth cabinet with front trim kit and two power distribution units plus packing material	162.39 kg (358 lb)
- Fully configured (filled) extended depth cabinet with front trim kit	Up to 590.59 kg (1,302 lb)
- Fully configured (filled) extended depth cabinet with front trim kit plus packing material	Up to 616 kg (1,358 lb)
- Extended depth cabinet with front door kit and two power distribution units	154.22 kg (340 lb)
- Extended depth cabinet with front door kit and two power distribution units plus packing material	179.63 kg (396 lb)
- Fully configured (filled) extended depth cabinet with front door kit	Up to 607.82 kg (1,340 lb)
- Fully configured (filled) extended depth cabinet with front door kit plus packing material	Up to 633.23 kg (1,396 lb)
Casters, swivel, nonlocking: Diameter: Maximum capacity:	 7.62 cm (3 in.) 225 kg (500 lb)
Casters, fixed, nonlocking: Diameter: Maximum capacity:	 7.62 cm (3 in.) 225 kg (500 lb)
Enclosure finish	Painted
Electrical	
AC input voltage for H7600-AA PDU	100 to 120 Vac, single-phase, 3-wire
AC input voltage for H7600-AB/BB PDU	220 to 240 Vac, single-phase, 3-wire
AC input voltage for H7600-CB PDU	200 to 240 Vac, single-phase, 3-wire
AC load	24 A per H7600-AA PDU 16 A per H7600-AB/BB/CB PDU
Input line frequency range	47 to 63 Hz
Input power at full load	2.88 kVA per H7600-AA PDU 3.84 kVA per H7600-AB/BB/CB PDU
Power cords (attached)	H7600-AA - Two (2), 120 Vac with L5-30P connectors H7600-AB - Two (2), 240 Vac with L6-20P connectors H7600-BB - Two (2), 240 Vac with IEC 309 connectors
Detached power cords (H7600-CB)	See Table 1–1

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 H9A15 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 109.95 cm (43.3 in.) maximum, depending on the cabinet model. 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. Depending on the model ordered, the cabinet weighs from 124.74 kg (275 lb) to 154.22 kg (340 lb) empty, and can weigh from 578.34 kg (1,275 lb) up to 607.82 kg (1,340 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.

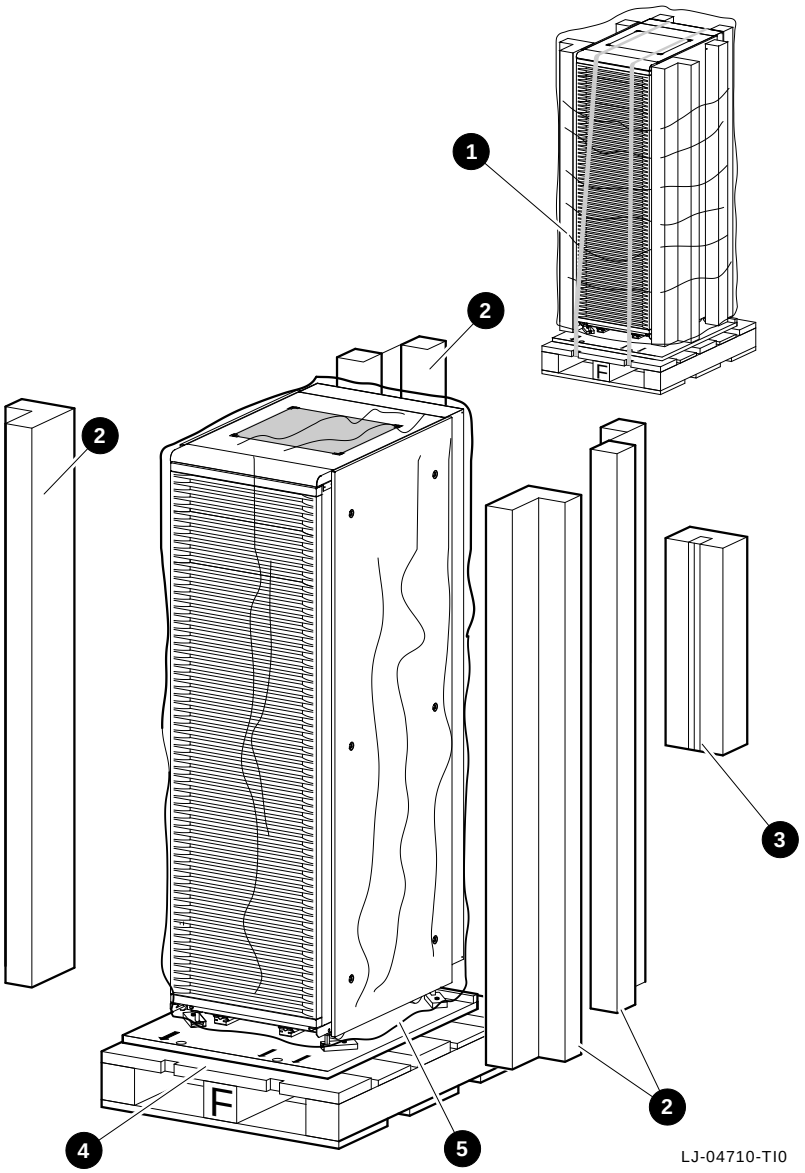
4. Remove the plastic bag ❺ covering the cabinet.
5. Check the cabinet and the associated equipment for any external damage. Report any damage to Digital Customer Service or a Digital sales office and to the responsible freight carrier.

