BA42 DSSI Expander Installation Manual

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Preface

Use this guide to install one or more BA42 DSSI expanders, to add a drive to a BA42 DSSI expander, and to verify that DSSI switches have been set correctly for each drive in a BA42 DSSI expander.

This guide describes the following:

- How to install one or more expanders
- How to install new drives inside BA42 DSSI expanders
- How to make sure the drives inside a BA42 DSSI expander are recognized by the system and what to do if they are not

1

Installing the BA42 DSSI Storage Expander

This chapter covers the following topics:

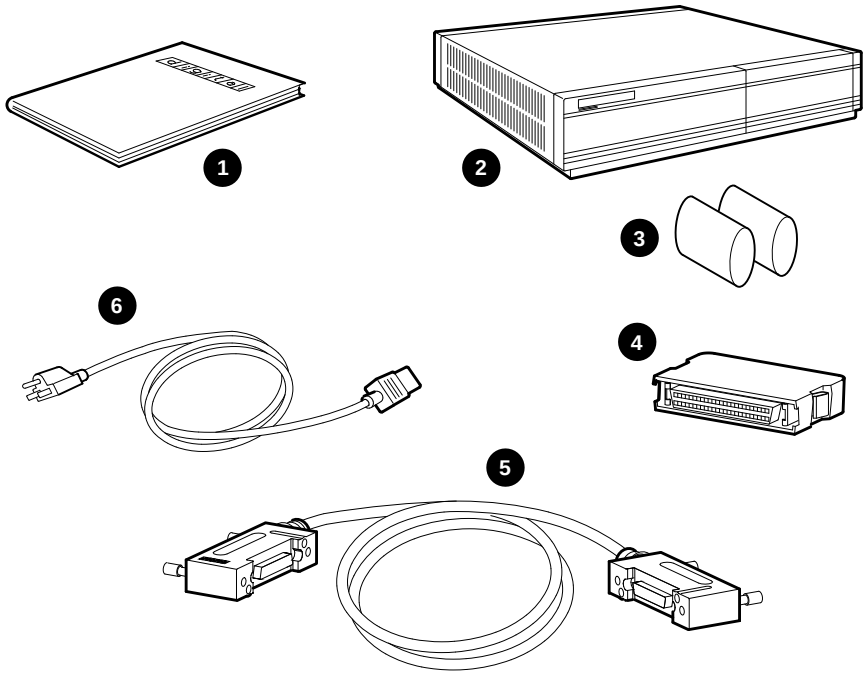
- Checking the shipment to make sure nothing is broken or missing
- Setting up a BA42 DSSI expander
- Selecting DSSI ID numbers and setting the DSSI ID switches for Digital-supplied hard disk drives installed in the BA42 expander
- Attaching the expander to the system unit
- Attaching one expander to another expander
- Ensuring that the system recognizes the drive or drives inside the expander

1.1 Checking the Shipment

When you unpack the carton that contains a BA42 DSSI expansion box, you will find all of the items shown in Figure 1–1.

Installing the BA42 DSSI Storage Expander
1.1 Checking the Shipment

Figure 1–1 Parts of a BA42 DSSI Expander Box Shipment



❶ Documentation

❷ DSSI expander box

❸ Rubber drive shipping bracket supports (up to three)

❹ DSSI terminator

❺ DSSI cable

❻ Power cord (In Europe the power cord may not be included; it is an optional item which may be ordered from a menu.)

1.2 Setting Up the Expander

Warning

It takes two people to unpack and set up a BA42 DSSI expander safely.

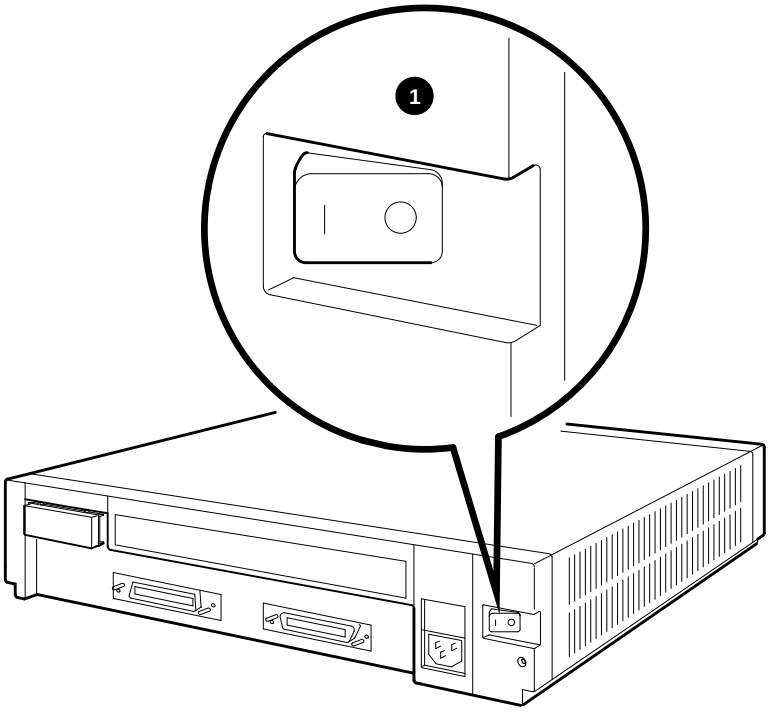
Caution

Standing an expander on its side blocks vents and can damage the expander and any drives it contains.

Set up the BA42 DSSI expander on a flat surface as near as possible to the system unit. If you are installing more than one expander, you can stack the boxes on top of each other.

Make sure the on/off switch on the expander is in the off position (see Figure 1–2).

Figure 1–2 On/Off Switch in the Off Position



❶ On/off switch

1.3 Determining Which DSSI ID Numbers Are Available

A DSSI ID number must be designated for the first drive installed in a BA42 expander; the DSSI IDs for the remainder of the drives in the expander will be set automatically in increments of one, beginning with the number assigned to the first drive.

Numbers that can be used range from 0 to 7 (up to seven DSSI drives can be connected to a given DSSI connector on the system unit); each number may be used only once via that connector. To find out what DSSI ID numbers are available, see the option installation instructions in the installation guide or user's guide for the system.

After determining the DSSI ID number to be assigned to the first drive, use the DSSI ID switches on the rear of the expander box to set the ID to that number (see Section 1.4).

1.4 Setting DSSI ID Switches for Hard Disk Drives

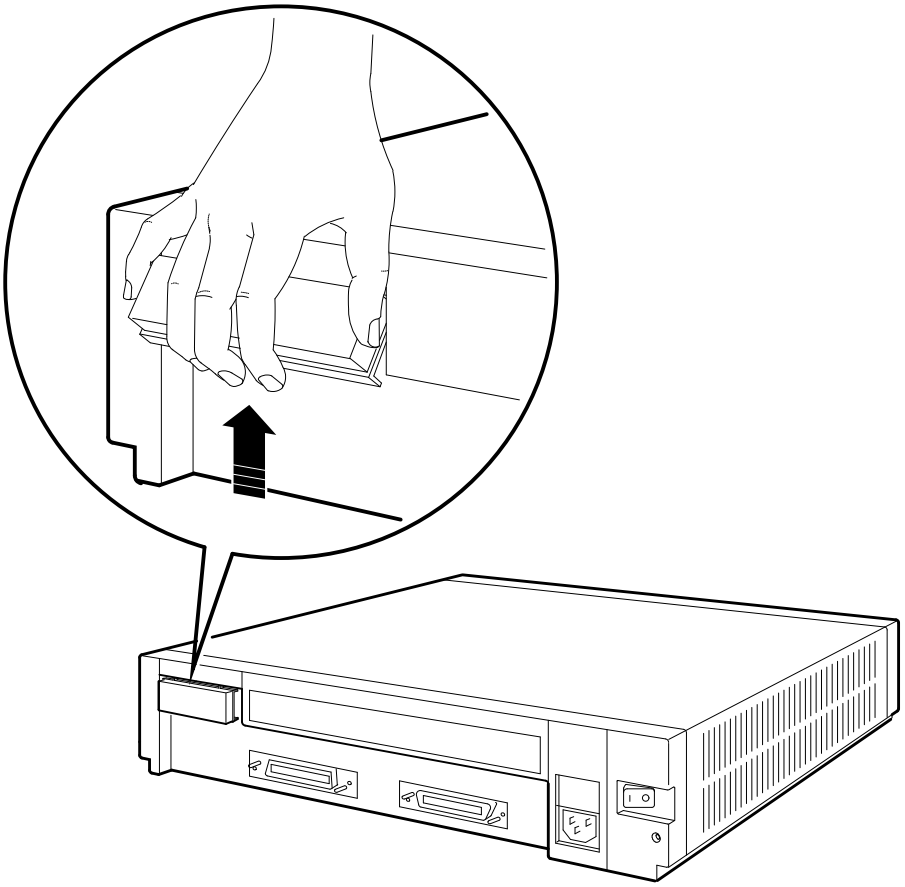
The DSSI ID switch for hard disk drives installed in a BA42 expander is located on the back of the expander.

