VAX 4000

BA42B-Based System DSSI Upgrade Manual

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Contents

Preface vii

1 Overview of the Conversion Process

1.1 In This Chapter 1–1
1.2 Overview of the Conversion Processes 1–1

2 Upgrading the VAX 4000 Model 100 System

2.1 In This Chapter 2–1
2.2 Overview of the Conversion of a VAX 4000 Model 100 2–1
2.3 Unpacking the Kit 2–2
2.4 Installing the Firmware and Upgrading VMS 2–4
2.5 Installing the Dual DSSI Daughter Card 2–4

3 Upgrading the VAX 4000 Model 100A System

3.1 In This Chapter 3–1
3.2 Overview of the Conversion of a VAX 4000 Model 100A 3–1
3.3 Unpacking the Kit 3–2
3.4 Before Installing the Kit 3–3
3.5 Installing the Dual DSSI Daughter Card 3–4

A Mandatory Daughter Card Return Procedure and Forms

A.1 Return Procedure A–1
A.2 Return Forms A–2
A.3 Customer Administrative Services (CAS) District Offices A–11

Figures

2–1	Disconnecting the Power Cord	2–5
2–2	Disconnecting the External Cables/Terminators from the Port Cover	2–6
2–3	Removing the Enclosure Cover	2–7
2–4	Unscrewing the Drive Shelves	2–8
2–5	Disconnecting the Internal Power Cables	2–9
2–6	Disconnecting Internal DSSI Connectors	2–10
2–7	Disconnecting the Internal SCSI Cable from the Mother Board	2–11
2–8	Sliding the Drive Mounting Shelves Forward	2–12
2–9	Lifting the Drive Mounting Shelves Upward	2–13
2–10	Removing the Single DSSI Daughter Card	2–14
2–11	Disconnecting the Q–bus and external SCSI Cables	2–15
2–12	Removing the Port Cover	2–16
2–13	Removing Connectors from the Port Cover	2–17
2–14	Installing the Alignment Pins on the Port Cover	2–18
2–15	Installing the Original DSSI Cable on the Port Cover	2–19
2–16	Installing the Q–bus Cable on the Port Cover	2–20
2–17	Installing the new DSSI Cable on the Port Cover	2–21
2–18	Installing the SCSI Cable on the Port Cover	2–22
2–19	Installing the Port Cover and Cables	2–23
2–20	Installing the Dual DSSI Daughter Card	2–24
2–21	Connecting the External SCSI Cable to the Mother Board	2–25
2–22	Connecting the New DSSI Cable to the Daughter Board	2–26
2–23	Connecting the Original DSSI Cable to the Daughter Board	2–27
2–24	Connecting the Q–bus Cable to the Mother Board	2–28
2–25	Aligning the Drive Mounting Shelves	2–29
2–26	Reinstalling the Drive Mounting Shelves	2–30
2–27	Securing the Drive Mounting Shelves	2–31
2–28	Reconnecting Cables and Terminators	2–32
2–29	Applying the New Medallion	2–33
3–1	Disconnecting the Power Cord	3–4
3–2	Removing the Enclosure Cover	3–5
3–3	Unscrewing the Drive Shelves	3–6
3–4	Disconnecting the Internal Power Cables	3–7

3–5 Disconnecting Internal DSSI Connectors 3–8
3–6 Disconnecting the Internal SCSI Cable from the Mother Board 3–9
3–7 Sliding the Drive Mounting Shelves Forward 3–10
3–8 Lifting the Drive Mounting Shelves Upward 3–11
3–9 Removing the Single DSSI Daughter Card 3–12
3–10 Disconnecting the Q–bus and external SCSI Cables 3–13
3–11 Removing the Port Cover 3–14
3–12 Removing the Cover Plates 3–15
3–13 Installing the Alignment Pins on the Port Cover 3–16
3–14 Installing the new DSSI Cable on the Port Cover 3–17
3–15 Installing the Port Cover and Cables 3–18
3–16 Installing the Dual DSSI Daughter Card 3–19
3–17 Connecting the External SCSI Cable to the Mother Board . . 3–20
3–18 Connecting the New DSSI Cable to the Daughter Board 3–21
3–19 Connecting the Original DSSI Cable to the Daughter Board 3–22
3–20 Connecting the Q–bus Cable to the Mother Board 3–23
3–21 Aligning the Drive Mounting Shelves 3–24
3–22 Reinstalling the Drive Mounting Shelves 3–25
3–23 Securing the Drive Mounting Shelves 3–27
3–24 Connecting Cables and Terminators 3–28

Tables

2–1 Contents of the KFDDA–CF Upgrade Kit 2–3
3–1 Contents of the KFDDA–AF Upgrade Kit 3–3

Preface

This manual describes how to upgrade a VAX 4000 Model 100 or a VAX Model 100A system by adding a dual DSSI card and two additional DSSI ports to support external DSSI devices or for building a DSSI-based VAX cluster.

Intended Audience

This document is intended for Digital Services personnel and licensed self-maintenance customers.

Customer Responsibilities

Only qualified maintenance personnel (Digital Services representatives or qualified self-maintenance customers) should perform the installation procedure.

If you are not a qualified self-maintenance customer, call Digital Services to schedule a system conversion. It is the customer's responsibility to perform a software backup before a Digital Services representative arrives at your site.

When the conversion is complete, return the original DSSI card to Digital. Appendix A contains forms that need to be completed by the Digital Services representative and signed by both the customer and the Digital Services representative.

Digital Services Responsibilities

Before arriving at the site, the Digital Services representative should contact the customer to ensure that the customer's software is backed up before arriving at the site.

After installation of the upgrade kit, the Digital Services representative must complete the forms in Appendix A and remove them from this document. The forms must be signed by the customer and the Digital Services representative.

The following forms are in Appendix A:

- Digital Services Worksheet
- Installation Receipt–Customer Copy
- Installation Receipt–Digital Services Copy
- Returned Material Checklist

The Digital Services representative should give the customer the signed Installation Receipt–Customer Copy. The representative should include the signed Installation Receipt–Digital Services Copy with the DSSI card that is being returned to Digital to ensure that the customer receives credit.

Organization

This document contains three chapters and one appendix:

- Chapter 1 contains an overview of the upgrade process.
- Chapter 2 provides detailed upgrade conversion procedures for a VAX 4000 Model 100.
- Chapter 3 provides detailed upgrade conversion procedures for a VAX 4000 Model 100A.
- Appendix A contains forms for the return of the original DSSI card and a list of the Customer Administrative Services (CAS) district offices.

Conventions

The following conventions are used in this guide:

Convention	Description
x	A lowercase italic *x* indicates the generic use of a letter. For example, *xxx* indicates any combination of three alphabetic characters.
italic type	Italic type emphasizes important information or indicates variables. It is also used for the titles of manuals.
boldface type	Boldface type in examples indicates either user input or the first instance of terms defined in the text.
nn nnn.nnn nn	A space character separates groups of 3 digits in numerals with 5 or more digits. For example, *10 000* equals *ten thousand*.
n.nn	A period in numerals signals the decimal point indicator. For example, *1.75* equals *one and three-fourths*.
MONOSPACE	Text displayed on the screen is shown in monospaced type.
Radix indicators	The radix of a number is written as a word enclosed in parentheses. For example, 23(decimal) or 34(hexadecimal).
UPPERCASE	A word in uppercase indicates a command.
Note	A note contains information that is of special importance to the user.
Caution	A caution contains information to prevent damage to the equipment.

Related Documents

The following list contains related documents:

Documentation	Order Number
VAX 4000 Model 100A Installation Information	EK–502AA–IN
VAX 4000 Model 100A Operator Information	EK–503AA–OP
VAX 4000 Model 100A Customer Technical Information	EK–504AA–TI
VAX 4000 Model 100A Troubleshooting and Diagnostics Information	EK–505AA–TS
Updating VAX 4000–10nA or MicroVAX 3100–9n CPU Firmware	EK–VX4FW–UP

1

Overview of the Conversion Process

1.1 In This Chapter

This chapter describes the general process for upgrading a VAX 4000 Model 100 or Model 100A system by adding a dual DSSI card and two additional DSSI ports to support external DSSI devices, or for building a DSSI-based VAXcluster.

1.2 Overview of the Conversion Processes

Tasks required to upgrade VAX 4000 models are summarized below. To begin the actual conversion, turn to Chapter 2 for the conversion of a VAX 4000 Model 100, or Chapter 3 for the conversion of a VAX 4000 Model 100A.

The VAX 4000 Model 100A is identical to the VAX 4000 Model 100, except that the port cover is designed to accomodate a dual DSSI port.

The conversion of a VAX 4000 Model 100A to a dual DSSI configuration includes installing a new multi-host, two-port DSSI cable in the existing port cover, and replacing the single DSSI daughter card with a new dual DSSI daughter card. The existing one-port DSSI bus will remain to serve the internal drives. These procedures are described in detail in Chapter 3.

The conversion of a VAX 4000 Model 100 to a dual DSSI configuration includes upgrading it to a VAX 4000 Model 100A with a new port cover and the associated firmware and operating system upgrades, as well as installing the new DSSI cable and dual DSSI daughter card. This conversion also includes replacement of the system medallion. These procedures are described in detail in Chapter 2.

2

Upgrading the VAX 4000 Model 100 System

2.1 In This Chapter

This chapter lists detailed step-by-step procedures for upgrading a VAX 4000 Model 100 system.

2.2 Overview of the Conversion of a VAX 4000 Model 100

Tasks required to upgrade a VAX 4000 Model 100 are summarized below. To begin the actual conversion, turn to Section 2.3.

1. Have the customer back up the system software.
2. Unpack and verify the conversion kit.
3. Upgrade the firmware.
4. Upgrade the VMS disk 5.5-2H4.
5. Shut down the operating system.
6. Turn off the system power and remove the power cord.
7. Disconnect all external cables.
8. Remove the enclosure cover.
9. Remove the upper and lower drive mounting shelves.
10. Disconnect the DSSI cable from the original single DSSI daughter card.
11. Disconnect and remove the single DSSI daughter card.
12. Disconnect all internal cables from the port cover to the mother or daughter boards or the drives.
13. Disconnect all the external cables from the port cover.
14. Remove the present port cover with attached cables.

15. Remove all attached cables from the present port cover for use on the new one.
16. Install the alignment pins with washers on the new port cover.
17. Install the internal cables on the new port cover.
18. Install the new port cover with its connectors onto the rear of the system box, feeding the cables through the cutouts in the system box.
19. Install the new dual DSSI daughter card onto the mother board.
20. Connect all cables to the mother and daughter boards.
21. Reinstall the upper and lower drive mounting shelves in the system box, and connect the internal SCSI cable to the mother board.
22. Reinstall the enclosure cover.
23. Connect the power cable, signal cables, and terminators to the system as desired.
24. Remove the system medallion and install the new one.
25. Have the customer reinstall system data (if necessary).
26. Fill out the appropriate paperwork (Appendix A).
27. Return the original daughter card as instructed (Appendix A).

2.3 Unpacking the Kit

Unpack the kit as follows:

1. Make sure there is no external damage to the shipping container, such as dents, holes, or crushed corners.
2. Unpack the conversion kit and check its contents against the shipping invoice. Table 2–1 lists the kit contents for the Model 100 upgrade, KFDDA–CF. Other items may be present, but are not required for this conversion.

CAUTION

Modules can be damaged by static discharge if an antistatic wrist strap and antistatic mat are not used during handling. The wrist strap and mat are in the antistatic kit in the Digital Services toolkit.

3. Unpack the dual DSSI daughter card and place it on a grounded antistatic mat.
4. Save the packing material, and use it to return the original single DSSI daughter card.
5. If any item is missing or damaged:
   - Contact the customer's sales representative.
   - Contact the customer's delivery agent.

Table 2–1 Contents of the KFDDA–CF Upgrade Kit

Description	Part Number	Quantity
Dual shac daughter card	54–22444–01	1
Pin aligner	12–30363–01	6
DSSI terminator	12–29258–01	2
DSSI in/out cable	17–03778–01	1
VAX 4000–100A medallion	74–37642–31	1
Port cover	74–46957–01	1
Flat washer	90–08877–00	6
Flat head screw	90–10917–01	6
DSSI upgrade manual	EK–500AA–UP	1
Firmware upgrade[1]	QZ–004AA–FW	1
VMS upgrade[2]	QA–001AA–UW	1
User documentation set, English[3]	QA–00HAA–GZ	1
User documentation set, multi-lingual[2]	QA–00H8A–GZ	1

[1]Includes firmware documentation, EK–VX4FW–UP.

[2]Only one VMS upgrade will be included in this kit; which one is included will depend upon the customer's order.

[3]Only one documentation set will be included in this kit.

2.4 Installing the Firmware and Upgrading VMS

Before installing the hardware, it is necessary to install the firmware and upgrade VMS as follows:

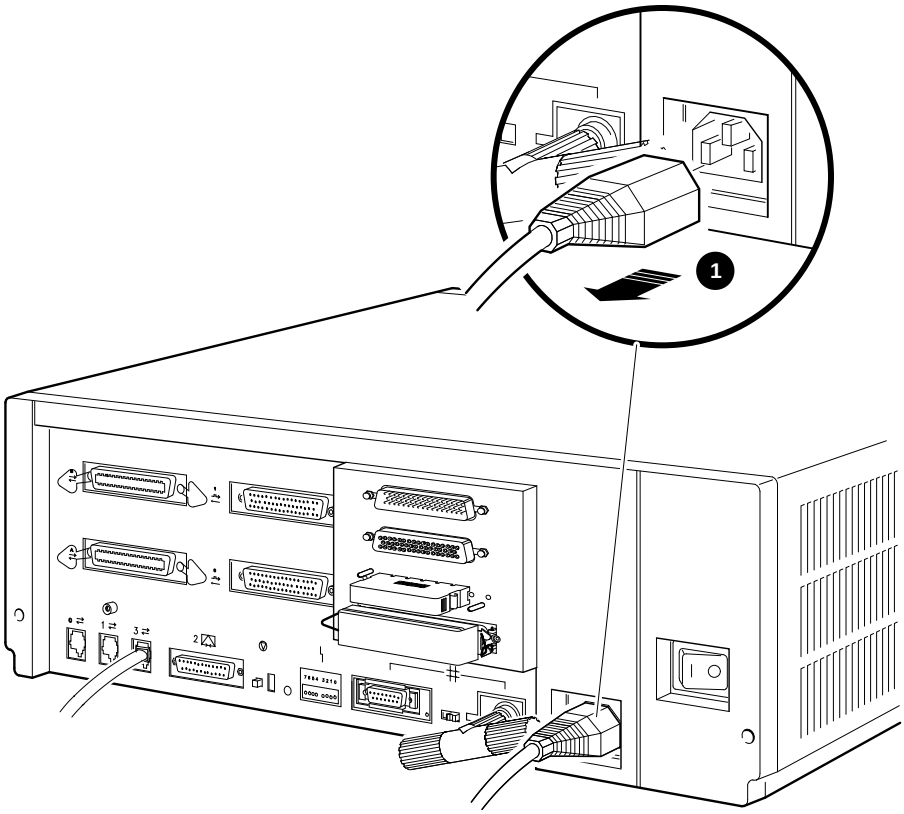
1. Have the customer back up the system software before the Digital Services representative arrives. It is the customer's responsibility to back up the system software.
2. Power up the system and run diagnostics to verify system operation.
3. Upgrade the firmware using *Updating Your VAX 4000–10nA or MicroVAX 3100–9n CPU Firmware*, EK–VX4FW–UP.
4. Upgrade the VMS disk 5.5-2H4.
5. Shut down the operating system in the proper manner.
6. Turn off the system power before installing the kit.