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.

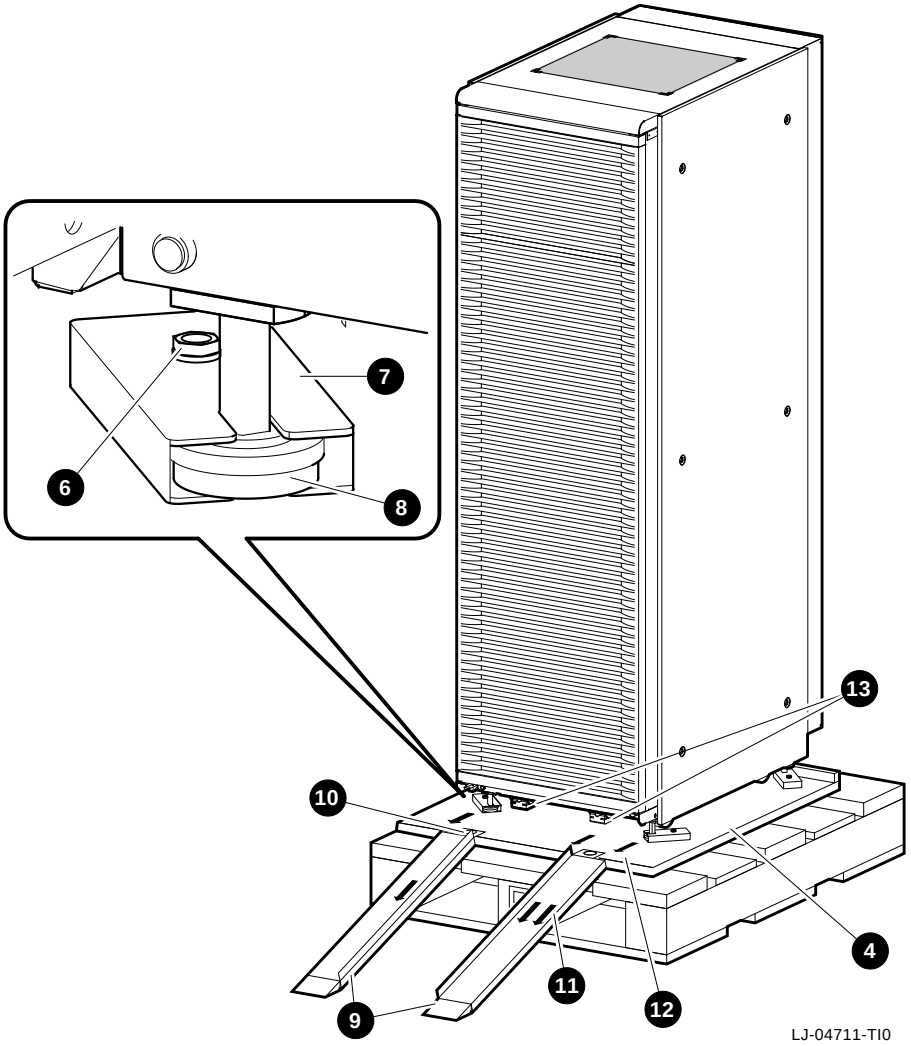
7. Remove the ramps ❾ from the shipping carton and set the ramps in the holes ❿ provided at the front of the pallet ❹. Ensure that the arrows ⓫ on the ramps match the pallet arrows ⓬ as shown in Figure 2–2.