If there are one to four hard disk drives preinstalled in your expander, check the DSSI ID switch setting for the first drive and change the setting if necessary. Settings for the remaining hard disks are then automatically incremented.

1.4.1 Remove the DSSI ID Switch Cover from the Expander

Access the DSSI ID switches by lifting up and removing the switch cover (see Figure 1–3). Replace the switch cover after checking the switches or the drive indicator LEDs.

Figure 1–3 Removing the DSSI ID Switch Cover from the Expander

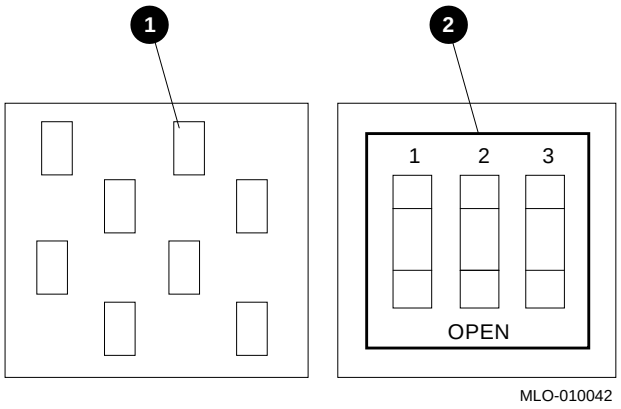


1.4.2 Check the DSSI ID Switch Setting on the Expander

If there is a hard disk drive installed in the expander, the three DSSI ID switches on the back of the box determine the DSSI ID switch setting for the first drive (see Figure 1–4).

The DSSI IDs for additional hard drives are automatically incremented by one as they are added; no further action is necessary.

Figure 1–4 LED Indicators and DSSI ID Switches for Hard Disk Drives



❶ LED indicators ❷ DSSI ID switches

1.4.3 Change the DSSI ID Switch Settings if Necessary

Normally the three switches are preset at the factory to the ID number zero, with all three switches set to open (down, down, and down). However, if the expander is ordered with a CPU that has storage embedded, the ID of the system disk drive in the CPU is set to zero and the first drive in the expander box is the first available ID outside of the CPU cabinet.

If necessary, use a pen or small pointed object to flip the switches to set the DSSI ID of the first drive to the appropriate number (see Table 1–1).

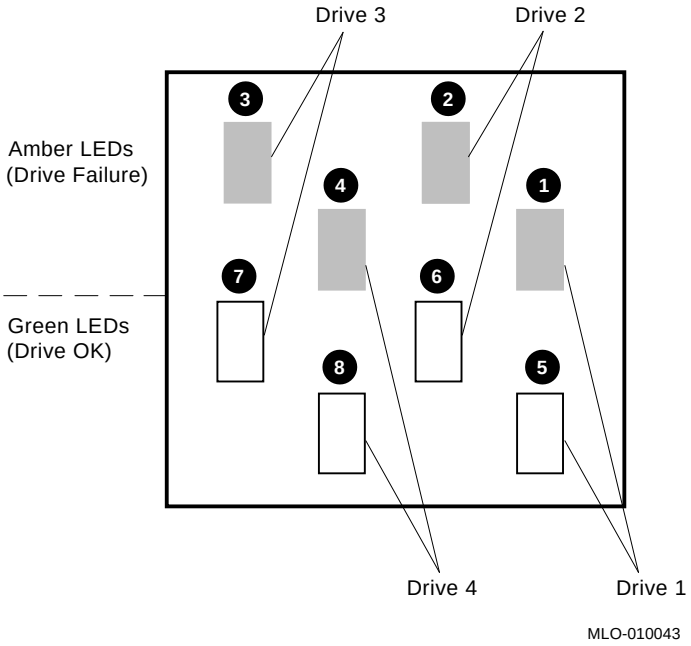
Table 1–1 DSSI ID Numbers and Switch Settings for Hard Disk Drives in the Expander Box

DSSI ID NUMBERS:				Switch Settings		
Drive 1	Drive 2	Drive 3	Drive 4	Switch 1	Switch 2	Switch 3
0	1	2	3	Down	Down	Down
1	2	3	4	Down	Down	Up
2	3	4	5	Down	Up	Down
3	4	5	6	Down	Up	Up
4	5	6	7	Up	Down	Down
5	6	7	0	Up	Down	Up
6	7	0	1	Up	Up	Down
7	0	1	2	Up	Up	Up

1.5 Drive Indicator Panel

The drive indicator panel is located under the DSSI switch cover (see Figure 1–3). The number of drives present is indicated by one to four green LEDs. The panel also lights one of four amber LEDs to indcate that a particular drive has faulted. See Figure 1–5.

Figure 1–5 Drive Indicator Panel LEDs



❶ Drive 1 failure indicator (amber LED)

❷ Drive 2 failure indicator (amber LED)

❸ Drive 3 failure indicator (amber LED)

❹ Drive 4 failure indicator (amber LED)

❺ Drive 1 OK indicator (green LED)

❻ Drive 2 OK indicator (green LED)

❼ Drive 3 OK indicator (green LED)

❽ Drive 4 OK indicator (green LED)

1.6 Installing an Expander

If you are adding an expander to a system that already has an expander fully installed, turn to Section 1.7.3 for instructions on how to connect one expander to another.

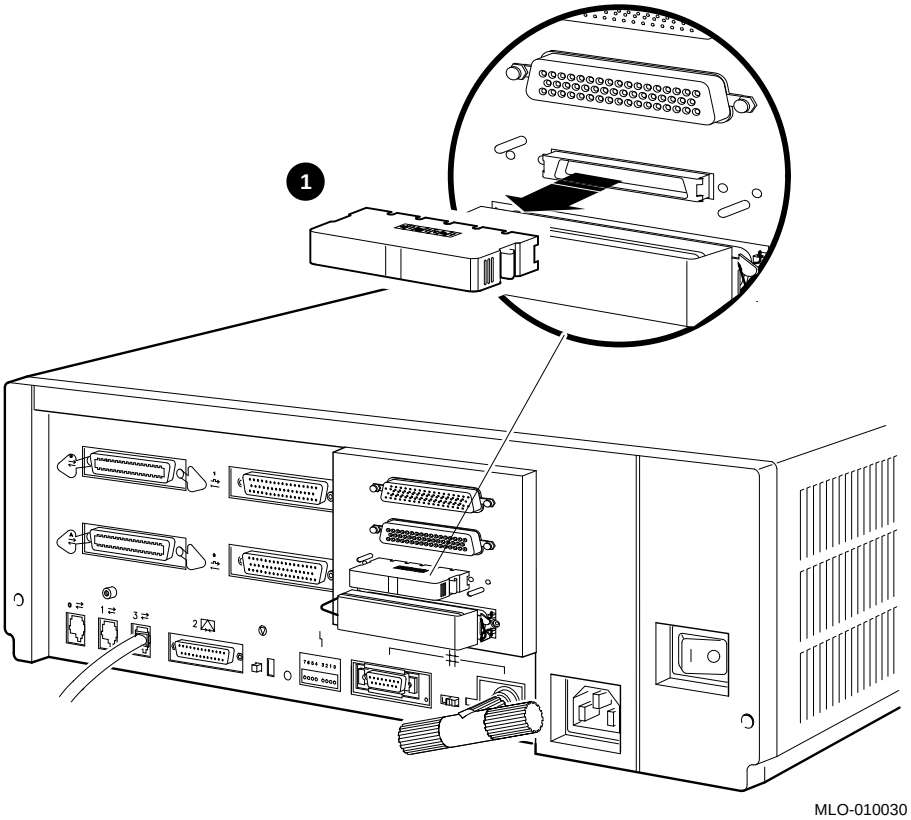
1.6.1 Turn Power Off

Turn off the power first to the monitor and then to the system unit.

1.6.2 Remove the Terminator from the DSSI Connector on the System Unit

If there is a terminator on the DSSI connector on the back of the system unit, remove it by squeezing the release tab on the sides of the terminator and pulling the terminator out of the connector (see Figure 1–6).