2.5 Installing the Dual DSSI Daughter Card

To install the new daughter card and related hardware (convert to dual DSSI configuration):

1. Disconnect the power cord (see Figure 2–1).

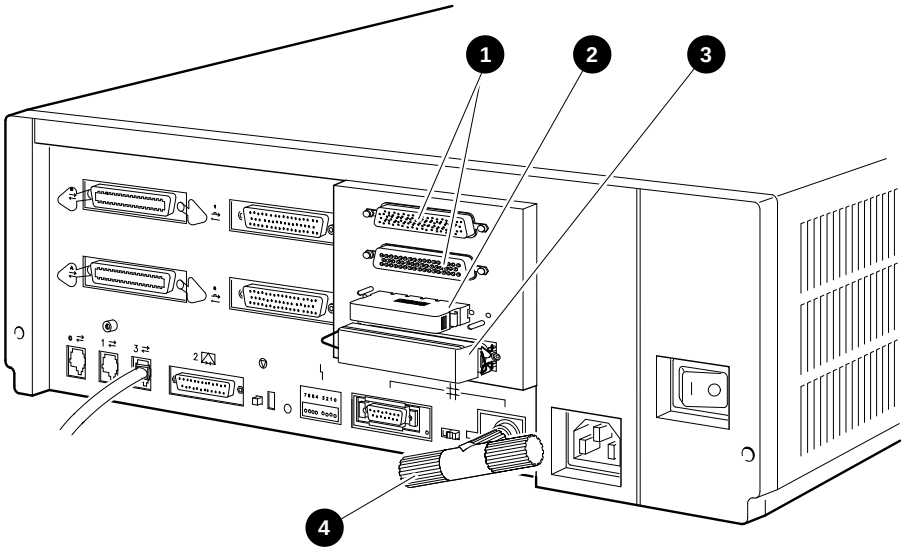
Figure 2–1 Disconnecting the Power Cord



❶ Power cord

2. Disconnect all the external cables or terminators from the present port cover, and save the screws (see Figure 2–2).

Figure 2–2 Disconnecting the External Cables/Terminators from the Port Cover



❶ Q–bus ports (Q–bus cables may be attached)

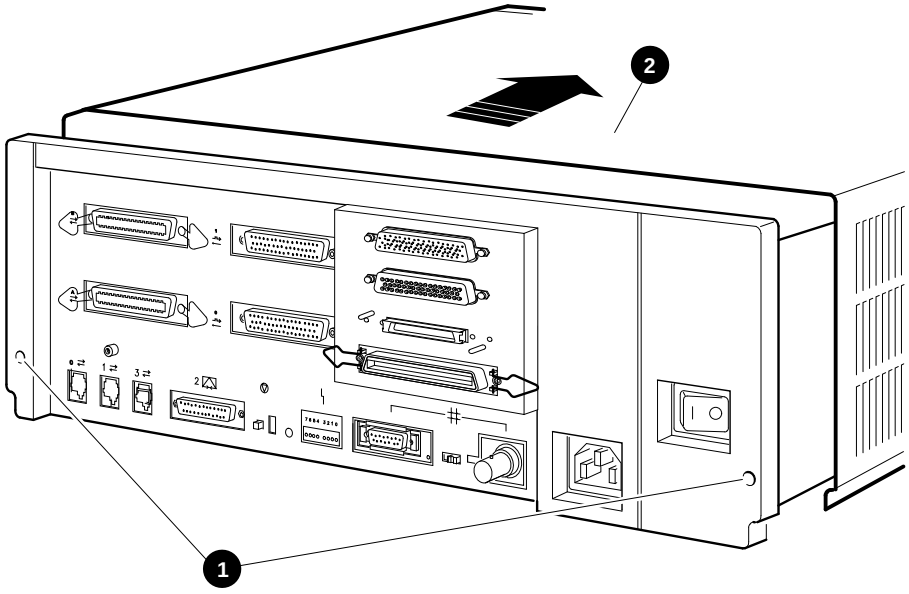
❷ DSSI terminator or cable

❸ SCSI terminator or cable

❹ Ethernet connector

3. Remove the enclosure cover by removing the two screws at the rear of the system box and sliding it forward (see Figure 2–3).

Figure 2–3 Removing the Enclosure Cover



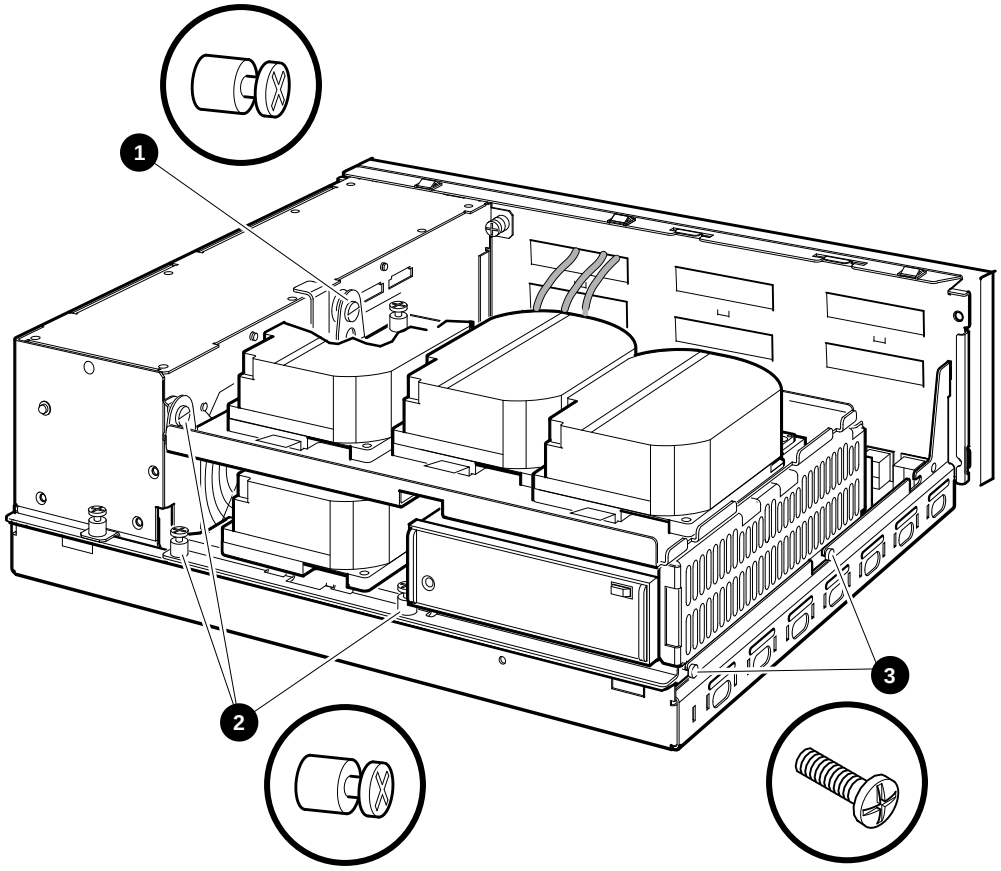
MLO-010801

❶ Screws

❷ Enclosure cover

4. Remove the upper and lower drive mounting shelves together as a single unit (it is not necessary to disassemble the shelves themselves). Unscrew all six screws from the shelves, leaving the topmost captive screw until last for support. Leave the captive screws in position and save the Phillips screws for reinstallation of the shelves (see Figure 2–4).

Figure 2–4 Unscrewing the Drive Shelves



MLO-010802

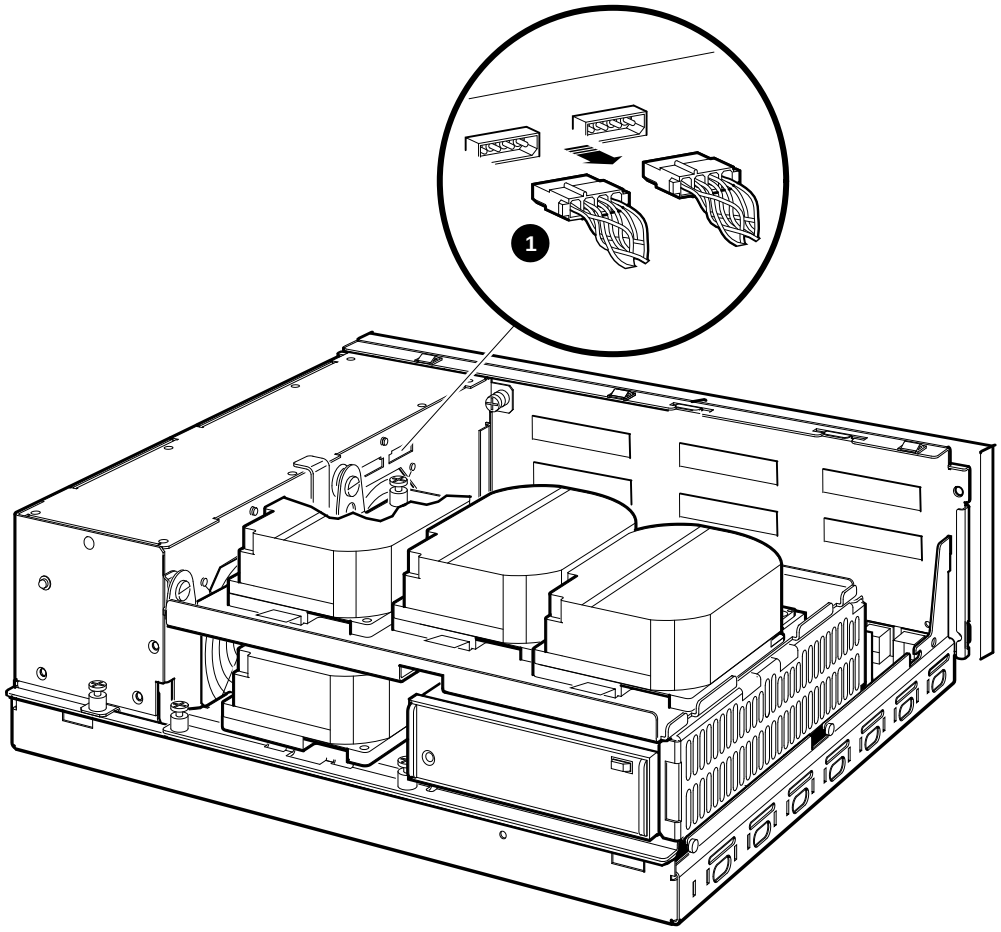
❶ Topmost captive screw

❷ Other captive screws

❸ Phillips screws

5. Disconnect the internal power cables from the power supply (Figure 2–5).

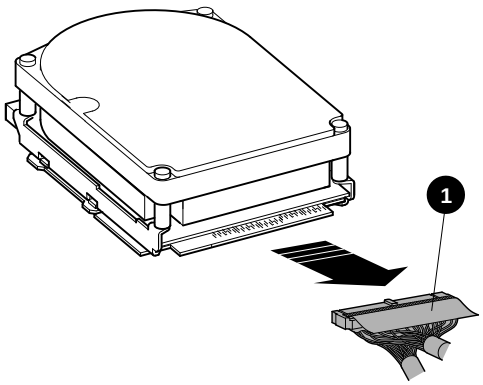
Figure 2–5 Disconnecting the Internal Power Cables



❶ Internal power cables

6. Disconnect the internal DSSI connectors from all drives mounted on the shelves. It is not necessary to disconnect the power cable from each drive. Figure 2–6 shows one drive as an example.

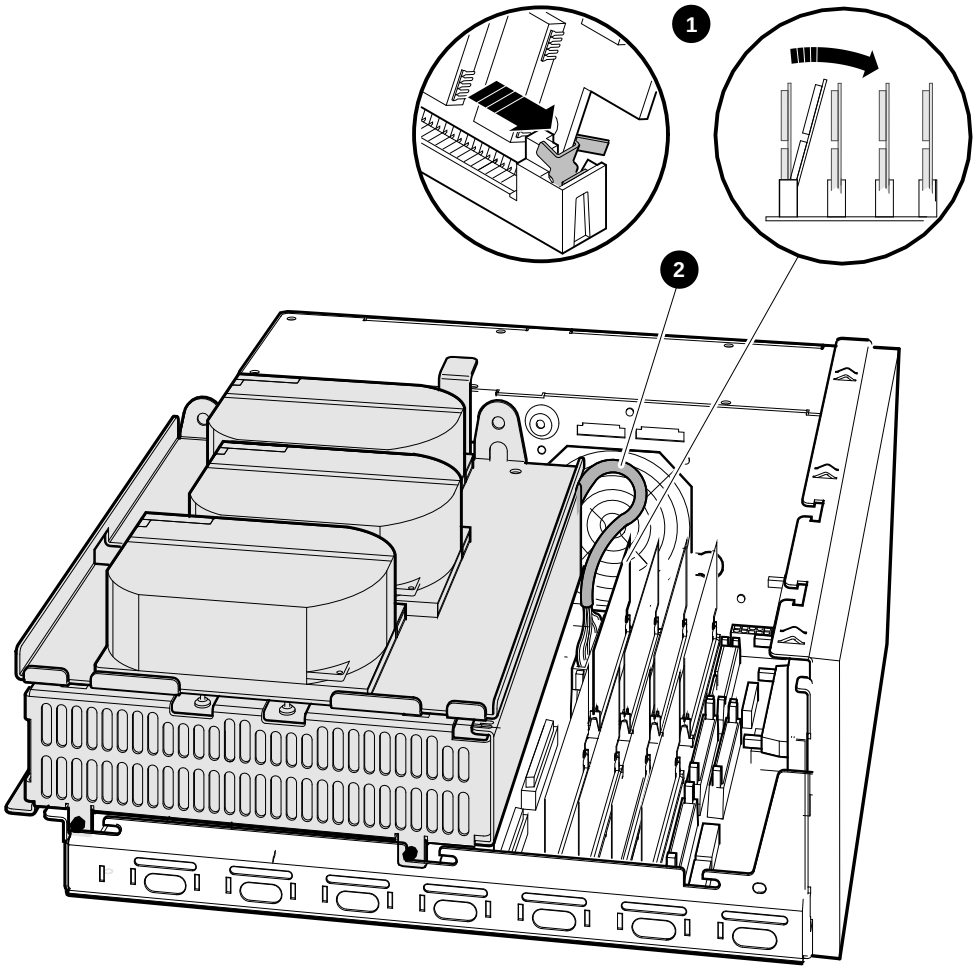
Figure 2–6 Disconnecting Internal DSSI Connectors



❶ Internal DSSI connectors

7. Disconnect the internal SCSI cable from the mother board (see Figure 2–7).
   1. Release the memory module nearest the internal SCSI connector by pressing the tabs on each end, and tip it forward.
   2. Disconnect the internal SCSI cable from its connector on the mother board.

Figure 2–7 Disconnecting the Internal SCSI Cable from the Mother Board

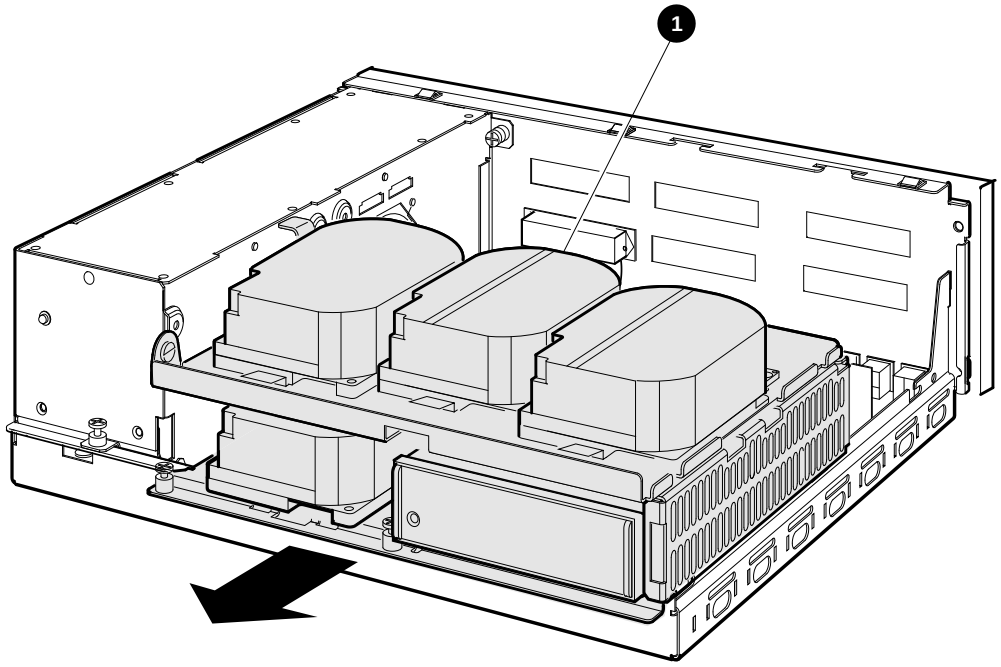


❶ Releasing the memory module and tipping it forward.