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 feet on the stabilizer bars 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. Depending on the model ordered, the cabinet weighs from 124.74 kg (275 lb) to 154.22 kg (340 lb) empty, and can weigh from 578.34 kg (1,275 lb) up to 607.82 kg (1,340 lb) fully configured.

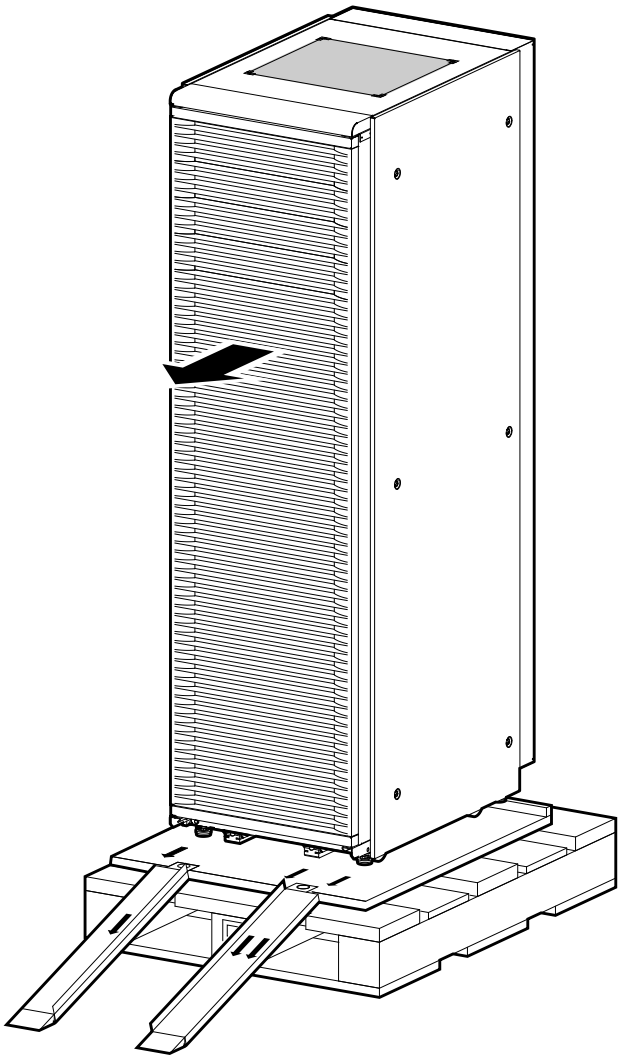
If equipment is installed in the cabinet, the cabinet may become top heavy and could accelerate rapidly down the ramps if not restrained. Be prepared to guide and control the motion of the cabinet.

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 Side Panels (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 Bars (Section 2.5.4)
- Using the Interlock System (Section 2.5.5)
- Removing and Replacing the Power Distribution Unit (Section 2.5.6)

2.5.1 Removing and Replacing the Side Panels

The side panels on the H9A15 cabinets are removable.

Note

If the side panels are removed, replace them before powering up any equipment.

To remove the side panels, refer to Figure 2–4 and proceed as follows:

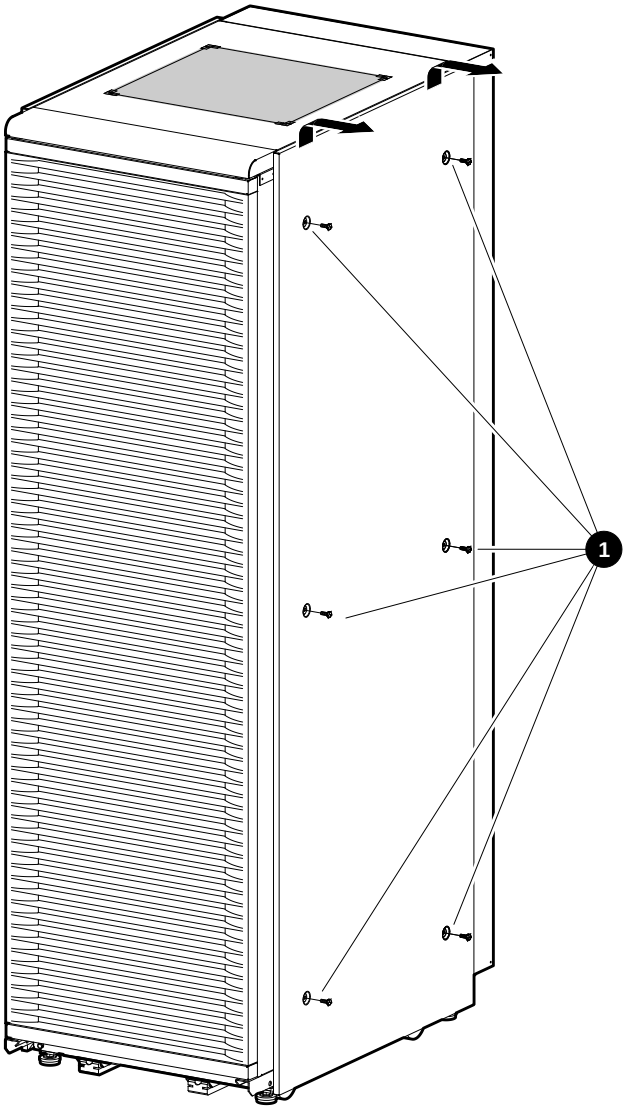
Removal

1. Remove the six M5 Phillips-head machine screws ❶ securing the side panel to the cabinet frame.
2. Grasp both sides of the side panel and lift the side panel away from the cabinet frame.
3. Place the side panel aside and out of the way.

Replacement

To replace the side panel, reverse the removal procedure, steps 1 through 3.

Figure 2–4 Removing and Replacing the Side Panels



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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.

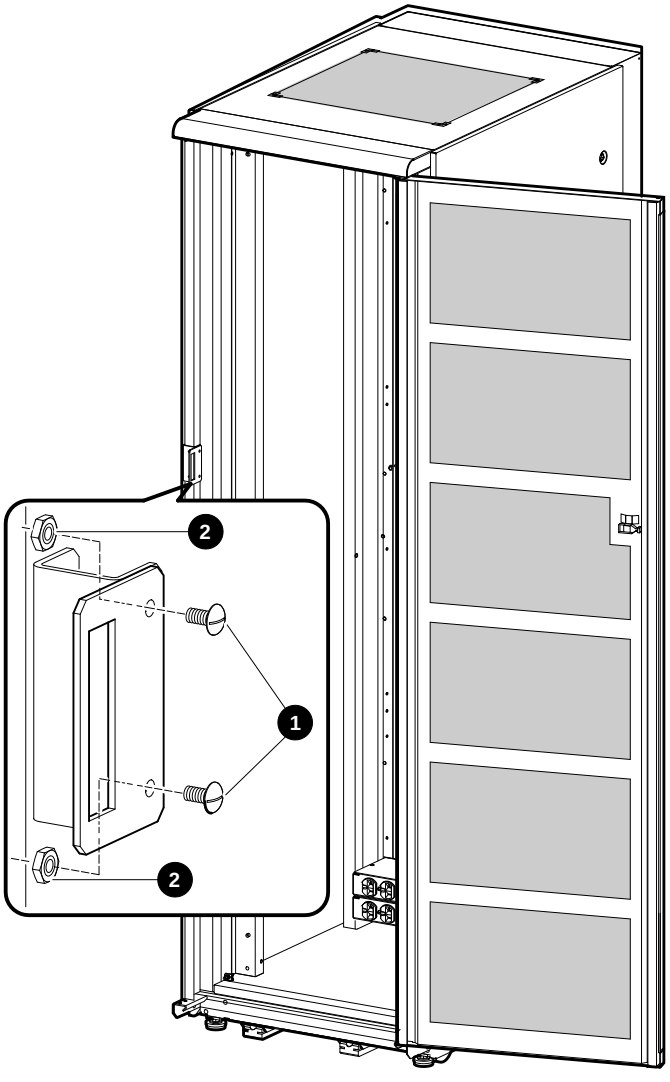
Replacement

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 (when installed in the door latch area of the H9A15 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:

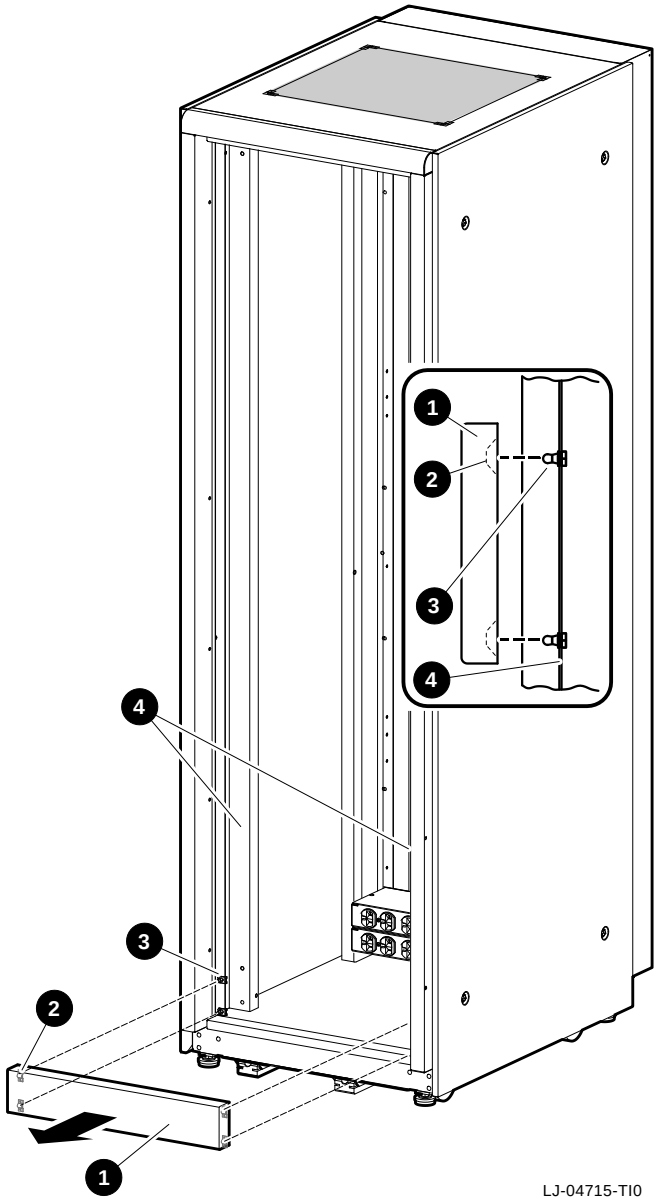
Removal

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 Bars

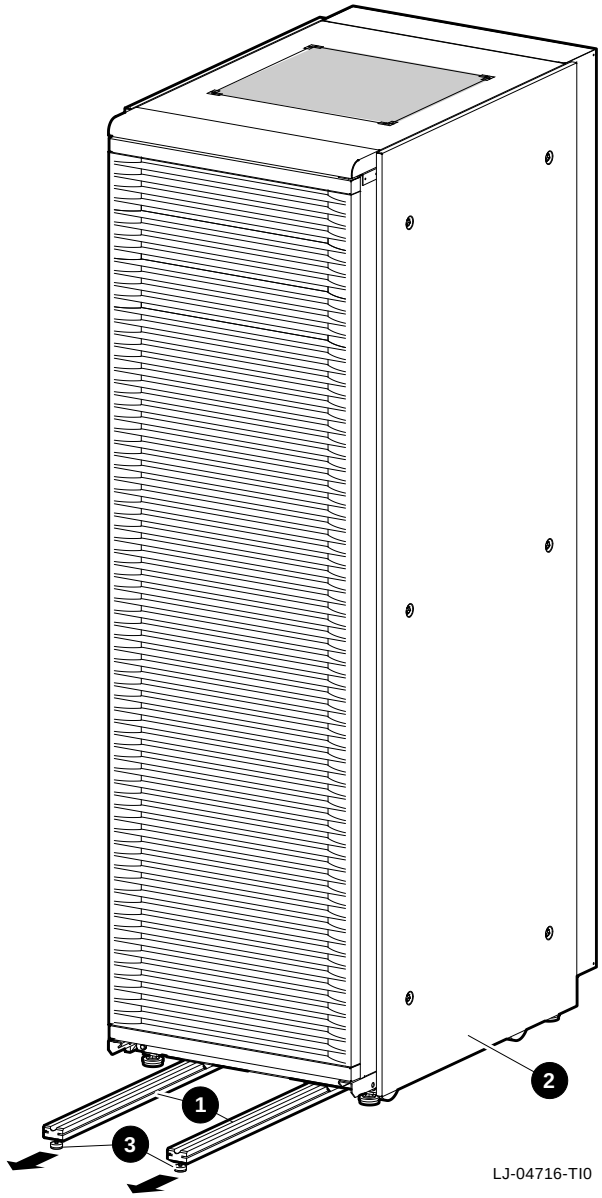
The stabilizer bars ❶ pull straight out from the bottom front of the cabinet ❷ as shown in Figure 2–7. When the stabilizer bars are fully extended, adjust the feet ❸ at the end of the stabilizer bars until they touch the floor.