Figure 1–6 Removing the DSSI Terminator from the System Unit

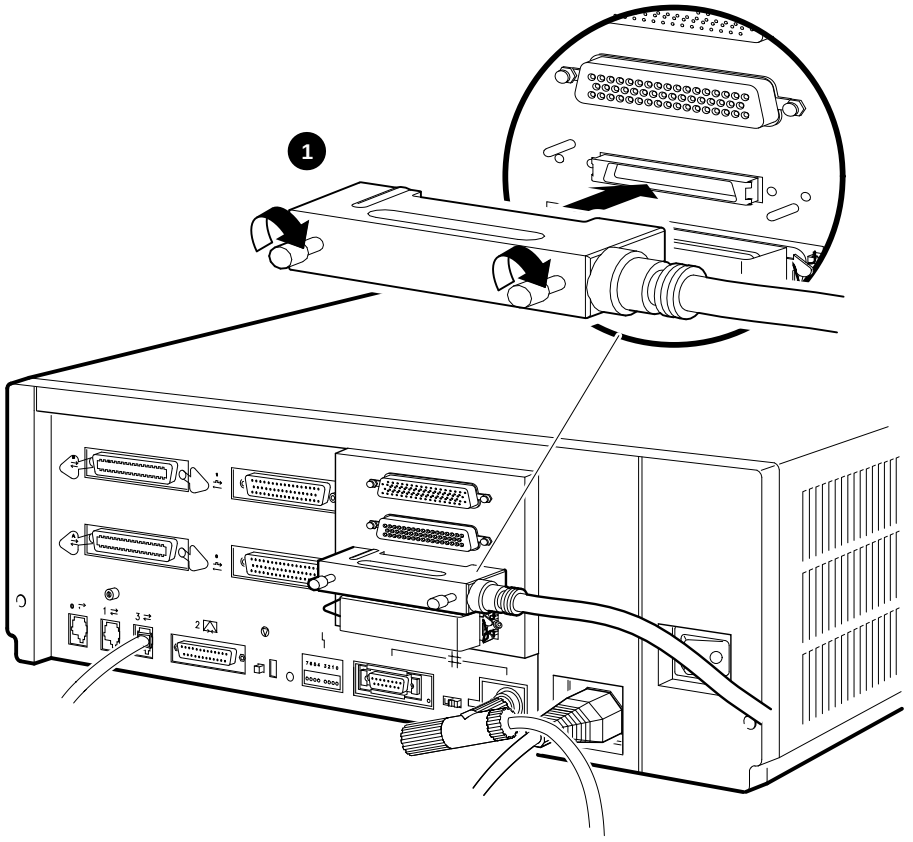


❶ DSSI terminator

1.6.3 Connect the DSSI Cable to the System Unit

Figure 1–7 depicts the proper installation of a DSSI cable.

Figure 1–7 Connecting a DSSI Cable to the System Unit



❶ DSSI cable

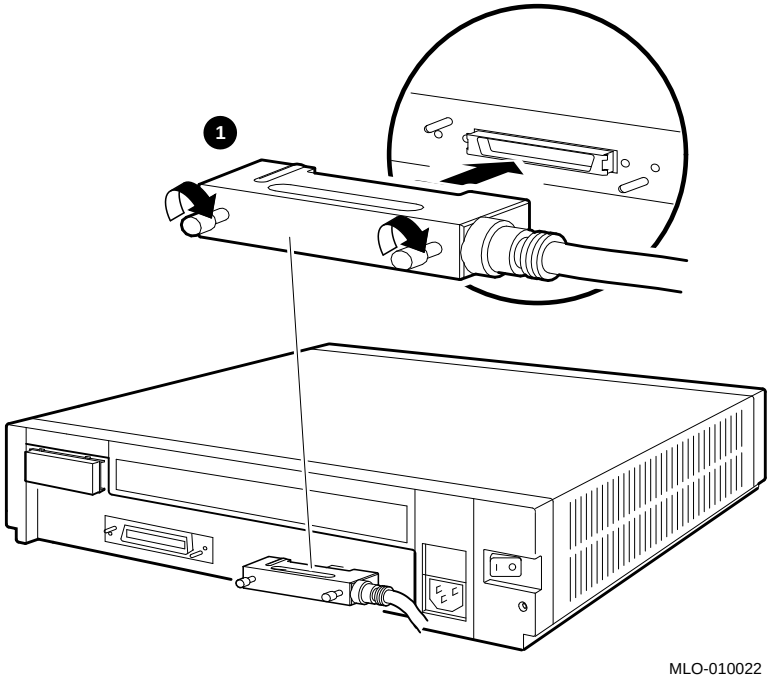
1.6.4 Connect the DSSI Cable to the Expander

Connect the free end of the DSSI cable to one of the connectors on the expander. See Figure 1–8.

If you are installing more than one expander, turn to Section 1.7.3 after connecting the DSSI cable to the first expander.

If you are installing only one box, turn to Section 1.6.5 to connect the terminator.

Figure 1–8 Connecting a DSSI Cable to the Expander

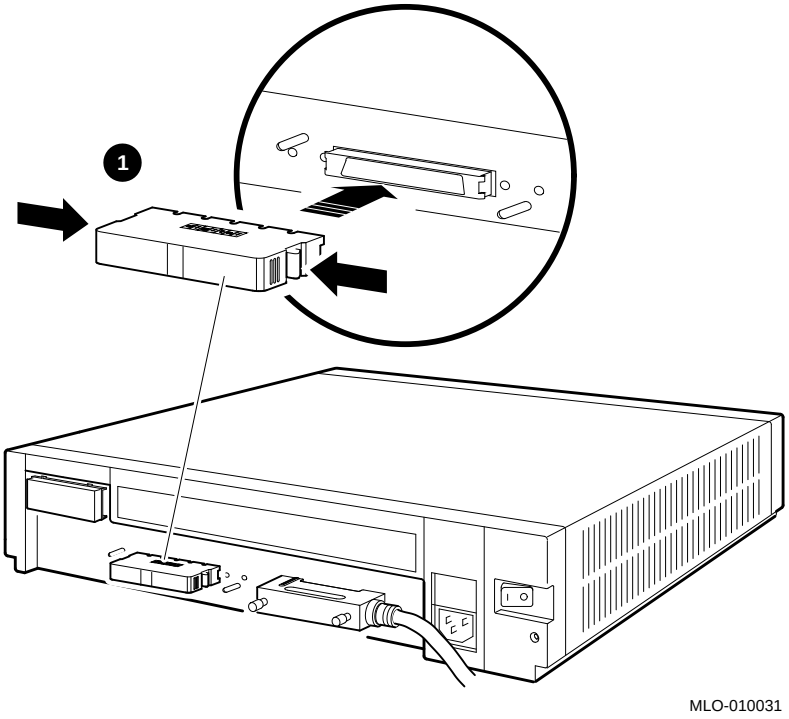


❶ DSSI cable

1.6.5 Connect the Terminator

Connect the terminator to the empty connector on the expander (see Figure 1–9).

Figure 1–9 Connecting a Terminator to the Expander



❶ DSSI terminator

1.6.6 Connect the Power Cord

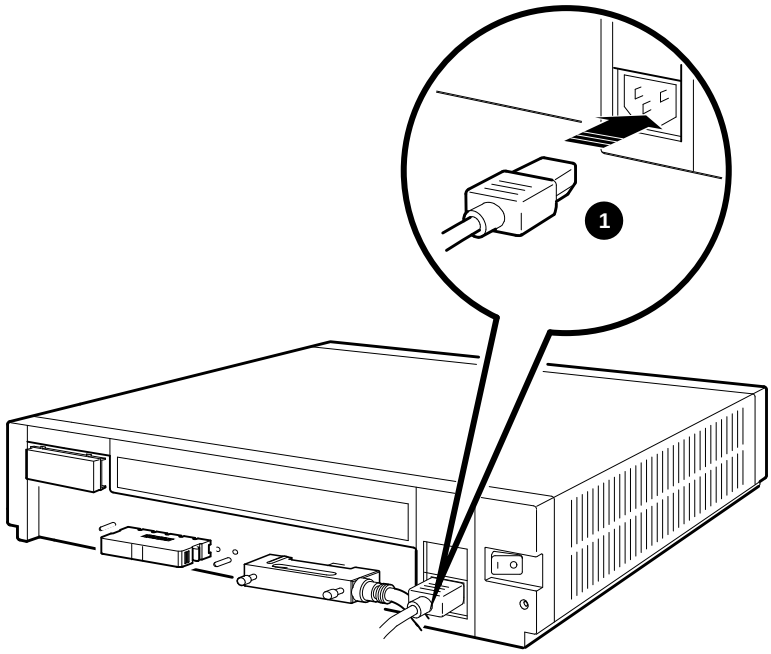
Note

Digital suggests that all power cords for the system be plugged into a single source of power, such as a power strip.