❷ Internal SCSI cable

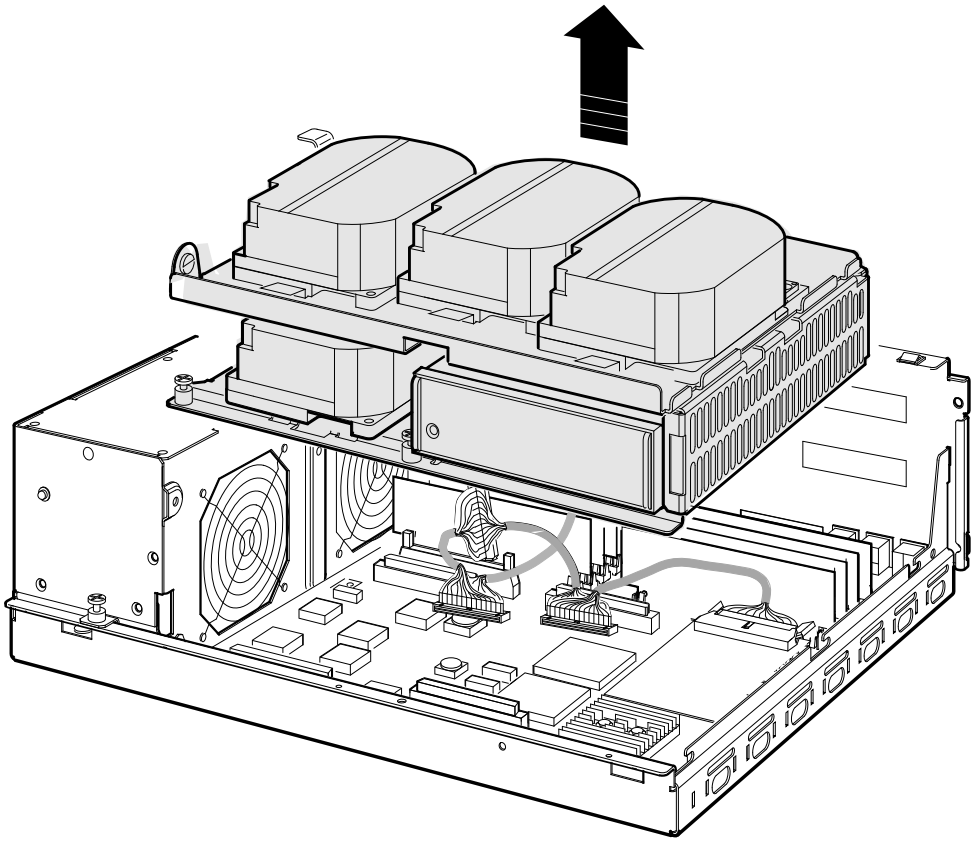
8. Remove the shelves by sliding them forward (see Figure 2–8) and lifting them up and away from the enclosure (see Figure 2–9). Leave the memory module tipped forward until the shelves are reinstalled.

Figure 2–8 Sliding the Drive Mounting Shelves Forward



❶ Drive mounting shelves

Figure 2–9 Lifting the Drive Mounting Shelves Upward



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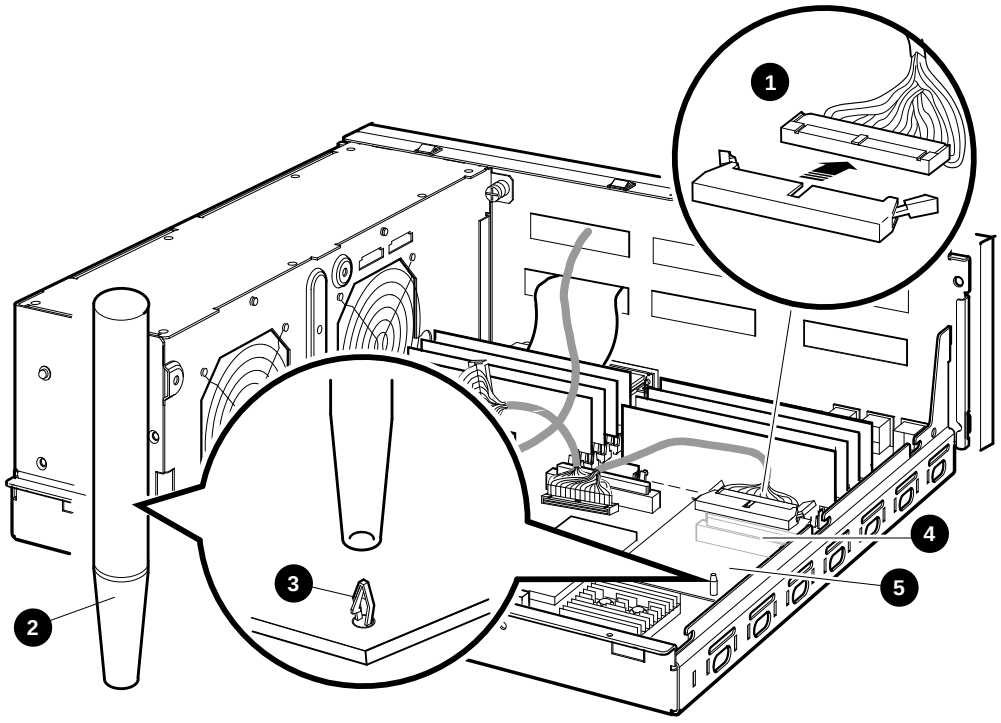
9. Disconnect the DSSI cable from the original single DSSI daughter card (see Figure 2–10).
10. Remove the original single DSSI daughter card by gently prying it loose from its connector on the mother board, and using a standoff removal tool to compress the post so that the corner of the card can be lifted off the standoff (Figure 2–10). Lift the card out and place it on an anti-static mat.

Figure 2–10 Removing the Single DSSI Daughter Card



❶ DSSI connector

❷ Standoff removal tool

❸ Standoff

❹ Daughter card connector on the mother board

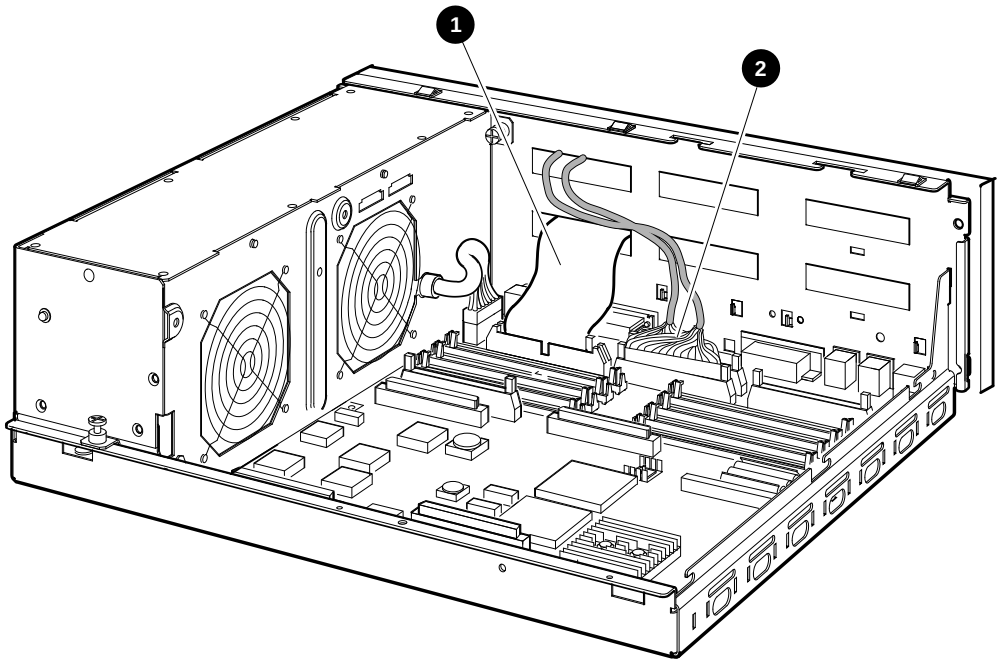
❺ Single DSSI daughter card

11. Disconnect the Q–bus cable from the mother board (see Figure 2–11).
12. Disconnect the external SCSI cable, which runs from the port cover to the mother board, at the connector on the mother board (Figure 2–11).

Note

Memory modules and other cables in Figure 2–11 have been removed for clarity.

Figure 2–11 Disconnecting the Q–bus and external SCSI Cables

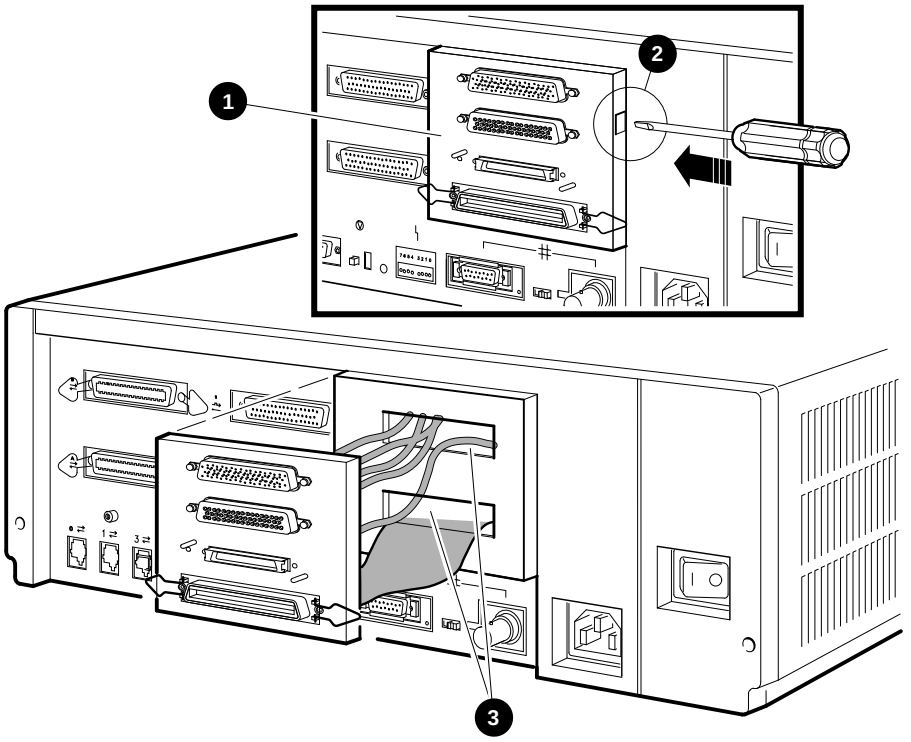


❶ External SCSI cable

❷ Q–bus cable

13. Remove the present port cover by pushing the tabs on each side (see Figure 2–12). The tabs are accessed through the tab cutouts on the port cover. Slide the cover off, pulling all cables carefully through the cable slots on the rear of the system box.

Figure 2–12 Removing the Port Cover



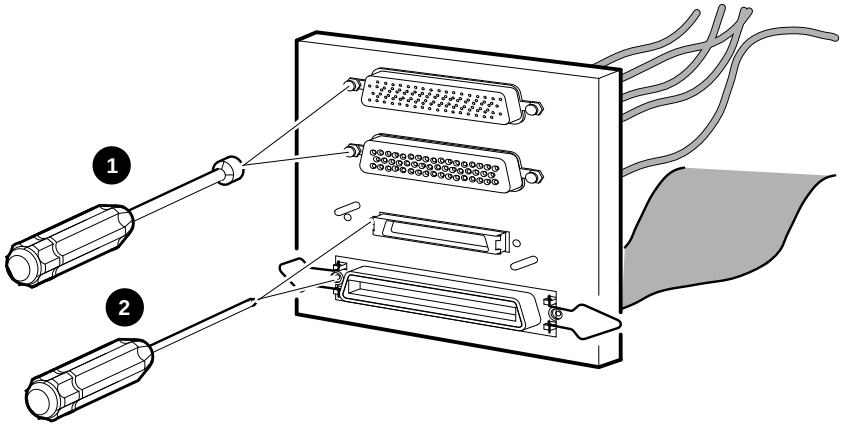
❶ Port cover

❷ Tab cutout

❸ Cable slots on rear of the system box

14. Remove all connectors from the original port cover (see Figure 2–13). Save the screws, nuts, and washers for use in connecting the new dual DSSI port cover.

Figure 2–13 Removing Connectors from the Port Cover

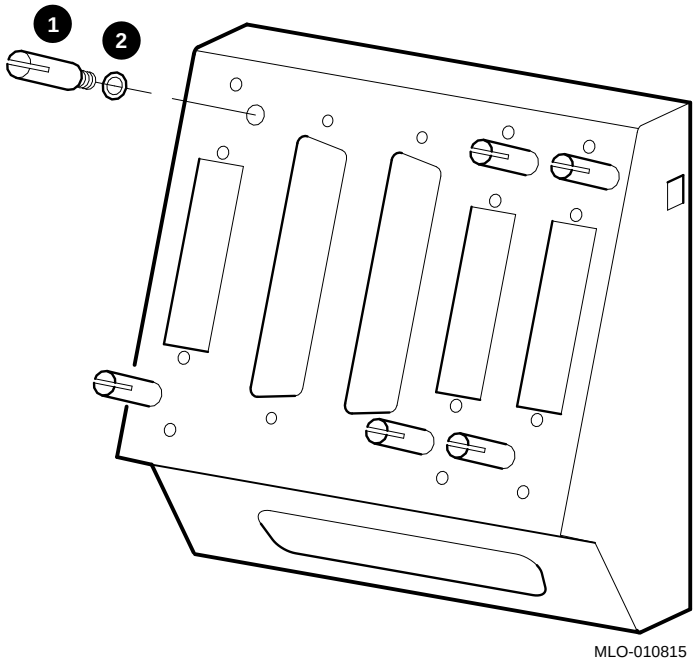


❶ Nut driver used for bolts on the Q–bus connectors

❷ Phillips screwdriver used on the DSSI and SCSI connectors

15. Install the six alignment pins with washers on the new port cover (see Figure 2–14).

Figure 2–14 Installing the Alignment Pins on the Port Cover

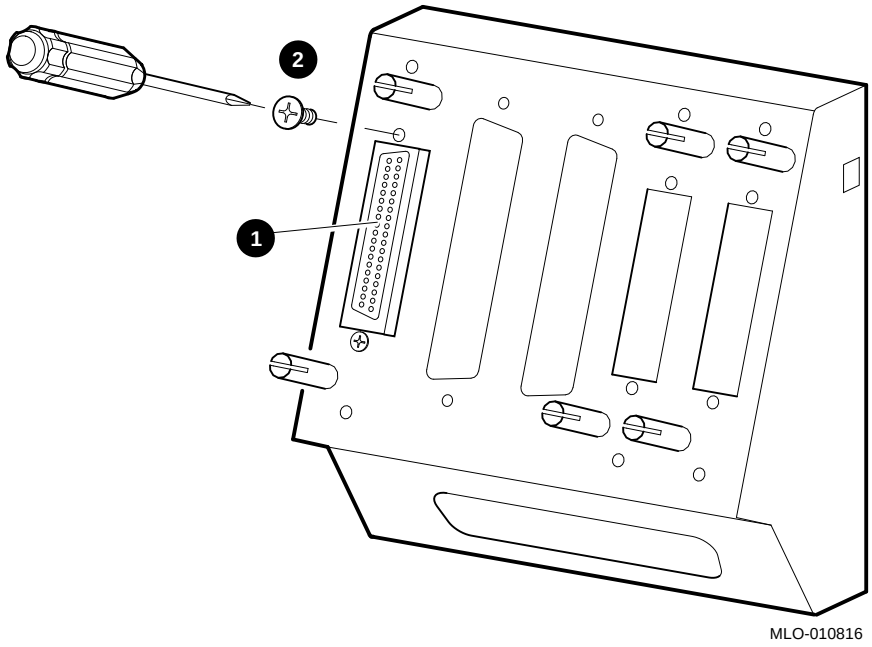


❶ Alignment pin

❷ Washer

16. Reinstall the original DSSI cable (17–03544–01) (the one previously used in the system) into the left-hand DSSI port cutout (see Figure 2–15).