Warning

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

The H9A15 Cabinet can hold various 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 Bars



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.

Warning

If additional products are installed into the cabinet, actuator latches for those products should be installed to provide a stable environment.

To install actuator latches, proceed as follows:

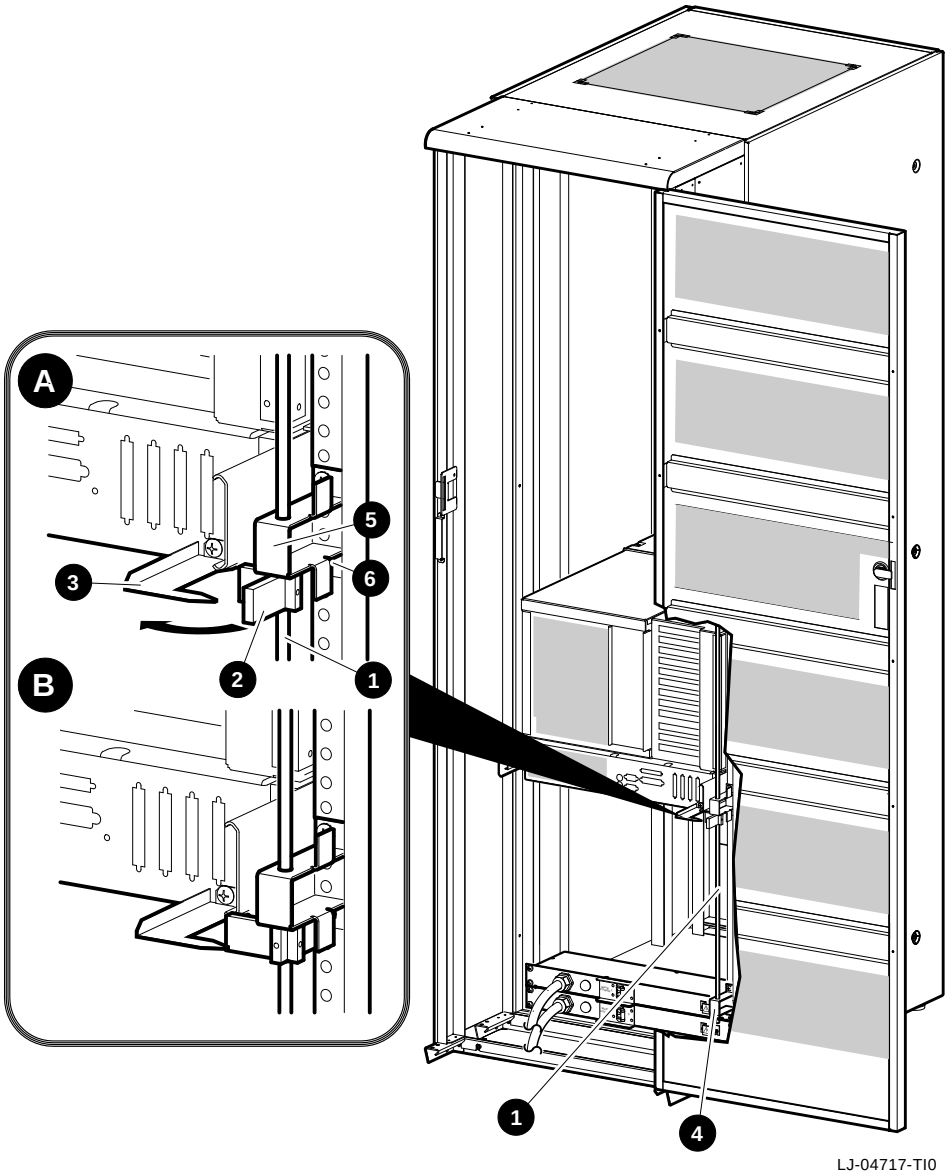
1. Remove and save the screws securing the bottom mounting bracket to the cabinet ❹.
2. Slide the mounting bracket off the bottom of the vertical bar ❶.
3. Slide the stabilizer bracket ❺ and the actuator latch ❷ for the new product onto the bottom of the vertical bar in the proper order. Refer to the new product installation documentation for the proper order of the stabilizer bracket and actuator latch.
4. Replace the bottom mounting bracket ❹ and install the screws removed in step 1 but *do not* tighten them.
5. 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.
6. Place the nut plate behind the RETMA rail and install and tighten the screws provided to secure the stabilizer bracket.
7. Position the new actuator latch ❷ to properly engage the product, and tighten the set screws to secure the latch.