Connect the prongless end of the power cord to the expander and plug the pronged end into a power outlet or power strip (see Figure 1–10).

After connecting the power cord, turn to Section 1.8 to verify the system configuration.

Figure 1–10 Connecting a Power Cord to an Expander



❶ Power cord

1.7 Connecting One Expander to Another Expander

This section describes attaching an expander box to a system that already has one or more expander boxes fully installed.

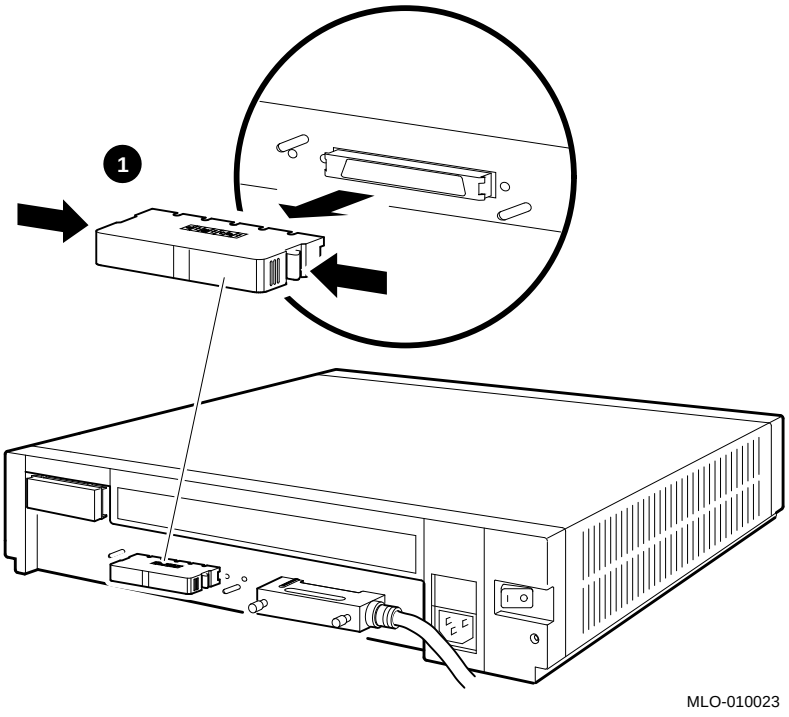
1.7.1 Turn Power Off

Turn off power first to the expanders and then to the system unit.

1.7.2 Remove the Terminator from the Expander Box

Remove the terminator from the last expander box attached to the DSSI connector on the system unit by squeezing the release tab on the sides of the terminator and pulling the terminator out of the connector (see Figure 1–11).

Figure 1–11 Removing a Terminator from an Expander



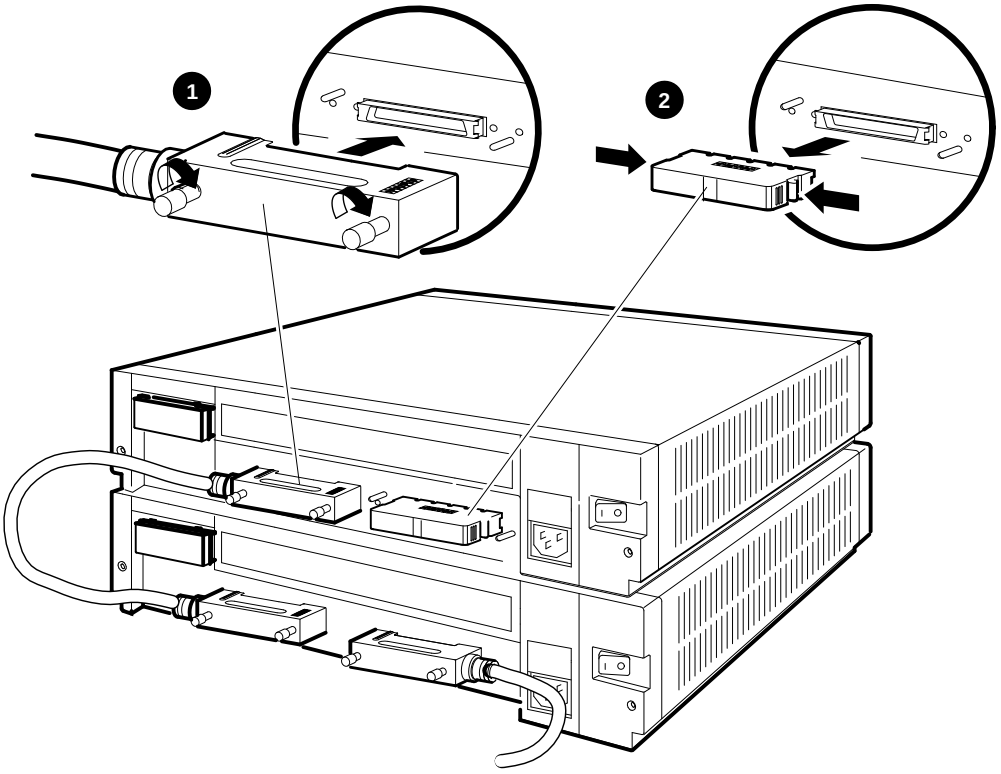
❶ DSSI terminator

1.7.3 Connect the DSSI Expander Cable and Terminator

1. Connect the three-foot DSSI expander cable to the empty connector on the last box connected to the system unit.
2. Connect the other end of the cable to the left-hand connector on the box you are installing.
3. Connect the terminator to the empty connector on the final expander box.

Figure 1–12 shows how to connect the three-foot DSSI expander cable and the terminator.

Figure 1–12 Connecting the Three-Foot DSSI Cable and Terminator to the Final Expander



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❶ Three-foot DSSI cable

❷ DSSI terminator

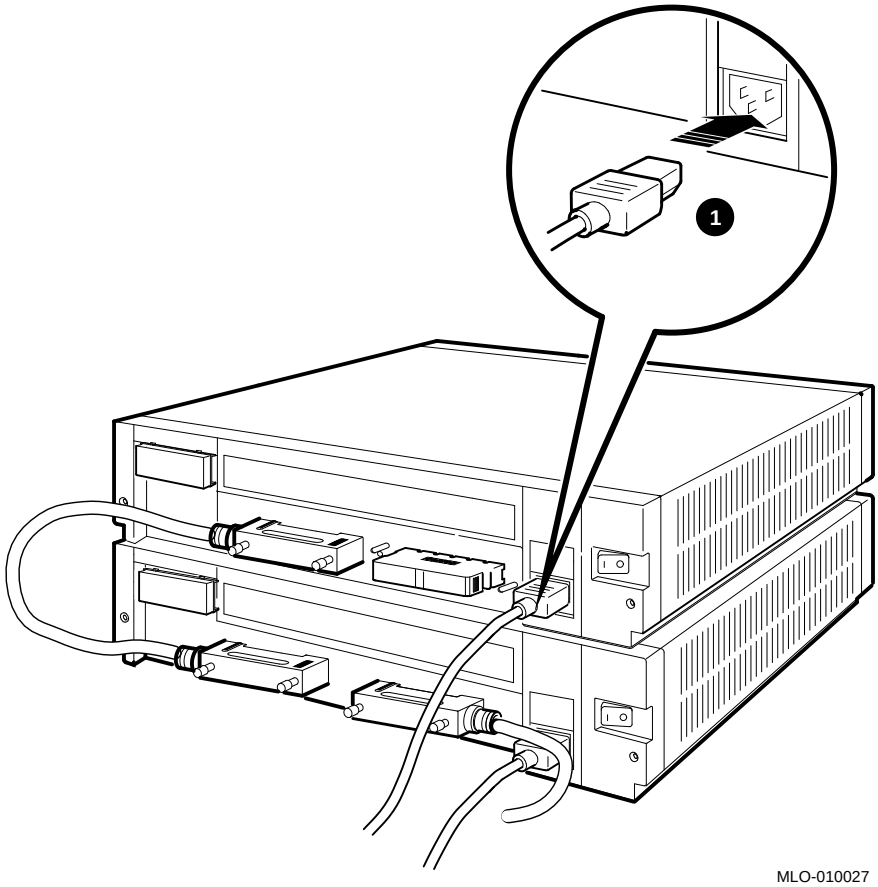
1.7.4 Connect the Power Cords

Note

Digital suggests that all power cords for the system be plugged into a single source of power, such as a power strip.

Connect the prongless end of a power cord to each expander box and plug the pronged end of each cord into a power outlet or power strip as depicted in Figure 1–13.