Figure 2–15 Installing the Original DSSI Cable on the Port Cover

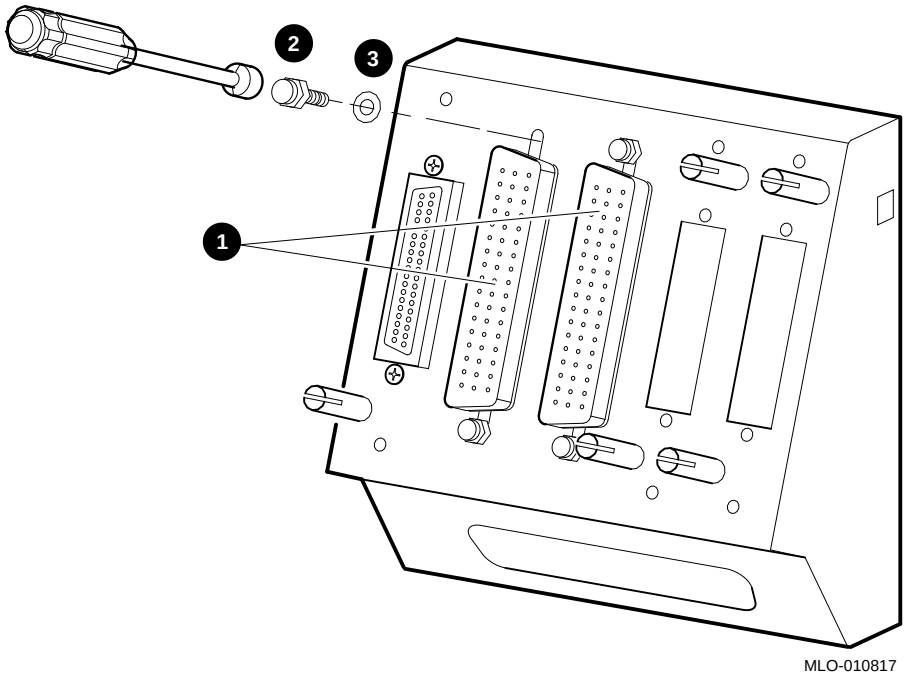


❶ Original DSSI cable connector

❷ Pillips screwdriver

17. Install the Q–bus cable (17–03545–01) into the Q–bus cutouts on the port cover (see Figure 2–16).

Figure 2–16 Installing the Q–bus Cable on the Port Cover



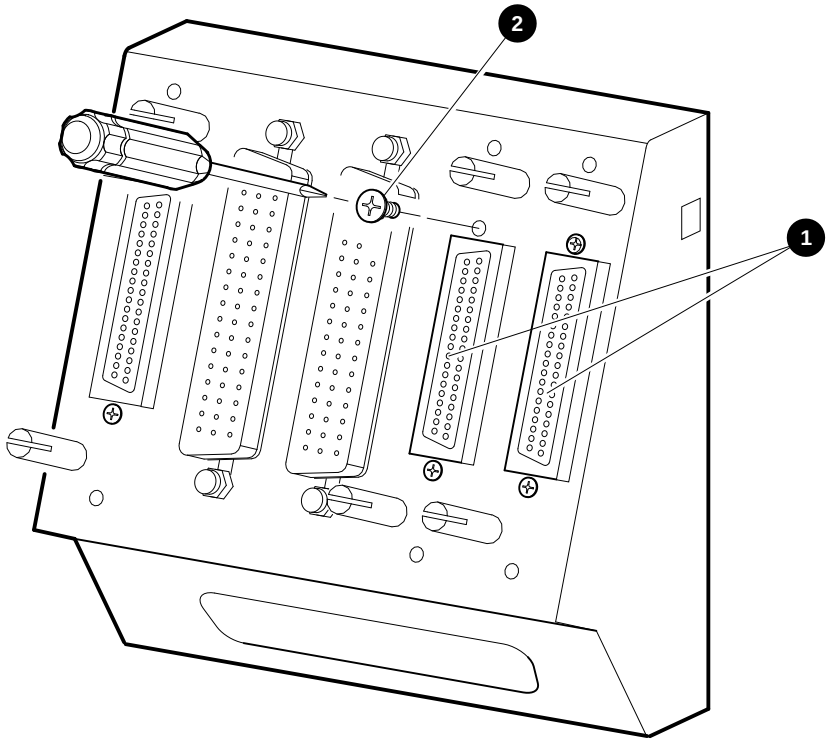
❶ Q–bus cable connectors

❷ Nutdriver and bolt

❸ Washer

18. Install the DSSI in/out cable which was included in the upgrade kit (17–03778–01) into the two right-hand DSSI external cutouts on the new port cover (see Figure 2–17).

Figure 2–17 Installing the new DSSI Cable on the Port Cover

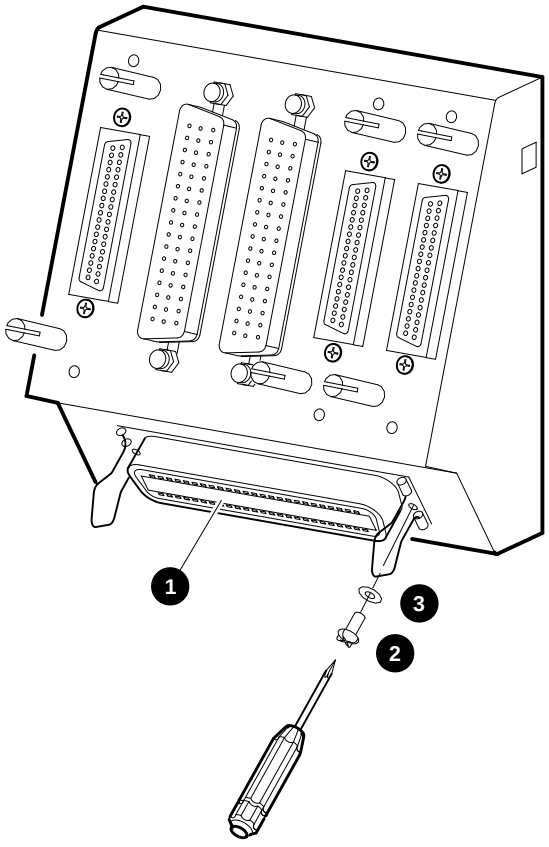


❶ New DSSI cable connectors

❷ Phillips screwdriver and screw

19. Install the SCSI cable (17–2944–01) into the SCSI cutout on the bottom of the port cover (see Figure 2–18).

Figure 2–18 Installing the SCSI Cable on the Port Cover



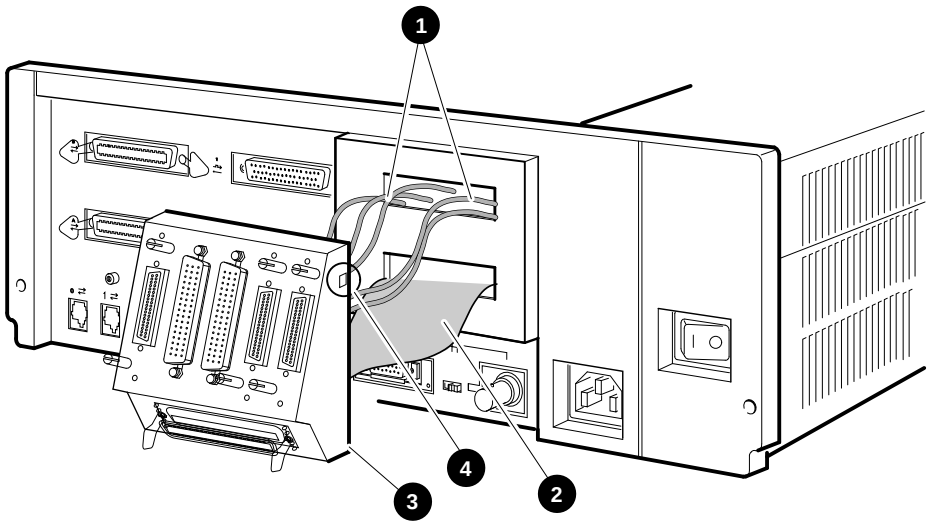
❶ SCSI cable connector

❷ Phillips screwdriver and screw

❸ Washer

20. Install the new port cover with its connectors onto the rear of the system box, feeding the cables through the cable cutouts in the system box (see Figure 2–19).
    a. Feed the original DSSI cable, the Q–bus cables, and the new DSSI cables through the top cable cutout on the system box.
    b. Feed the SCSI cable through the bottom cable cutout on the system box.
    c. Hook the bottom flange of the cover plate onto the system box.
    d. Push the port cover forward until the two tabs click into place.

Figure 2–19 Installing the Port Cover and Cables



❶ DSSI and Q–bus cables in top cutout

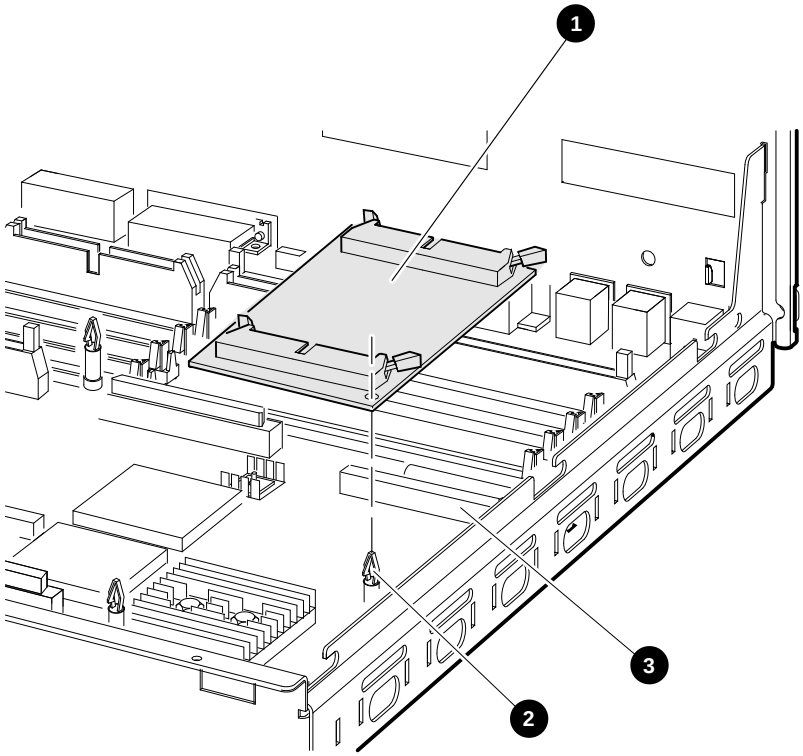
❷ SCSI cable in bottom cutout

❸ Bottom flange

❹ Tab cutout

21. Install the dual DSSI daughter card onto the mother board (see Figure 2–20). Align the new card on the standoffs so that it is positioned above the mother board connector, then gently seat it onto the connector and the standoffs.

Figure 2–20 Installing the Dual DSSI Daughter Card



❶ Daughter card

❷ Standoff

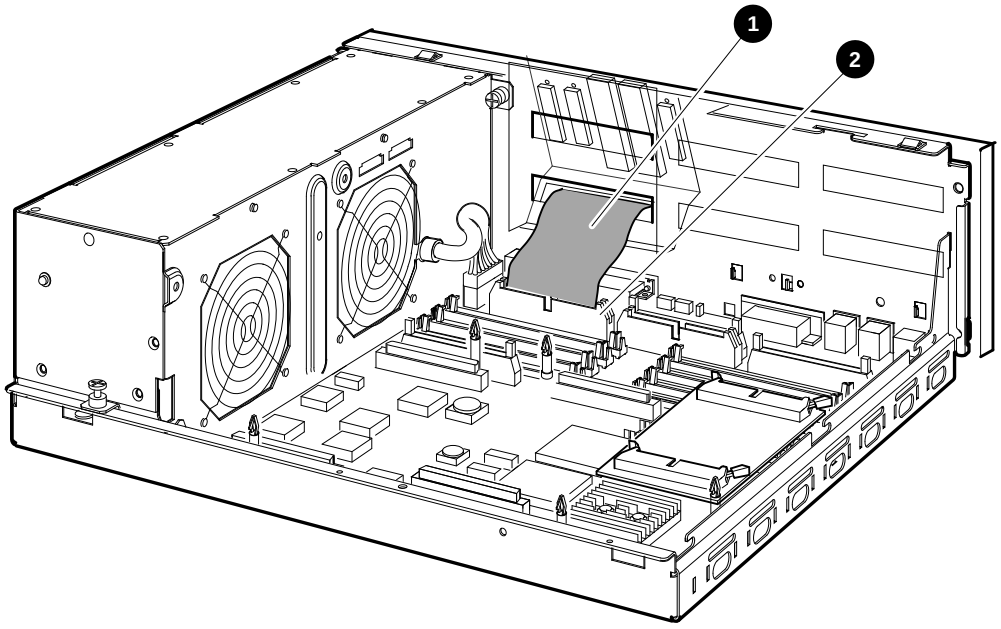
❸ Mother board connector

Note

For clarity, cables not applicable to a particular step are omitted from some of the following illustrations.

22. Connect the external SCSI cable (17–2944–01) to the mother board (see Figure 2–21).

Figure 2–21 Connecting the External SCSI Cable to the Mother Board

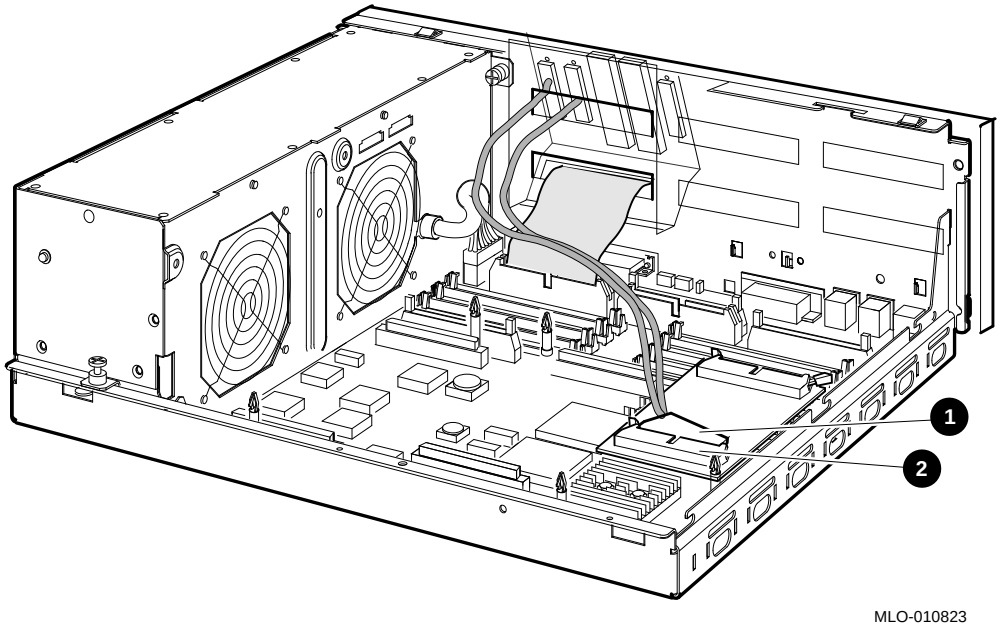


❶ External SCSI cable

❷ External SCSI connector on the mother board

23. Run the new DSSI in/out cable (17–03778–01) between the rows of memory modules and connect it to the front connector slot on the new DSSI daughter board (see Figure 2–22).

Figure 2–22 Connecting the New DSSI Cable to the Daughter Board

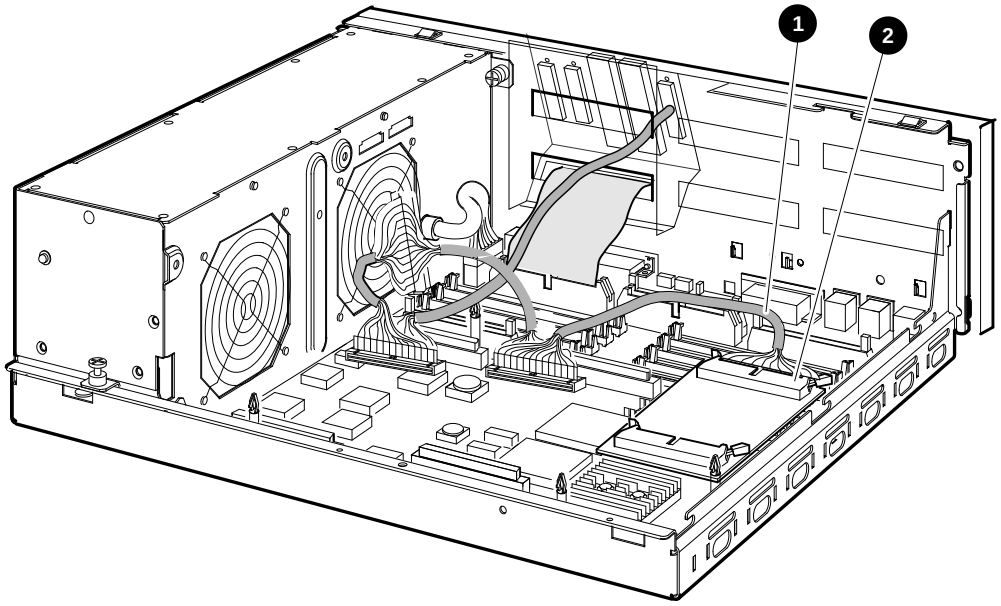


❶ New DSSI cable connector

❷ Front connector slot on the daughter board

24. Connect the original DSSI cable (17–03544–01) to the rear connector slot on the new DSSI daughter board (see Figure 2–23).