8. Now tighten the screws to secure the bottom mounting bracket ❹.

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

Warning

There can be two or more PDUs per cabinet. Ensure that all systems installed in the cabinet are turned off as described in the system documentation before performing the following procedure.

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

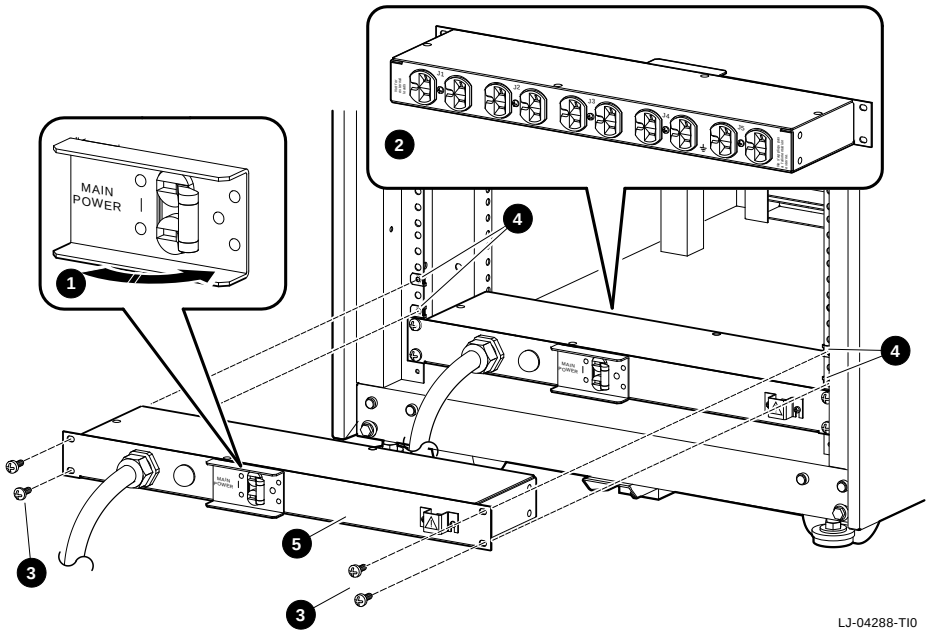
Removal

1. If the cabinet contains an operating system, turn off the system as described in the system documentation.
2. Open the rear door.
3. Set the Main Power switch ❶ on all power distribution units to the off (O) position.
4. Disconnect the power distribution units from the ac power source.
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



A

Field Replaceable Units (FRUs)

Table A–1 lists the field replaceable units (FRUs) for the H9A15 Cabinet.

Table A–1 Field Replaceable Units (FRUs)

Description	Part Number
Power distribution unit, 100 to 120 Vac	H7600-AA
Power distribution unit, 220 to 240 Vac	H7600-AB H7600-BB
Power distribution unit, 200 to 240 Vac	H7600-CB

Reader's Comments

H9A15 Cabinet
Installation/Owner's Guide
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Your comments and suggestions help us improve the quality of our publications.
Thank you for your assistance.

I rate this manual's:	Excellent	Good	Fair	Poor
Accuracy (product works as manual says)	☐	☐	☐	☐
Completeness (enough information)	☐	☐	☐	☐
Clarity (easy to understand)	☐	☐	☐	☐
Organization (structure of subject matter)	☐	☐	☐	☐
Figures (useful)	☐	☐	☐	☐
Examples (useful)	☐	☐	☐	☐
Index (ability to find topic)	☐	☐	☐	☐
Page layout (easy to find information)	☐	☐	☐	☐

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