Figure 1–13 Connecting Power Cords to Expander Boxes



❶ Power cord

1.8 Verifying the System Configuration

Use the following section to verify the configuration of the system.

1.8.1 Turn Power On

Turn on the power first to all expansion boxes and then to the system unit.

1.8.2 Check the Configuration Display

The configuration display for the system tells you whether the system recognizes the drives in the expander boxes.

To display and read the system configuration, follow the instructions provided in the hardware installation guide or user's guide that came with the system.

If an expander box drive does not appear in the configuration display, follow this procedure:

1. Press the on/off switch on the expander to be sure the switch is securely in the on position.
2. Turn off the system unit and expander boxes.
3. Be sure all expander box cables are connected securely.
4. Be sure all power cords are connected securely.
5. Be sure the DSSI terminator is attached securely to the expander box.
6. Be sure the internal cables are connected securely to the drive.
7. Check the expander box cable connector for damaged pins.
8. Check the DSSI ID switch settings.
9. Check the drive indicator lights.
10. Turn on all expander boxes and the system unit; then check the configuration display again.
11. If the configuration display still does not show the drives in the expander box, contact the system manager or Digital service representative.

Once DSSI ID switch settings for the hard disk drives installed in the expansion box are recognized by the system, replace the cover on the DSSI ID switch on the back of the expander box by inserting the notch on the bottom of the cover into the opening below the switch on the back of the expander box, and snapping the cover into place.

2

Installing a BA42 Storage Expander Upgrade

Note

Use this chapter in lieu of the Installation Guide, EK–RF31T–IN, supplied with the RF3x-EK option shipment.

This chapter includes the following topics:

- Checking the shipment to make sure nothing is broken or missing
- Installing a hard disk drive inside an expander box

2.1 Checking the Shipment

Note

In addition to the items that make up the shipment, you will need a Phillips screwdriver.

If you ordered an RF3x-EK hard disk drive, the shipment will include in addition to the drve:

- Drive mounting bracket
- Four rubber mounts with integral screws

If any item is broken or missing, contact the system manager or Digital service representative.

2.2 Preparing the Expander Box

Caution

To prevent damage to equipment, take the following precautions:

- Only qualified service personnel should remove the cover or install drives.
- Static electricity can damage integrated circuits. Always use a grounded wrist strap and a grounded work surface (29–26246) when working with the internal parts of a computer system.
- Shut down the operating system in an orderly fashion before you remove or install drives; the procedures in this document assume that the operating system has been shut down first.
- Turn off the system power before you remove or install drives (see Section 2.2.1).

Prepare the expander box for the addition of a drive:

1. Turn off all power (Section 2.2.1).
2. Remove the cover (Section 2.2.2).

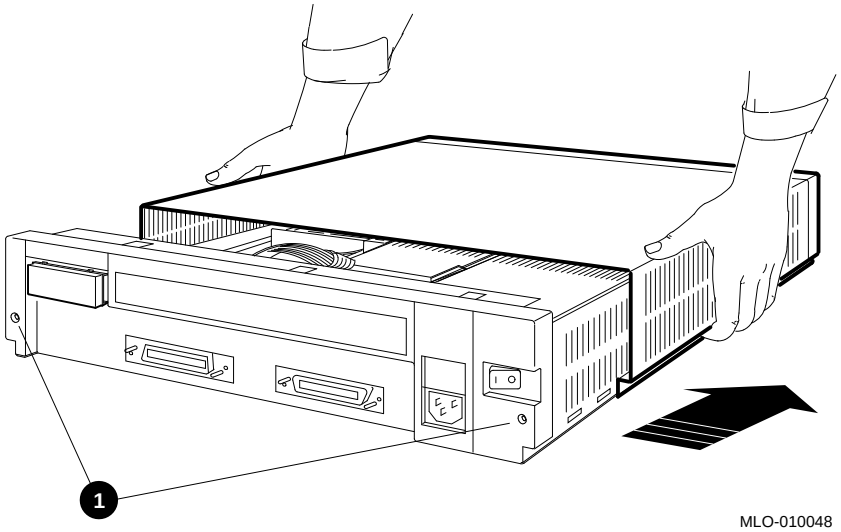
2.2.1 Turn Power Off

Turn off power first to all expander boxes, then to the system unit, and remove the power cord from the expander box to be upgraded.

2.2.2 Remove the Cover from the Expander Box

Loosen the two cover release screws on the back of the expander. Grasp each side of the cover and pull it toward you (see Figure 2–1). Then pull the cover up and away from the box.

Figure 2–1 Removing the Cover from the Expander Box



❶ Cover release screws

2.3 Installing an RF3x-EK Hard Disk Drive

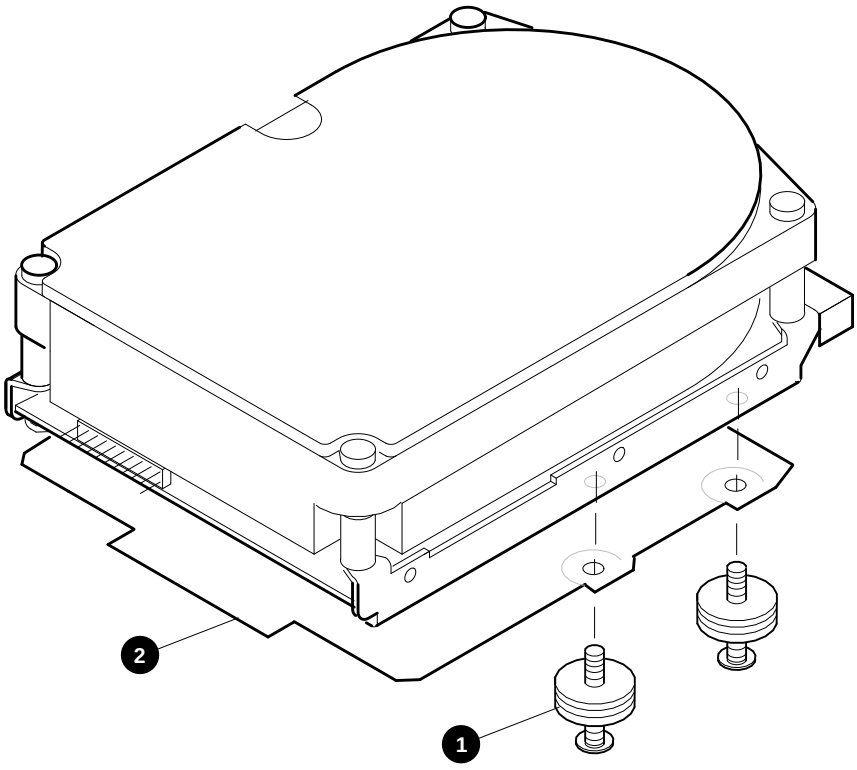
These are the general steps to install a hard disk drive in the BA42 expander box:

- Attach the drive bracket and shock isolator rubber feet (see Section 2.3.1).
- Determine the appropriate location (see Section 2.3.2).
- Connect the DSSI signal cable (see Section 2.3.3).
- Connect the power cable (see Section 2.3.4).
- Connect the Remote Front Panel (RFP) cable (see Section 2.3.5).
- Install the drive in the expander box (see Section 2.3.6).

2.3.1 Attach the Drive Bracket and Shock Isolator Rubber Feet

Using a Phillips screwdriver, attach the drive bracket and four shock isolator rubber feet to the drive as shown in Figure 2–2.