Figure 2–23 Connecting the Original DSSI Cable to the Daughter Board

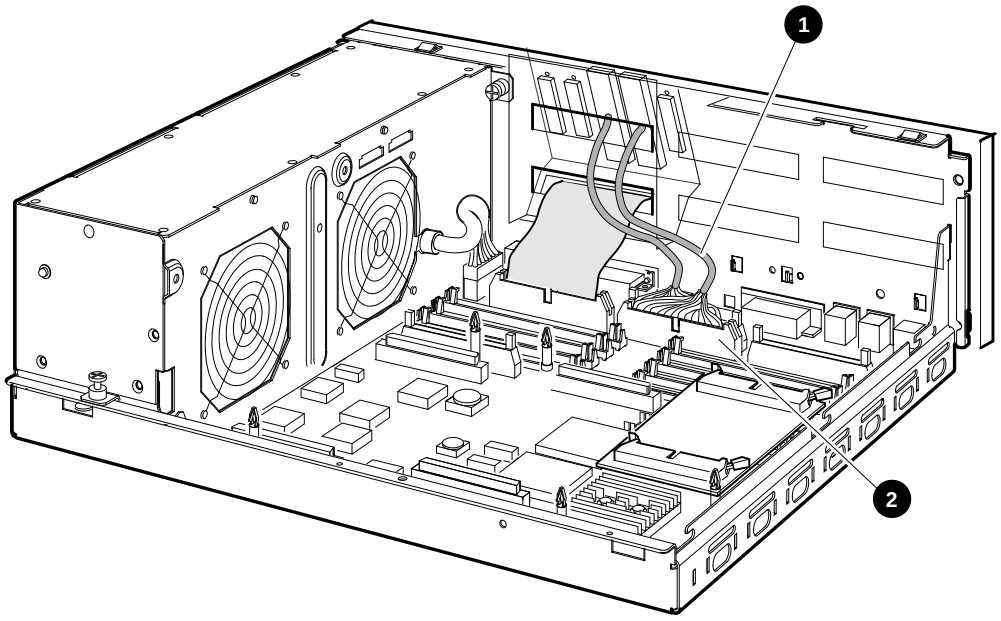


❶ Original DSSI cable

❷ Rear connector slot on the daughter board

25. Connect the Q–bus cable (17–3545–01) to the Q–bus slot on the mother board (see Figure 2–24).

Figure 2–24 Connecting the Q–bus Cable to the Mother Board



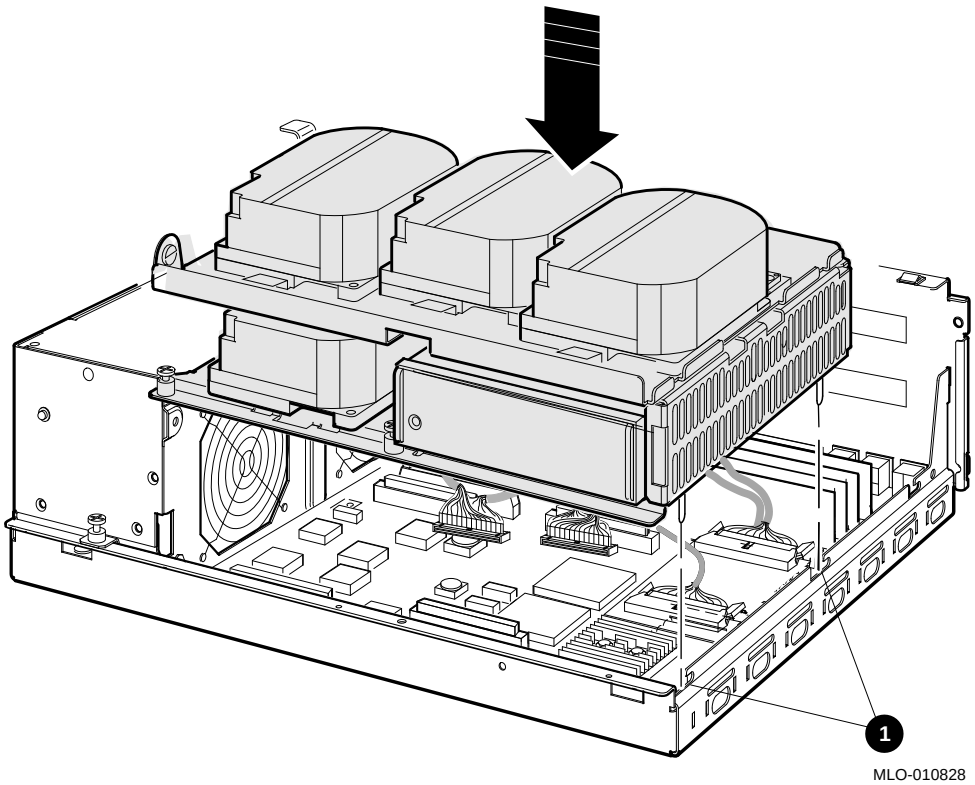
❶ Q–bus cable

❷ Q–bus connector on the mother board

26. Reinstall the upper and lower drive mounting shelves in the system box, and connect the internal SCSI cable (17–03587–01) to the mother board.

    a. Position the shelves by lining up the bracket tabs, but do not slide them rearward yet (see Figure 2–25).

Figure 2–25 Aligning the Drive Mounting Shelves



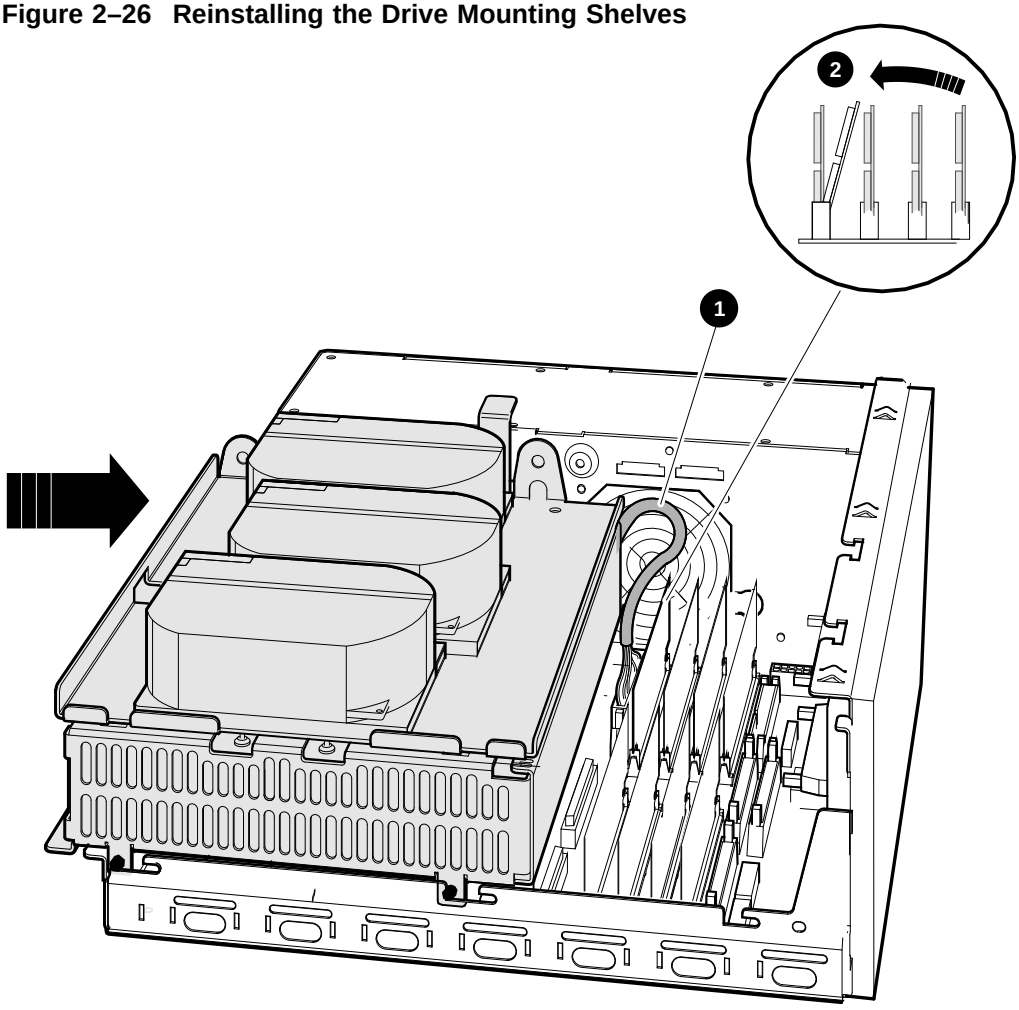
❶ Bracket tabs

b. Connect the internal SCSI cable to its connector on the mother board. (The memory module nearest the internal SCSI connector should be tipped forward; if it is not, see Figure 2–26.)

c. Snap the memory module back into its upright position.

d. Slide the shelves down and rearward into place so that the holes on the bracket tabs line up with their cutouts.

Figure 2–26 Reinstalling the Drive Mounting Shelves

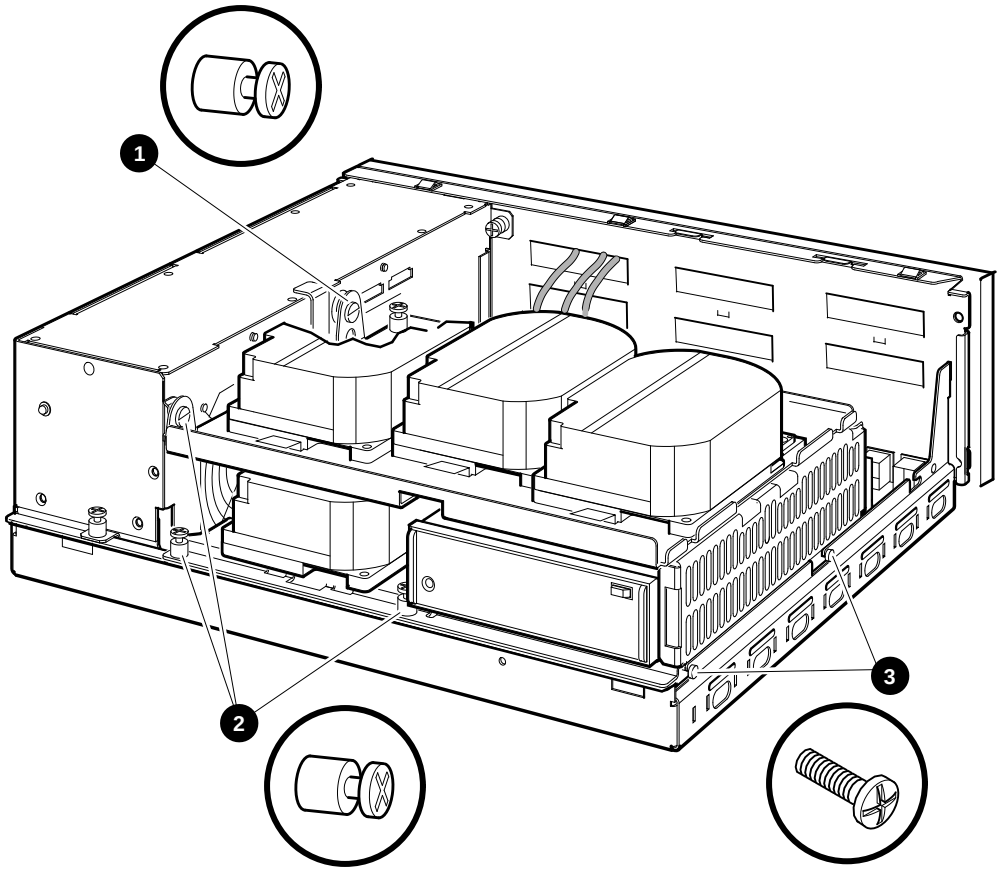


❶ Internal SCSI cable ❷ Memory module

e. Tighten the shelves in place using the six screws that held them in originally (see Figure 2–27).

   1. Tighten the topmost captive screw first so that the shelves do not fall and damage components underneath.
   2. Tighten the remaining captive screws.
   3. Replace and tighten the Phillips screws.

Figure 2–27 Securing the Drive Mounting Shelves



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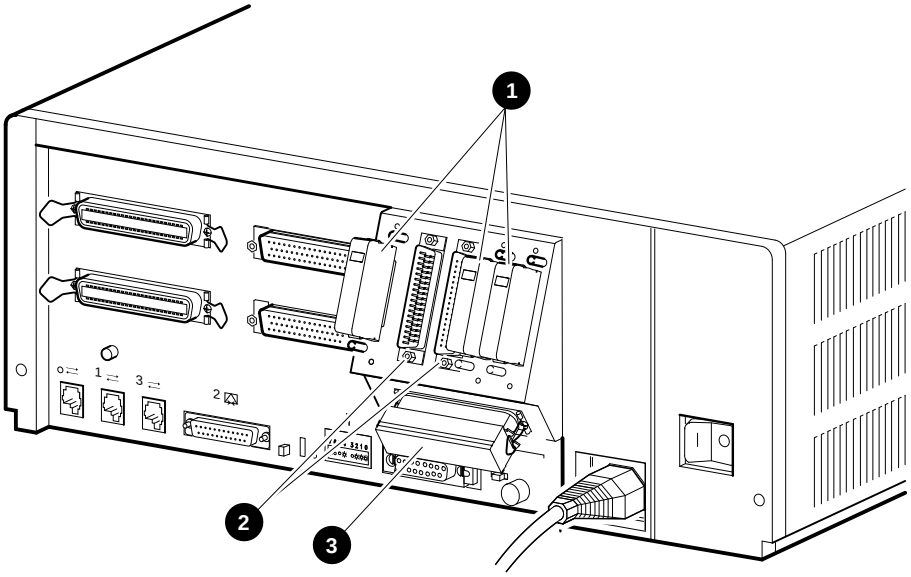
❶ Topmost captive screw
❷ Other captive screws
❸ Phillips screws

27. Reconnect the DSSI connectors to the drives (see Figure 2–6).
28. Reconnect the internal power cables (see Figure 2–5).
29. Reinstall the enclosure cover (see Figure 2–3).
30. Reconnect cables and terminators to the DSSI, Q–bus, and SCSI connectors on the port cover as desired (see Figure 2–28).

Figure 2–28 Reconnecting Cables and Terminators



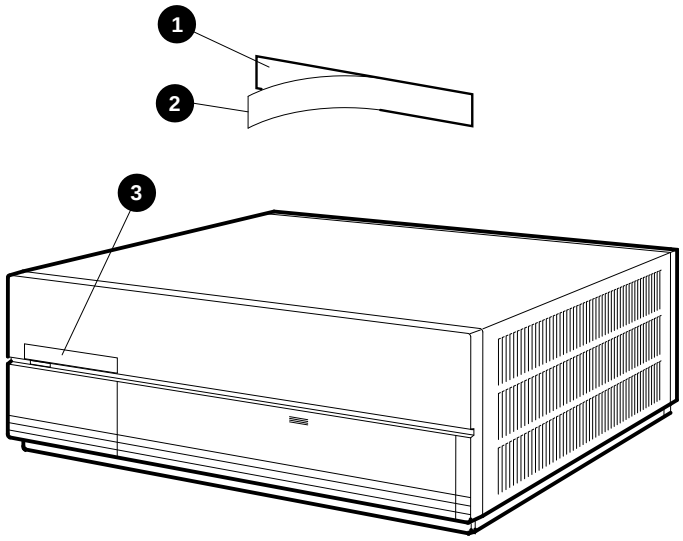
❶ DSSI connectors

❷ Q–bus connectors

❸ SCSI connector

31. Replace the Ethernet connector, if any (see Figure 2–2).
32. Remove the system medallion and install the new one (see Figure 2–29).
    a. Peel the backing off the new medallion.
    b. Apply the new medallion in place of the original one.

Figure 2–29 Applying the New Medallion



❶ Backing
❷ New medallion
❸ Medallion location

33. Have the customer reinstall system data (if necessary).
34. Fill out the appropriate paperwork (Appendix A).
35. Return the original daughter card as instructed (Appendix A).

3

Upgrading the VAX 4000 Model 100A System

3.1 In This Chapter

This chapter lists detailed step-by-step procedures for upgrading a VAX Model 100A system.

3.2 Overview of the Conversion of a VAX 4000 Model 100A

Tasks required to upgrade a VAX 4000 Model 100A are summarized below. To begin the actual conversion, turn to Section 3.3.

1. Have the customer back up the system software.
2. Unpack and verify the conversion kit.
3. Shut down the operating system and run the power up diagnostics.
4. Turn off the system power and remove the power cord.
5. Remove the enclosure cover.
6. Remove the upper and lower drive mounting shelves.
7. Disconnect the DSSI cable from the original single DSSI daughter card.
8. Disconnect and remove the single DSSI daughter card.
9. Disconnect all internal cables from the port cover to the mother or daughter boards or the drives.
10. Disconnect all the external cables from the port cover.
11. Remove the present port cover with attached cables.
12. Remove the blanks from the port cover.
13. Install the alignment pins with washers on the new port cover.
14. Install the new dual DSSI cable on the new port cover.

15. Reinstall the port cover with its connectors onto the rear of the system box, feeding the cables through the cutouts in the system box.
16. Install the new dual DSSI daughter card onto the mother board.
17. Connect all cables to the mother and daughter boards.
18. Reinstall the upper and lower drive mounting shelves in the system box, and connect the internal SCSI cable to the mother board.
19. Reinstall the enclosure cover.
20. Connect the power cable, signal cables, and terminators to the system as desired.
21. Turn on the system.
22. Have the customer reinstall system data (if necessary).
23. Fill out the appropriate paperwork (Appendix A).
24. Return the original daughter card as instructed (Appendix A).

Note

Firmware and VMS upgrades are not required; appropriate versions were installed on VAX 4000 Model 100A systems at the factory.

3.3 Unpacking the Kit

Unpack the kit as follows:

1. Make sure there is no external damage to the shipping container, such as dents, holes, or crushed corners.
2. Unpack the conversion kit and check its contents against the shipping invoice. Table 3–1 lists the kit contents for the Model 100A upgrade, KFDDA–AF. Other items may be present, but are not required for this conversion.