Figure 2–2 Drive Bracket



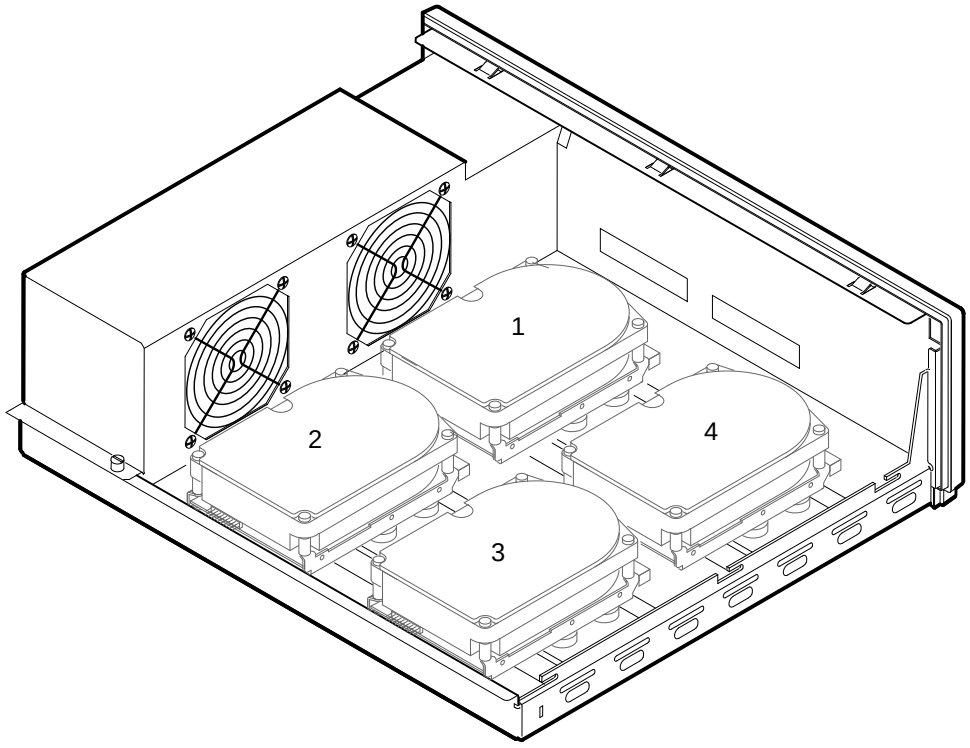
❶ Shock isolator rubber foot

❷ Drive bracket

2.3.2 Determine the Drive Location

Each RF3x-EK hard disk drive must be placed in a specific location within the BA42 expander box. Figure 2–3 shows the appropriate location for the first and all subsequent drives.

Figure 2–3 Drive Locations Inside the BA42 Expander Box



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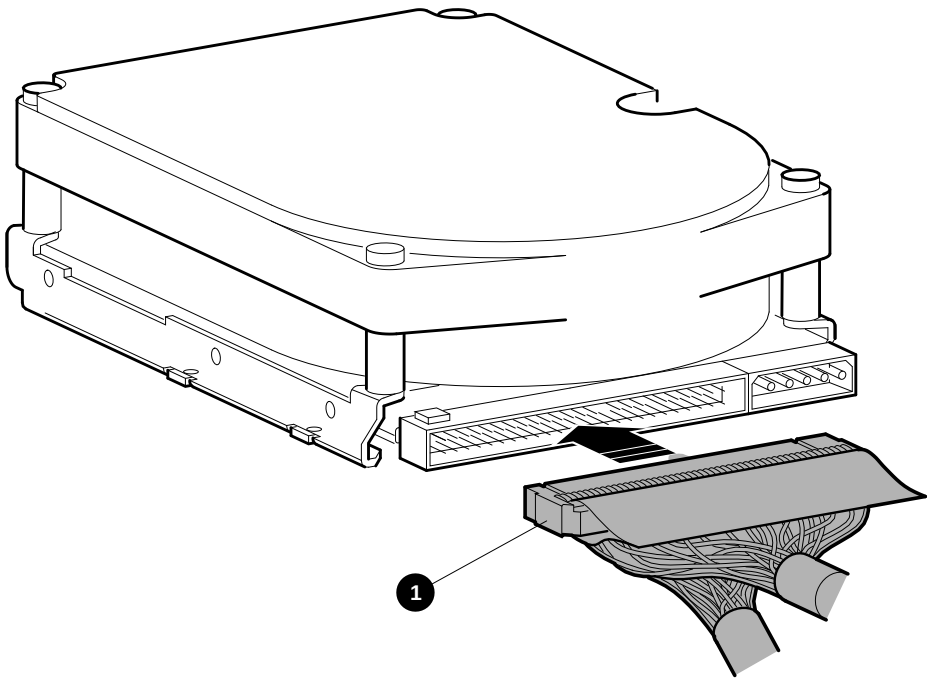
2.3.3 Connect the 50-Pin DSSI Cable

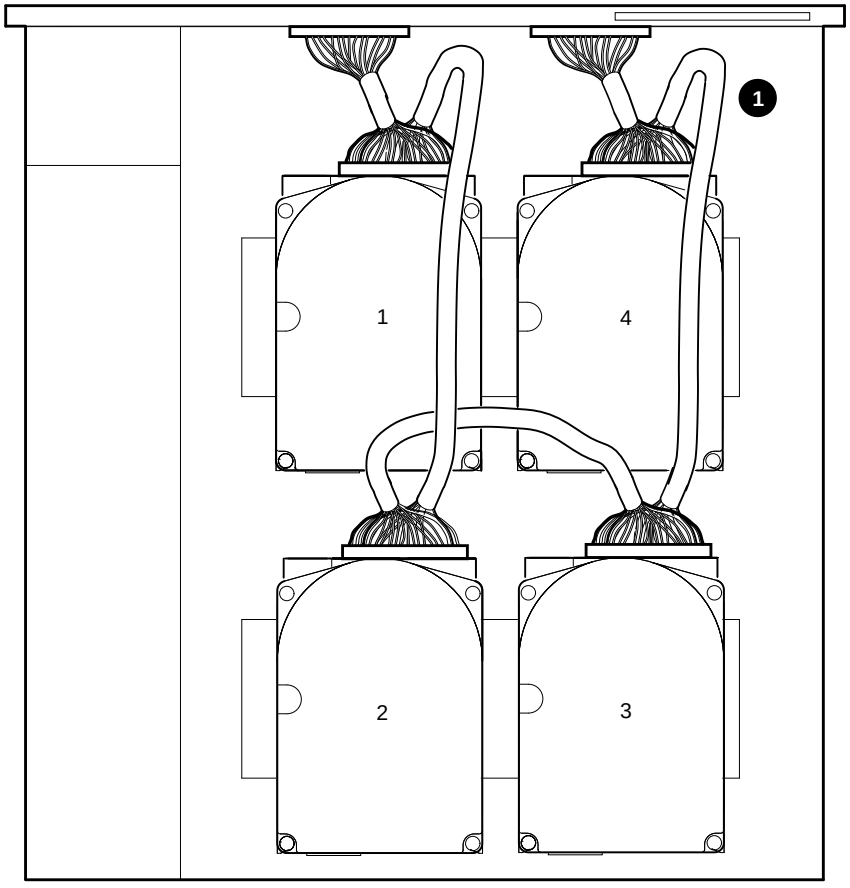
Connect the appropriate 50-pin DSSI connector to the drive (see Figure 2–4). The keyed tab on the bottom of the connector slides into the corresponding slot on the drive. The drive must only be attached to the DSSI signal cable with the appropriate connector for that drive (see Figure 2–5 to determine which connector to use for each drive).

Figure 2–4 Connecting 50-Pin DSSI Signal Cable



❶ Signal cable

Figure 2–5 50-Pin DSSI Signal Cable in the Expander Box



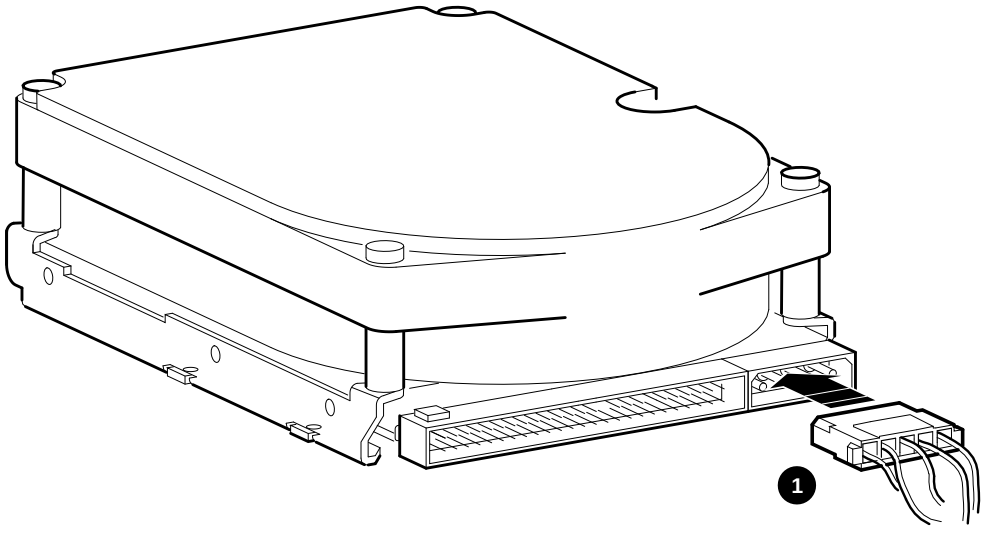
❶ Signal cable

2.3.4 Connect the 5-Pin Power Cable

Connect the appropriate 5-pin power connector to the drive. The keyed tab on top of the connector slides into the corresponding slot on the drive, as shown in Figure 2–6. The drive must only be attached to the power cable with the appropriate connector for that drive (see Figure 2–7 and Figure 2–8 to determine which connector to use for each drive).