CAUTION

Modules can be damaged by static discharge if an antistatic wrist strap and antistatic mat are not used during handling. The wrist strap and mat are in the antistatic kit in the Digital Services toolkit.

3. Unpack the dual DSSI daughter card and place it on a grounded antistatic mat.
4. Save the packing material, and use it to return the original single DSSI daughter card.
5. If any item is missing or damaged:
   - Contact the customer's sales representative.
   - Contact the customer's delivery agent.

Table 3–1 Contents of the KFDDA–AF Upgrade Kit

Description	Part Number	Quantity
Dual shac daughter card	54–22444–01	1
Pin aligner	12–30363–01	6
DSSI terminator	12–29258–01	2
DSSI in/out cable	17–03778–01	1
Flat washer	90–08877–00	6
Flat head screw	90–10917–01	6
DSSI upgrade manual	EK–500AA–UP	1

3.4 Before Installing the Kit

Before installing the kit:

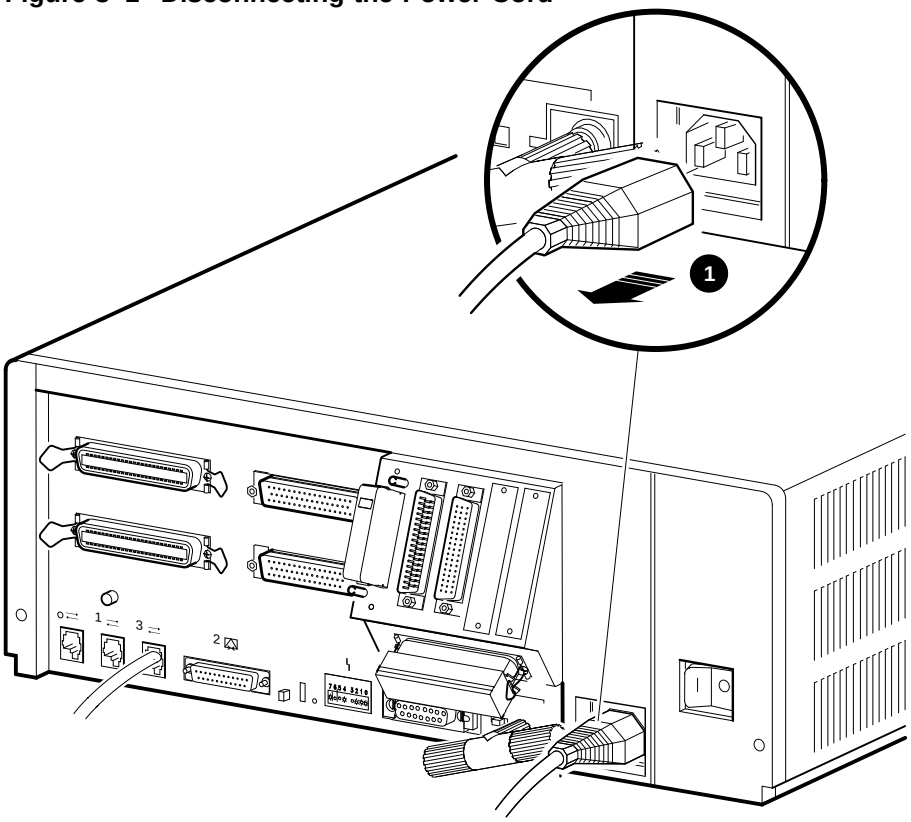
1. Have the customer back up the system software before the Digital Services representative arrives. It is the customer's responsibility to back up the system software.
2. Shut down the operating system in the proper manner.
3. Power up the system and run diagnostics to verify system operation.
4. Turn off the system power before installing the kit.

3.5 Installing the Dual DSSI Daughter Card

To install the new daughter card and related hardware (convert to dual DSSI configuration):

1. Disconnect all the power cord (see Figure 3–1).

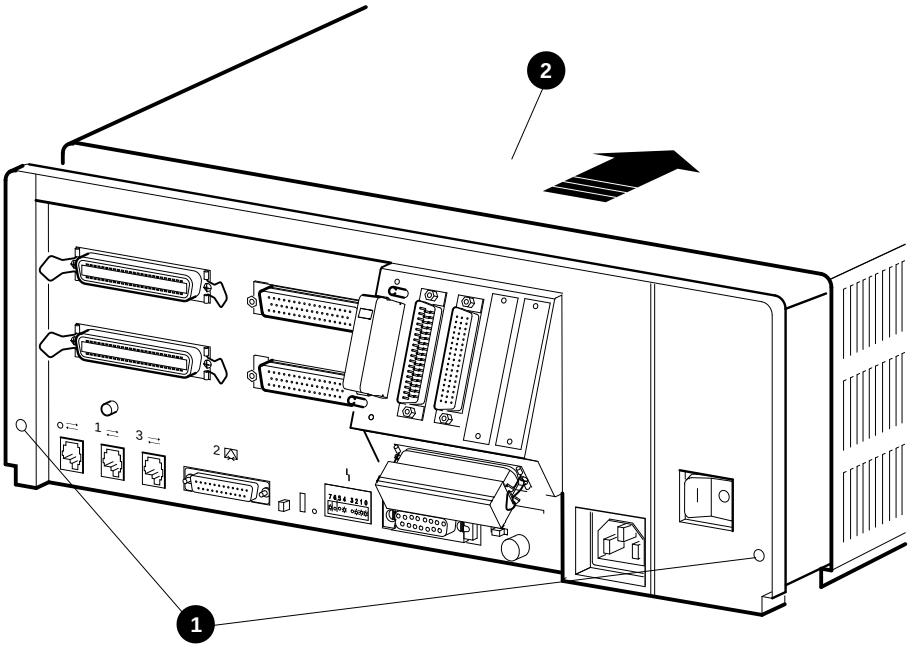
Figure 3–1 Disconnecting the Power Cord



❶ Power cord

2. Remove the enclosure cover by removing the two screws at the rear of the system box and sliding it forward (see Figure 3–2).

Figure 3–2 Removing the Enclosure Cover

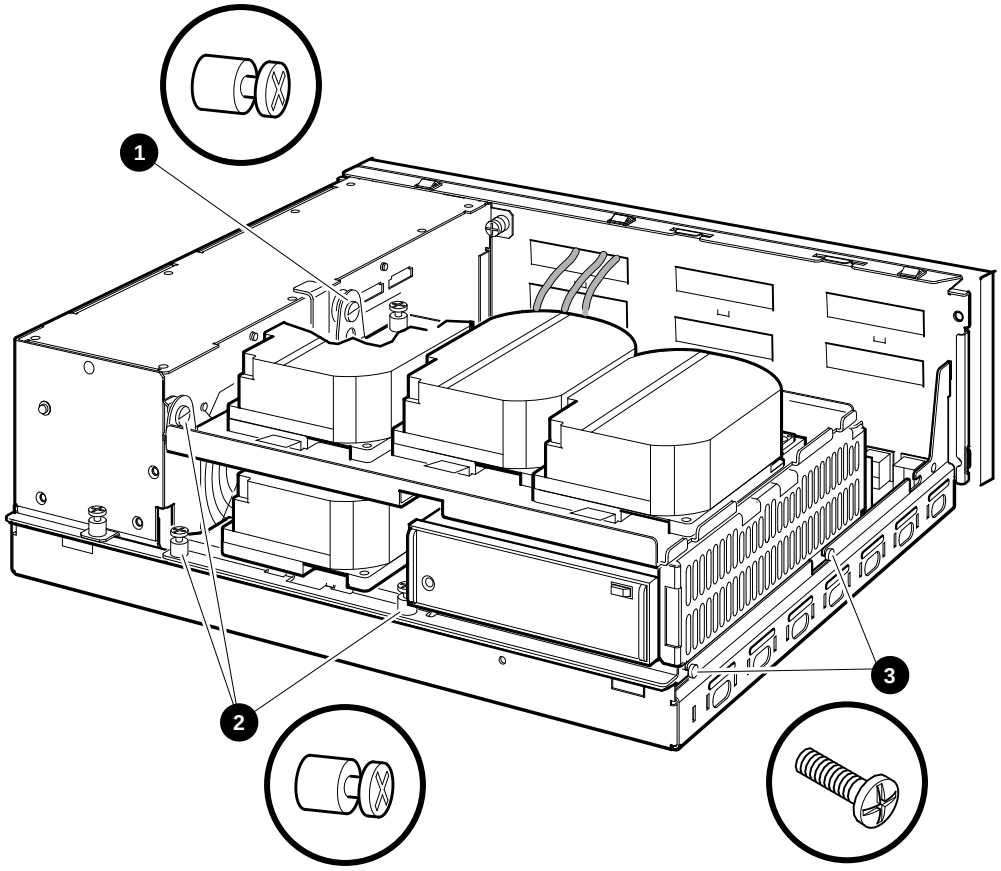


❶ Screws

❷ Enclosure cover

3. Remove the upper and lower drive mounting shelves together as a single unit (it is not necessary to disassemble the shelves themselves). Unscrew all six screws from the shelves, leaving the topmost captive screw until last for support. Leave the capitve screws in position and save the Phillips screws for reinstallation of the shelves (see Figure 3–3).

Figure 3–3 Unscrewing the Drive Shelves



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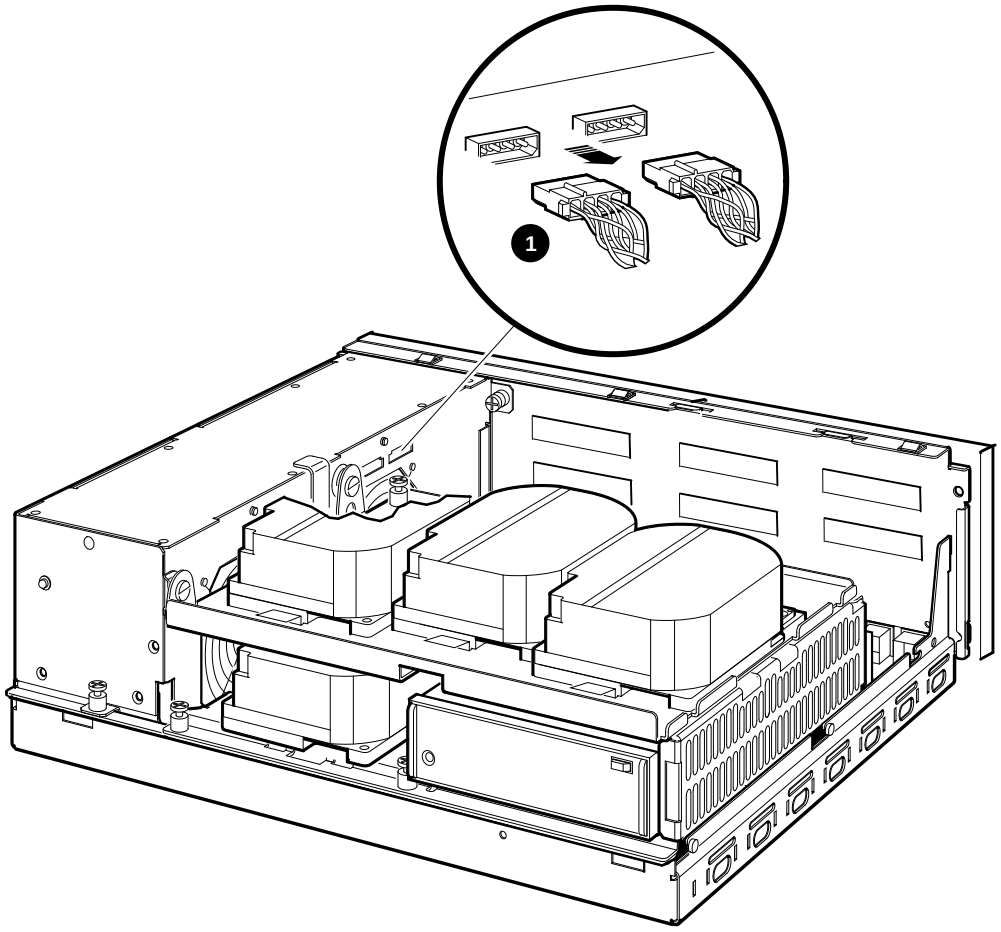
❶ Topmost captive screw

❷ Other captive screws

❸ Phillips screws

4. Disconnect the internal power cables from the power supply (Figure 3–4).

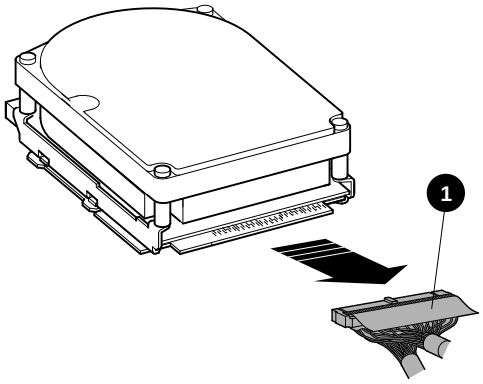
Figure 3–4 Disconnecting the Internal Power Cables



❶ Internal power cables

5. Disconnect the internal DSSI connectors from all drives mounted on the shelves. Figure 3–5 shows shows one drive as an example.

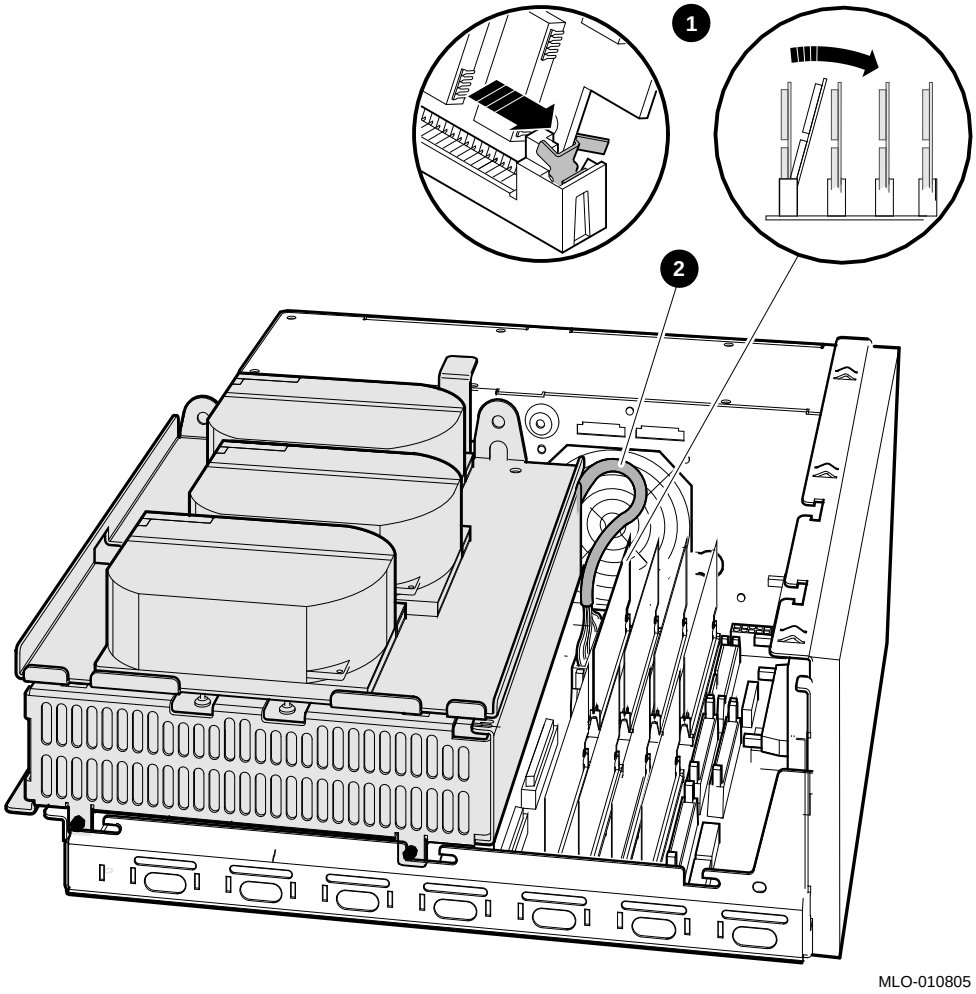
Figure 3–5 Disconnecting Internal DSSI Connectors



❶ Internal DSSI connectors

6. Disconnect the internal SCSI cable from the mother board (see Figure 3–6).
   1. Release the memory module nearest the internal SCSI connector by pressing the tabs on each end, and tip it forward.
   2. Disconnect the internal SCSI cable from its connector on the mother board.