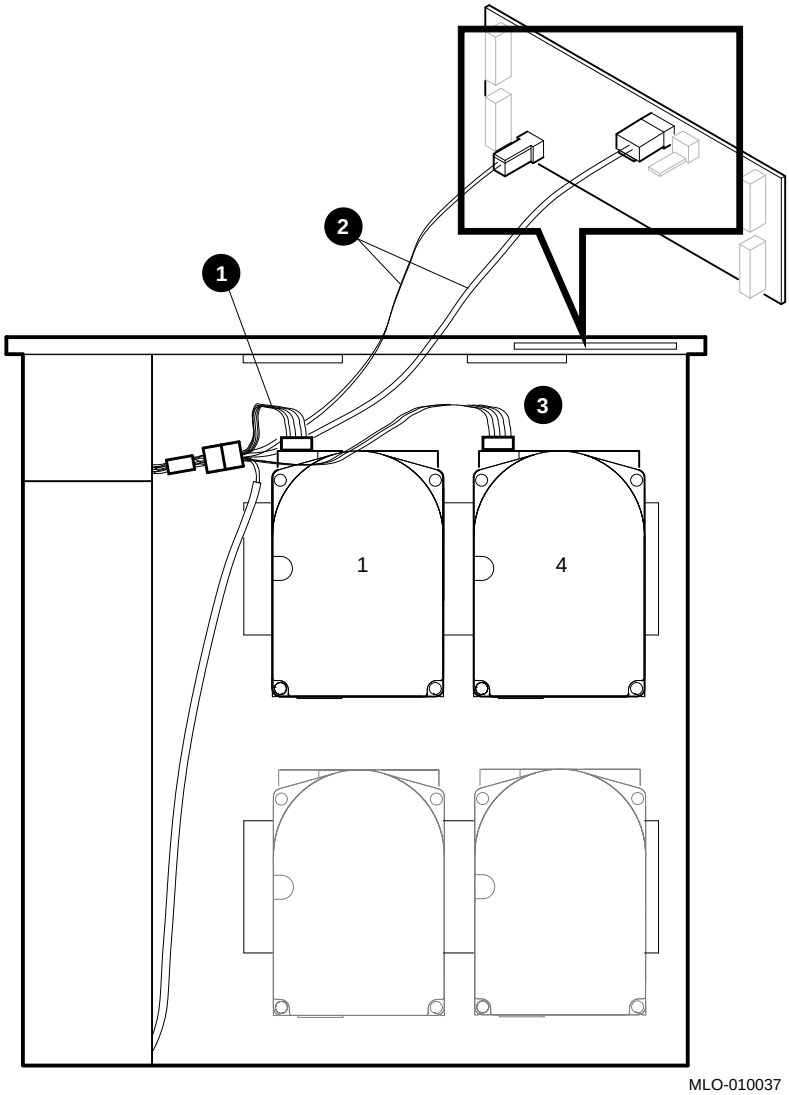
The connections to the Remote Front Panel (RFP) detailed in Figure 2–7 and Figure 2–8 will already be in place; they are included here as an aid in troubleshooting.