Figure 3–6 Disconnecting the Internal SCSI Cable from the Mother Board

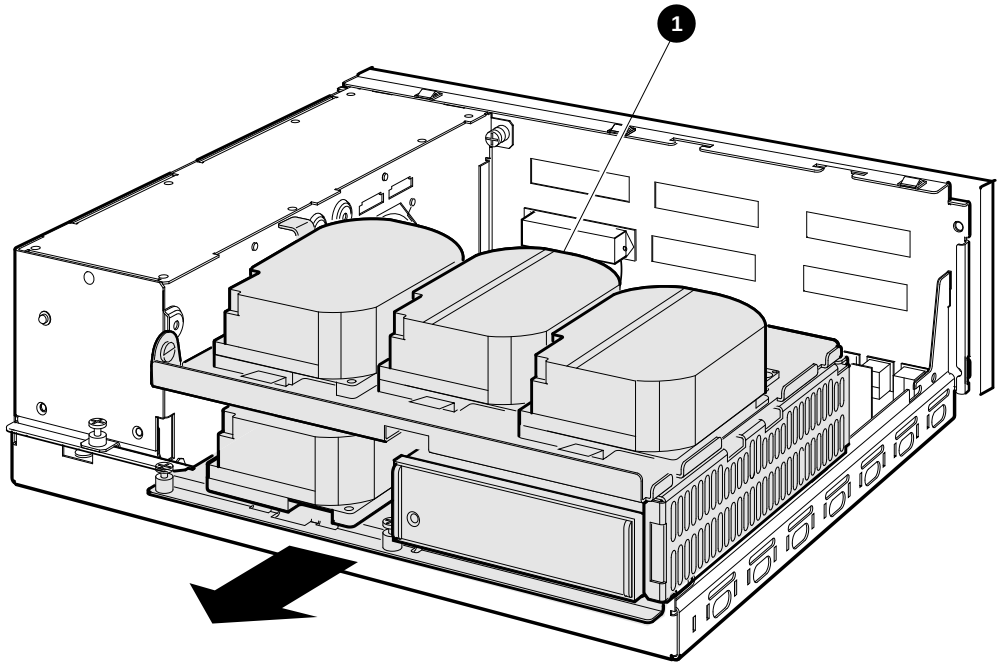


❶ Releasing the memory module and tipping it forward.

❷ Internal SCSI cable

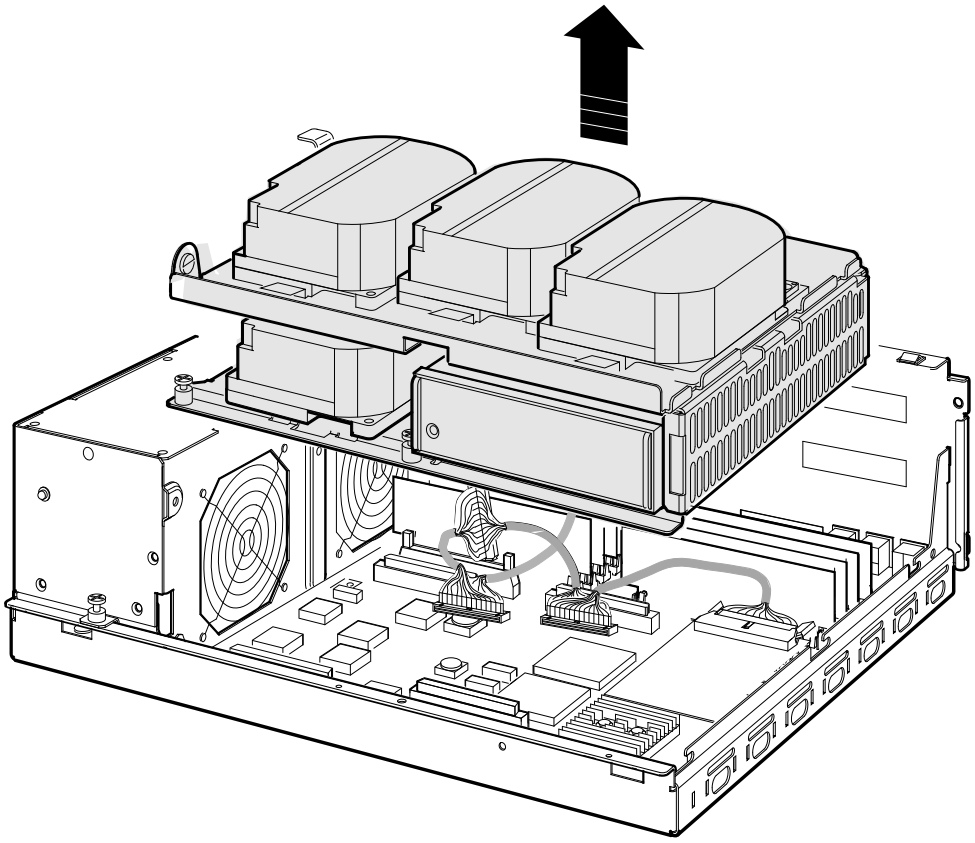
7. Remove the shelves by sliding them forward (see Figure 3–7) and lifting them up and away from the enclosure (see Figure 3–8). Leave the memory module tipped forward until the shelves are reinstalled.

Figure 3–7 Sliding the Drive Mounting Shelves Forward



❶ Drive mounting shelves

Figure 3–8 Lifting the Drive Mounting Shelves Upward



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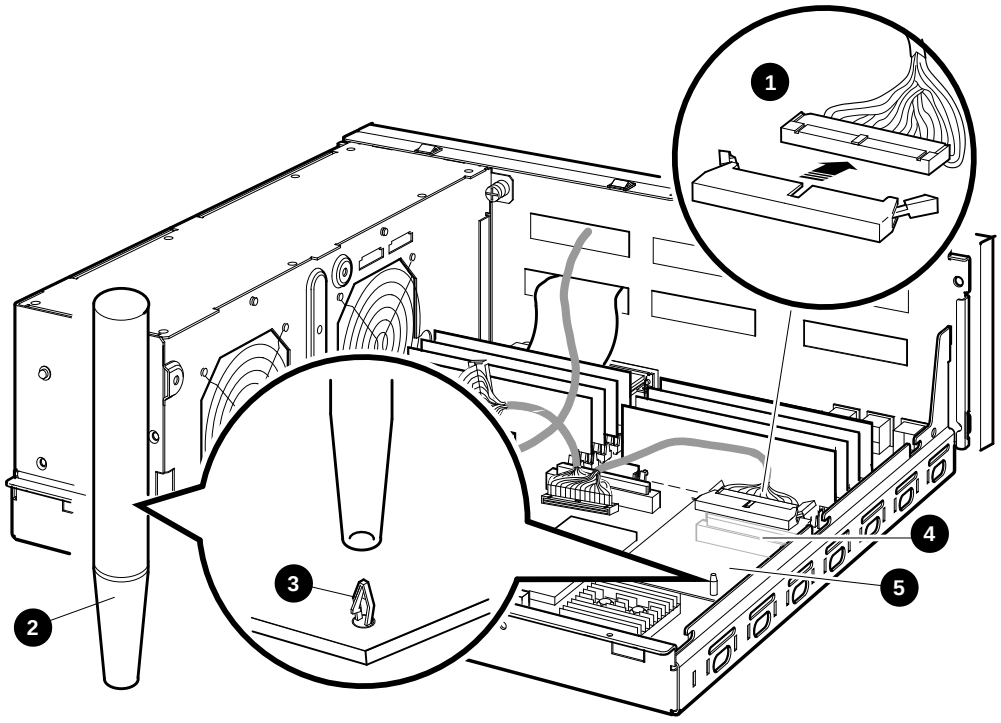
8. Disconnect the DSSI cable from the original single DSSI daughter card (see Figure 3–9).
9. Remove the original single DSSI daughter card by gently prying it loose from its connector on the mother board, and using a standoff removal tool to compress the posts so that each corner of the card can be lifted off individually (Figure 3–9). When all four corners are loose, lift the card out and place it on an anti-static mat.

Figure 3–9 Removing the Single DSSI Daughter Card



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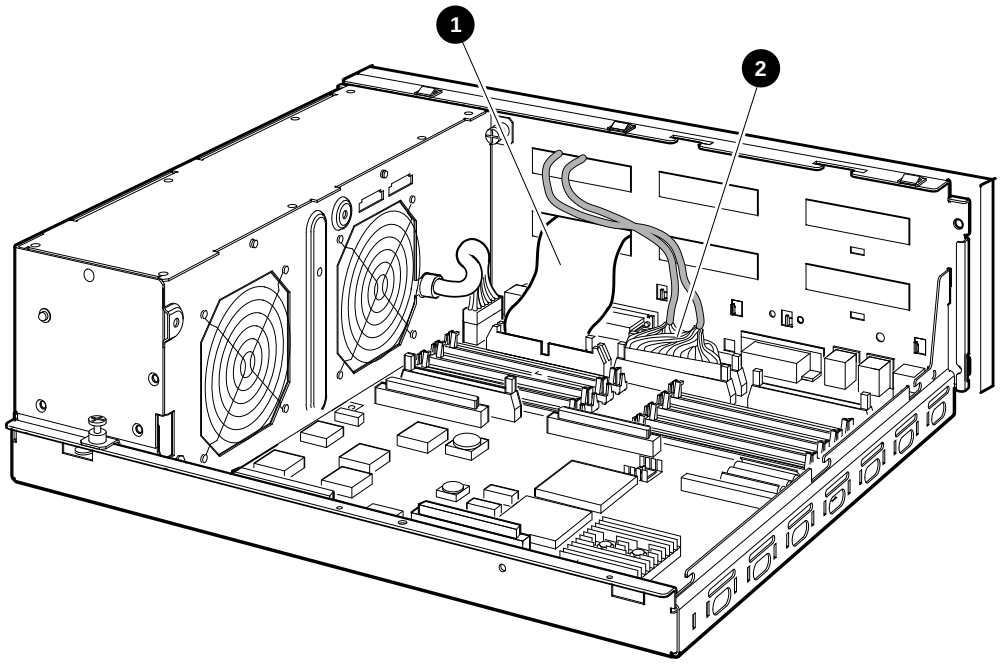
❶ DSSI connector
❷ Standoff removal tool
❸ Standoff
❹ Daughter card connector on the mother board
❺ Single DSSI daughter card

10. Disconnect the Q–bus cable from the mother board (see Figure 3–10).
11. Disconnect the external SCSI cable, which runs from the port cover to the mother board, at the connector on the mother board (Figure 3–10).

Note

Memory modules and other cables in Figure 3–10 have been removed for clarity.

Figure 3–10 Disconnecting the Q–bus and external SCSI Cables

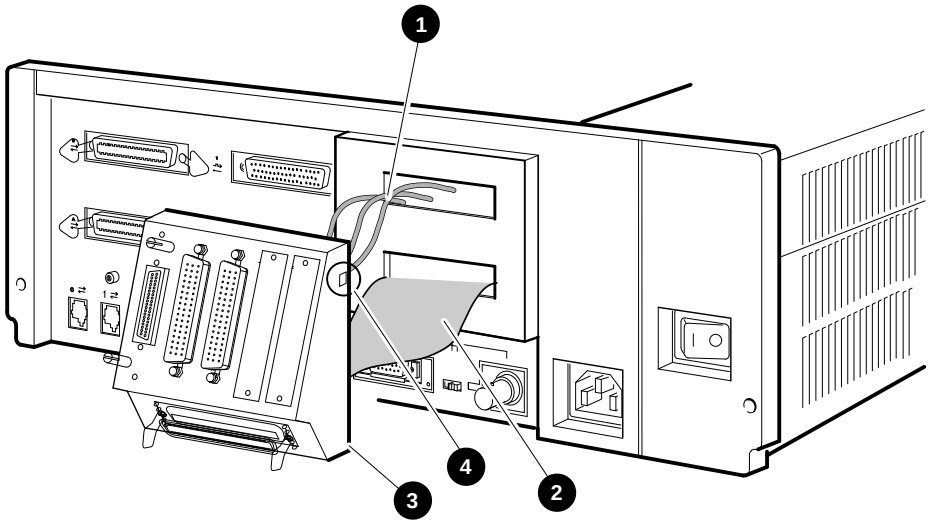


❶ External SCSI cable

❷ Q–bus cable

12. Remove the port cover by pushing the tabs on each side (see Figure 3–11). Slide the bottom flange of the cover off, pulling all cables carefully through the cable slots on the rear of the system box.

Figure 3–11 Removing the Port Cover



❶ DSSI and Q–bus cables

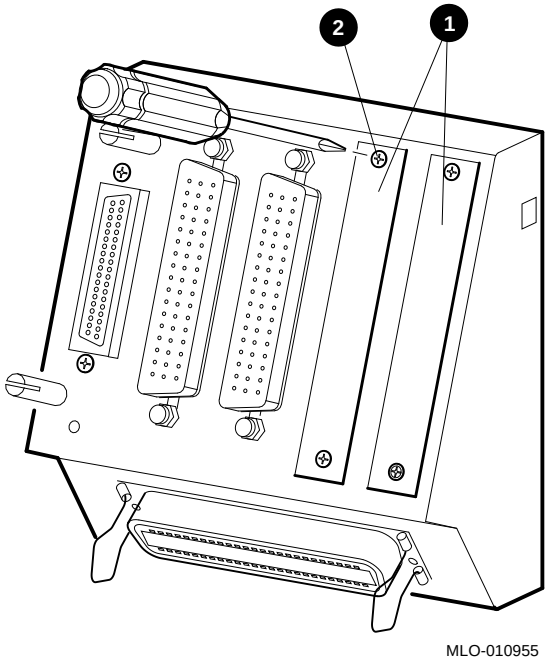
❷ external SCSI cable

❸ Bottom flange

❹ Tab cutout

13. Remove the cover plates with a Phillips screwdriver (see Figure 3–12).

Figure 3–12 Removing the Cover Plates

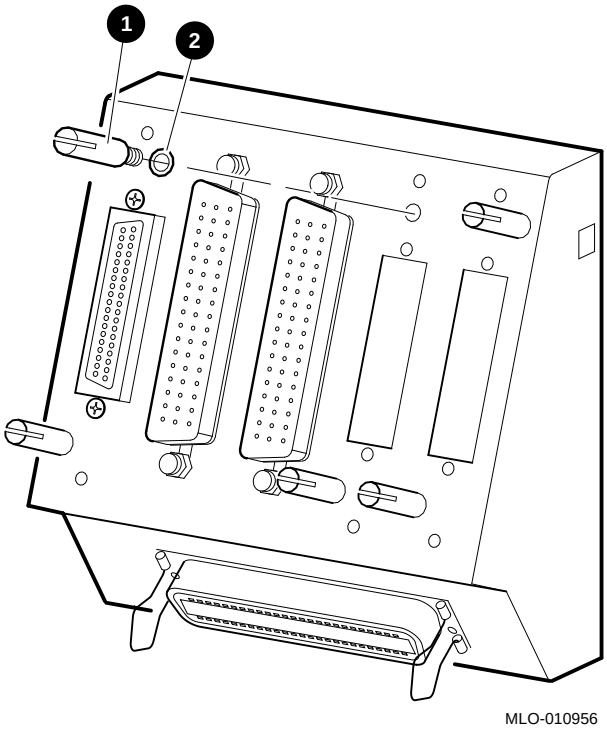


❶ Cover plates

❷ Phillips screw

14. Install four alignment pins with washers on the port cover (see Figure 3–13).

Figure 3–13 Installing the Alignment Pins on the Port Cover

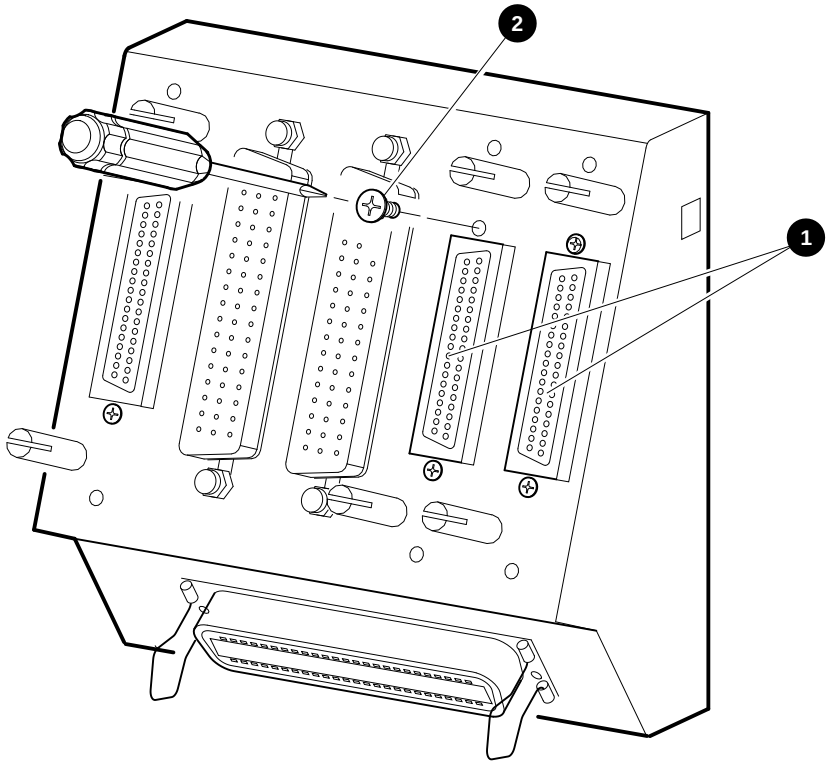


❶ Alignment pin

❷ Washer

15. Install the DSSI in/out cable which was included in the upgrade kit (17–03778–01) into the two right-hand DSSI external cutouts on the port cover (see Figure 3–14).