Figure 2–6 Connecting the 5-Pin Power Cable



❶ Power cable

Figure 2–7 Power Cables for Drives 1 and 4 in the Expander Box

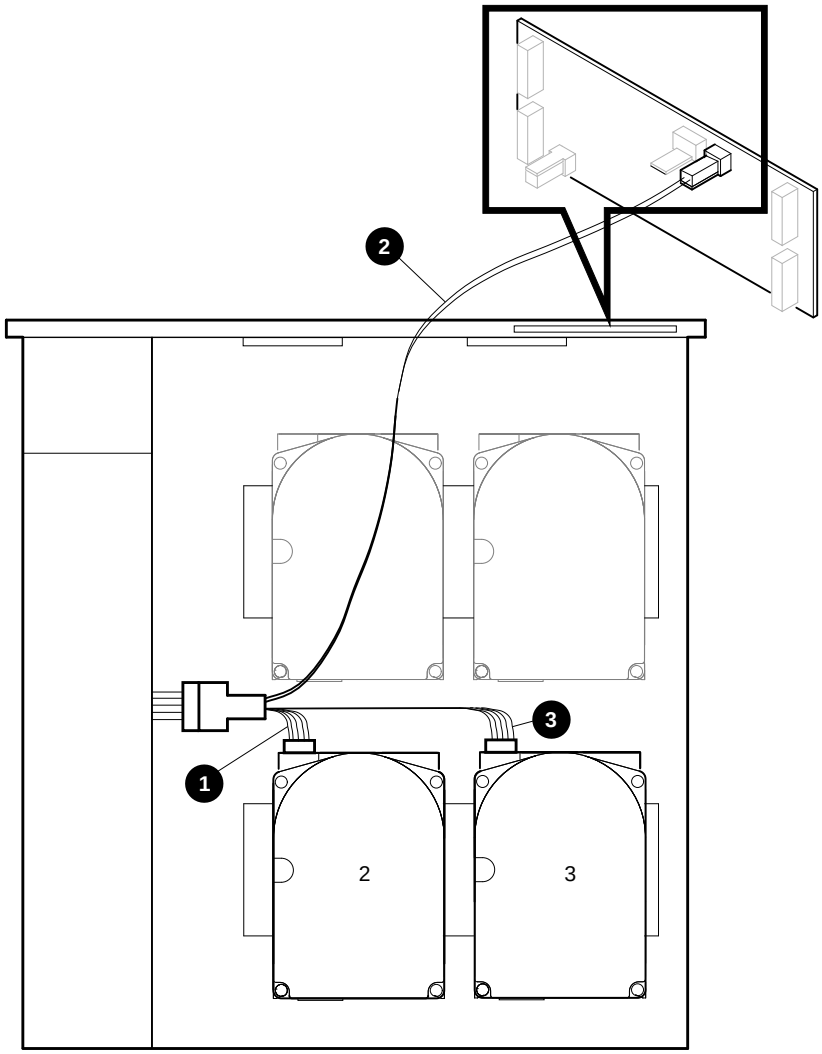


❶ Drive 1 power cable

❷ RFP connectors

❸ Drive 4 power cable

Figure 2–8 Power Cables for Drives 2 and 3 in the Expander Box



❶ Drive 2 power cable

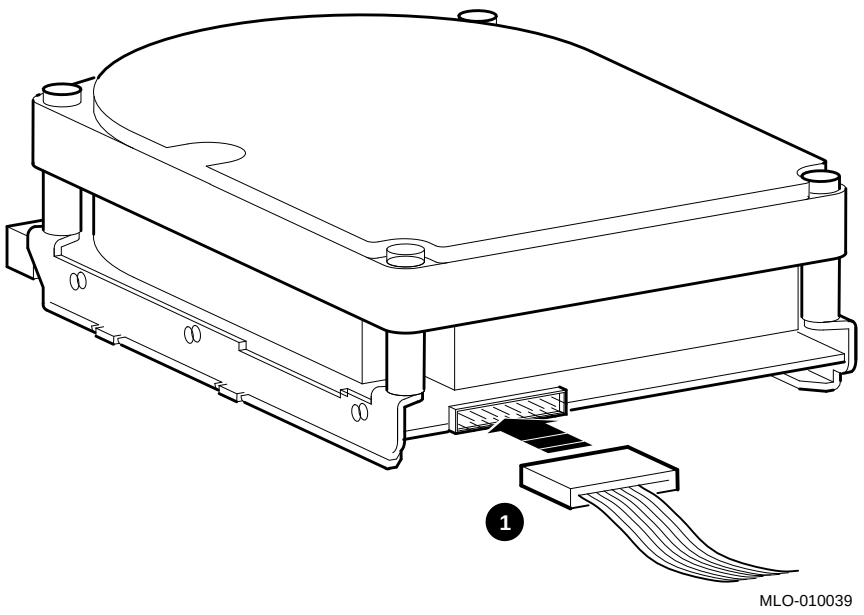
❷ RFP connector

❸ Drive 3 power cable

2.3.5 Connect the 12-Pin RFP Cable

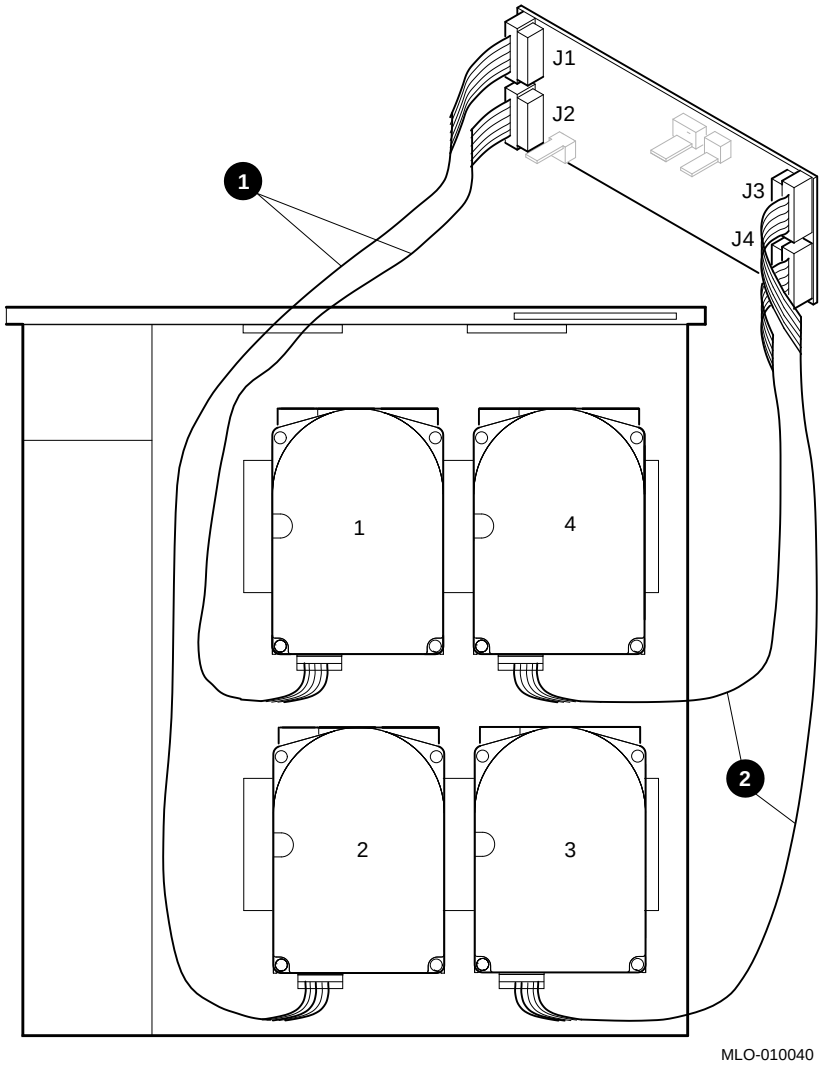
The Remote Front Panel cables will already be in place on the RFP. Attach the appropriate RFP cable to the drive. The cable is attached so that it extends downward from the drive as shown in Figure 2–9. The drive must only be attached to the appropriate RFP cable for that drive (see Figure 2–10 to determine which cable to use for each drive).

Figure 2–9 Connecting the RFP Cable



❶ RFP cable

Figure 2–10 RFP Cables in the Expander Box



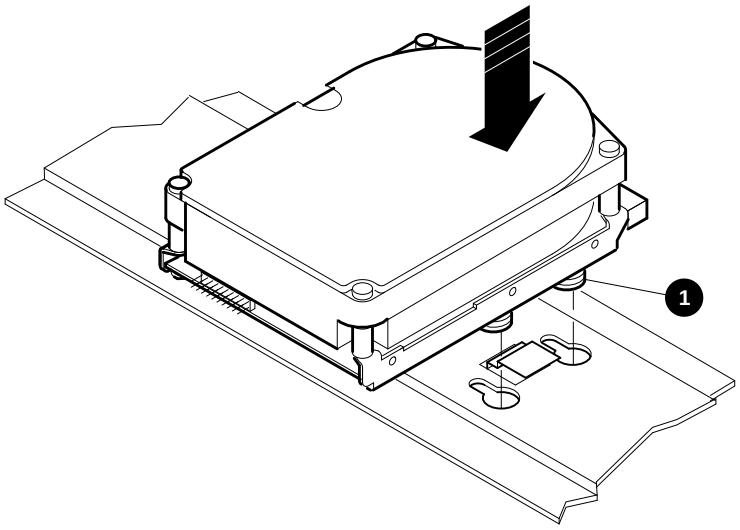
❶ RFP cables for drives 1 and 2

❷ RFP cables for drives 4 and 3

2.3.6 Install the Drive in the Expander Box

Tilt the drive until you can place the shock isolator rubber feet on the bottom of the drive into the four keyhole-shaped openings in the floor of the box. See Figure 2–11.

Figure 2–11 Inserting an RF3x-EK Hard Disk Drive in the Expander Box



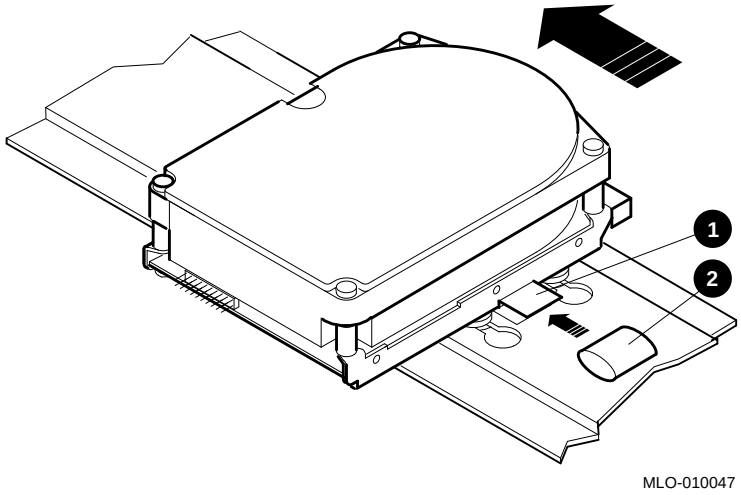
❶ Shock isolator rubber foot

Slide the drive toward the small end of the keyhole-shaped openings so that the slots on the shock isolator rubber feet engage the hole, and the metal spring tab on the expander box floor fits into the appropriate slot on the drive bracket (see Figure 2–12).

Note

Support is required if the expander box is to be shipped or moved; in that case, insert a rubber drive shipping bracket support (shown in Figure 2–12) into the metal retaining slot for each drive.

Figure 2–12 Fastening an RF3x-EK Hard Disk Drive in the Expander Box



❶ Metal spring tab

❷ Rubber drive shipping bracket support

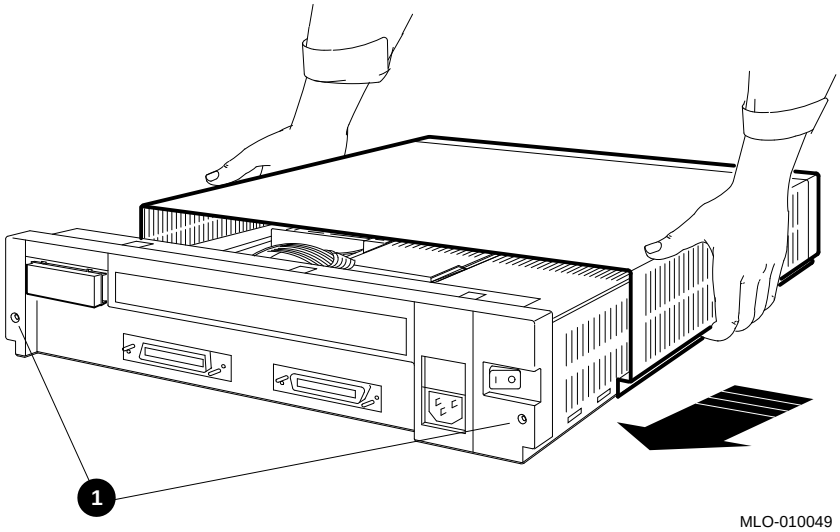
2.3.7 Replace the Cover on the Expander Box

Position the cover so it rests on top of the box about 3 inches short of the back of the box. Move the cover straight toward the back of the box until it slips into place (see Figure 2–13). Tighten the two cover release screws on the back of the box and plug in the power cord.

Caution

Make sure the internal cables are pushed down into the box before replacing the cover. Closing the cover on the cables may damage the cables.

Figure 2–13 Replacing the Cover on the BA42 Expander



❶ Cover release screws

2.4 DSSI ID Switch Settings

The three DSSI ID switches on the back of the box determine the DSSI ID switch setting for the first drive (see Section 1.4).

The DSSI IDs for additional hard drives are automatically incremented by one as the drives are added and brought on line; no further action is necessary. To verify the system configuration, see Section 1.8.

Reader's Comments

BA42 DSSI Expander Installation Manual
EK–BA42C–IN. A01

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