Figure 3–14 Installing the new DSSI Cable on the Port Cover

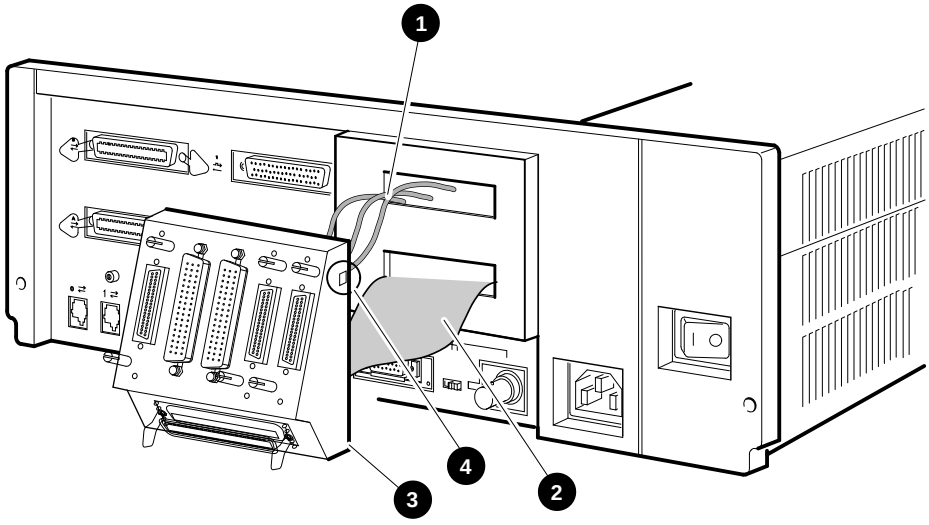


❶ New DSSI cable connectors

❷ Phillips screw driver and screw

16. Install the port cover with its connectors onto the rear of the system box, feeding the cables through the cable cutouts in the system box (see Figure 3–15).
    a. Feed the original DSSI cable, the Q–bus cables, and the new DSSI cables through the top cable cutout on the system box.
    b. Feed the SCSI cable through the bottom cable cutout on the system box.
    c. Hook the bottom flange of the cover plate onto the system box.
    d. Push the port cover forward until the two tabs click into place.

Figure 3–15 Installing the Port Cover and Cables



❶ DSSI and Q–bus cables in top cutout

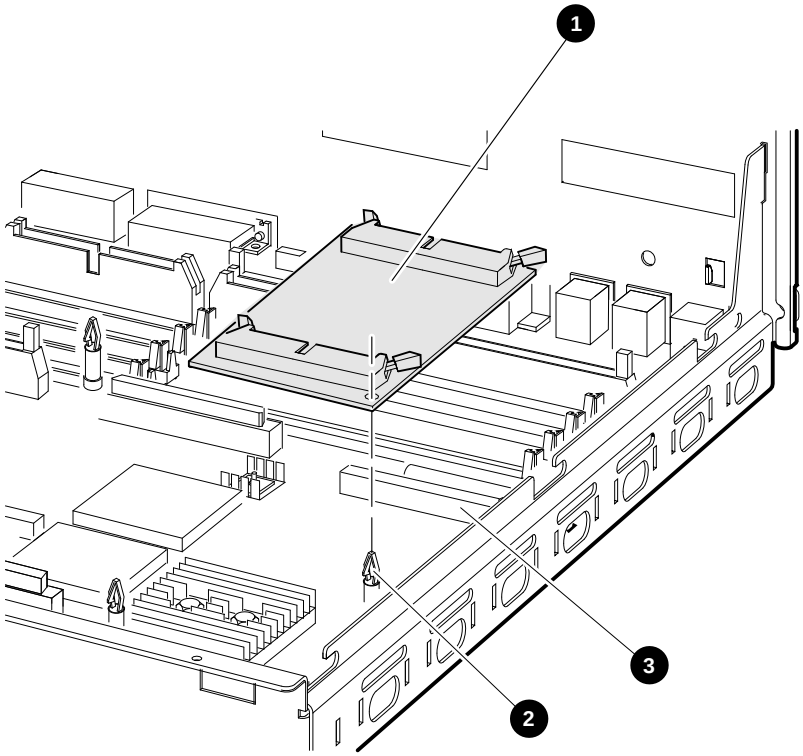
❷ SCSI cable in bottom cutout

❸ Bottom flange

❹ Tab cutout

17. Install the dual DSSI daughter card onto the mother board (see Figure 3–16). Align the new card on the standoffs so that it is positioned above the mother board connector, then gently seat it onto the connector and the standoffs.

Figure 3–16 Installing the Dual DSSI Daughter Card



❶ Daughter card

❷ Standoff

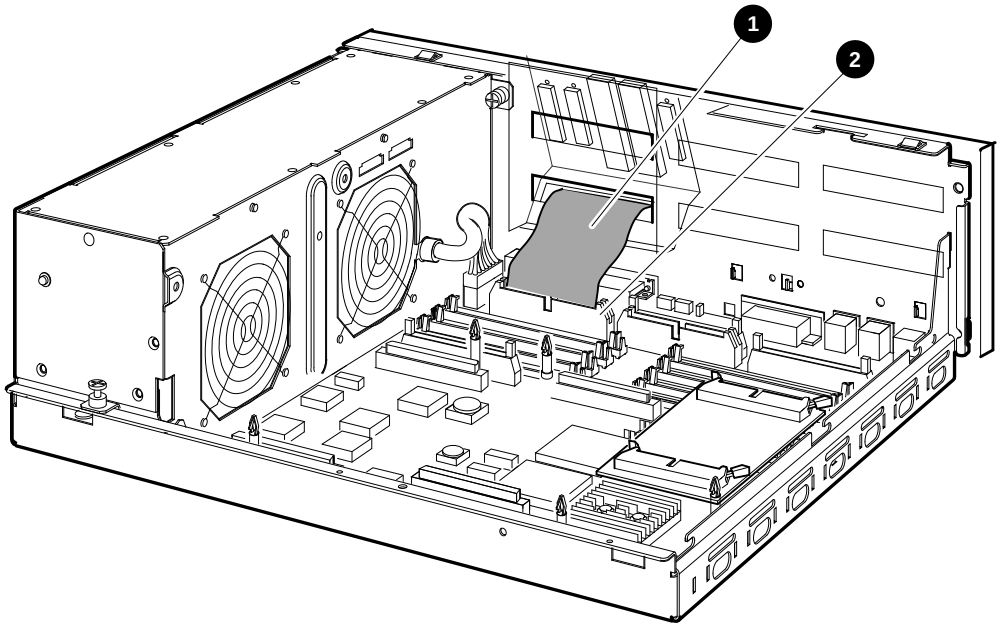
❸ Mother board connector

Note

For clarity, cables not applicable to a particular step are omitted from some of the following illustrations.

18. Connect the external SCSI cable (17–2944–01) to the mother board (see Figure 3–17).

Figure 3–17 Connecting the External SCSI Cable to the Mother Board

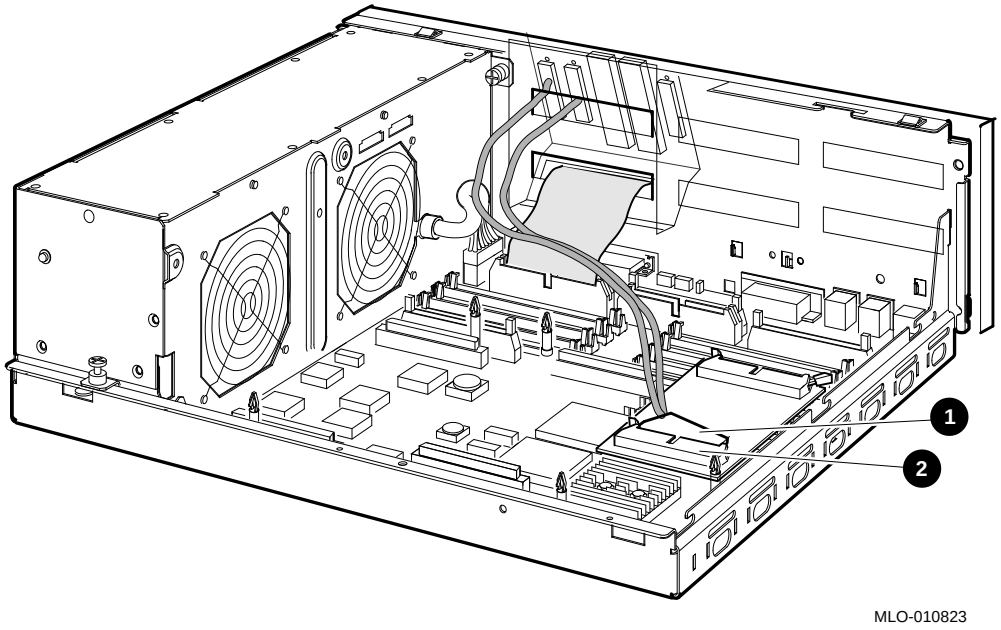


❶ External SCSI cable

❷ External SCSI connector on the mother board

19. Run the new DSSI in/out cable (17–03778–01) between the rows of memory modules and connect it to the front connector slot on the new DSSI daughter board (see Figure 3–18).

Figure 3–18 Connecting the New DSSI Cable to the Daughter Board

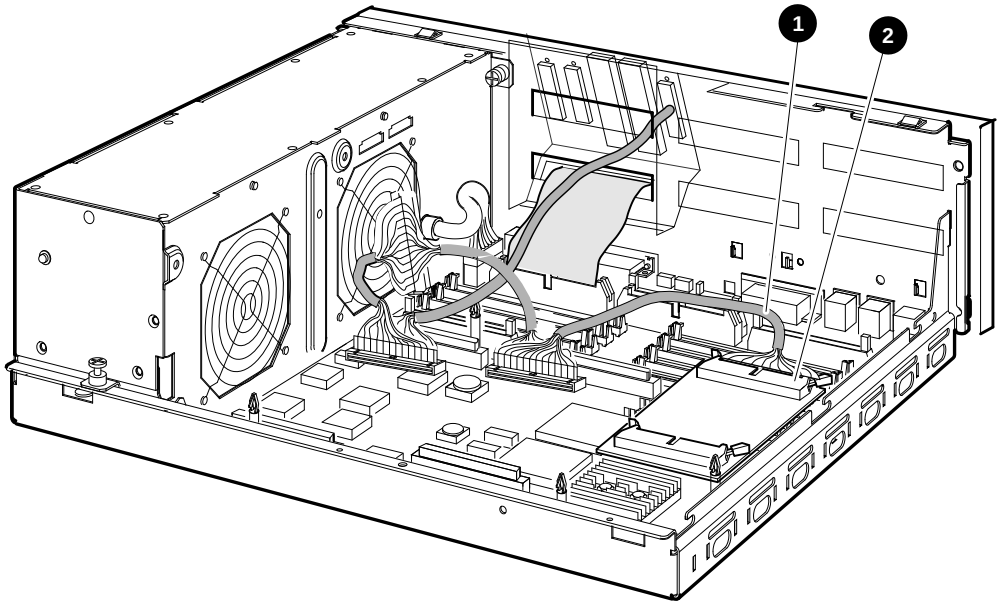


❶ New DSSI cable connector

❷ Front connector slot on the daughter board

20. Connect the original DSSI cable (17–03544–01) to the rear connector slot on the new DSSI daughter board (see Figure 3–19).

Figure 3–19 Connecting the Original DSSI Cable to the Daughter Board

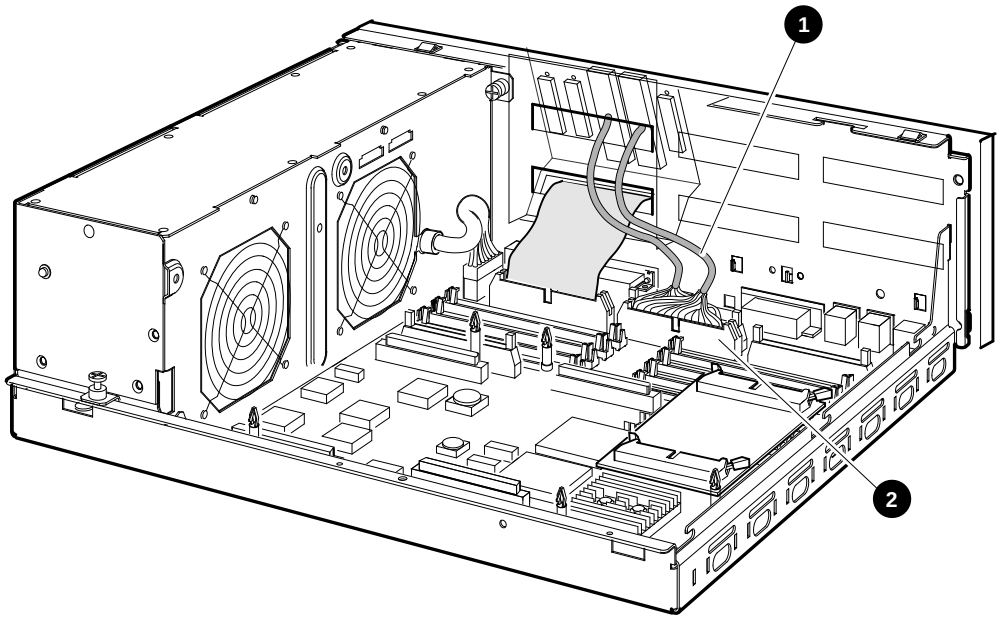


❶ Original DSSI cable

❷ Rear connector slot on the daughter board

21. Connect the Q–bus cable (17–03545–01) to the Q–bus slot on the mother board (see Figure 3–20).

Figure 3–20 Connecting the Q–bus Cable to the Mother Board



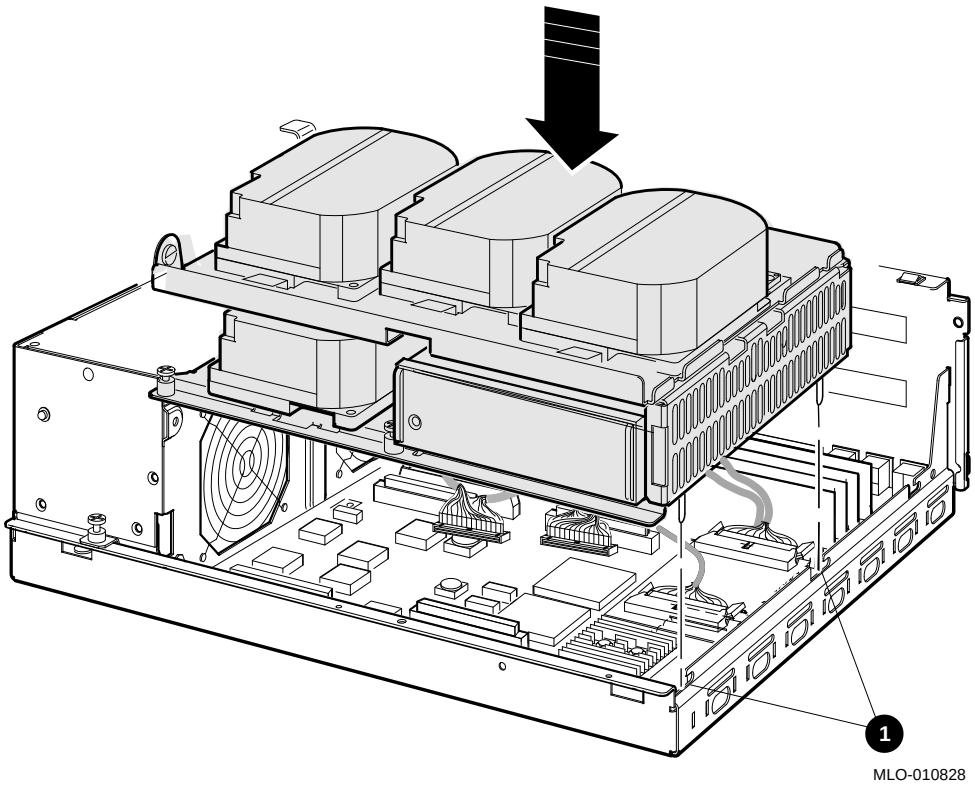
❶ Q–bus cable

❷ Q–bus connector on the mother board

22. Reinstall the upper and lower drive mounting shelves in the system box, and connect the internal SCSI cable (17–03587–01) to the mother board.

    a. Position the shelves by lining up the bracket tabs, but do not slide them rearward yet (see Figure 3–21).

Figure 3–21 Aligning the Drive Mounting Shelves



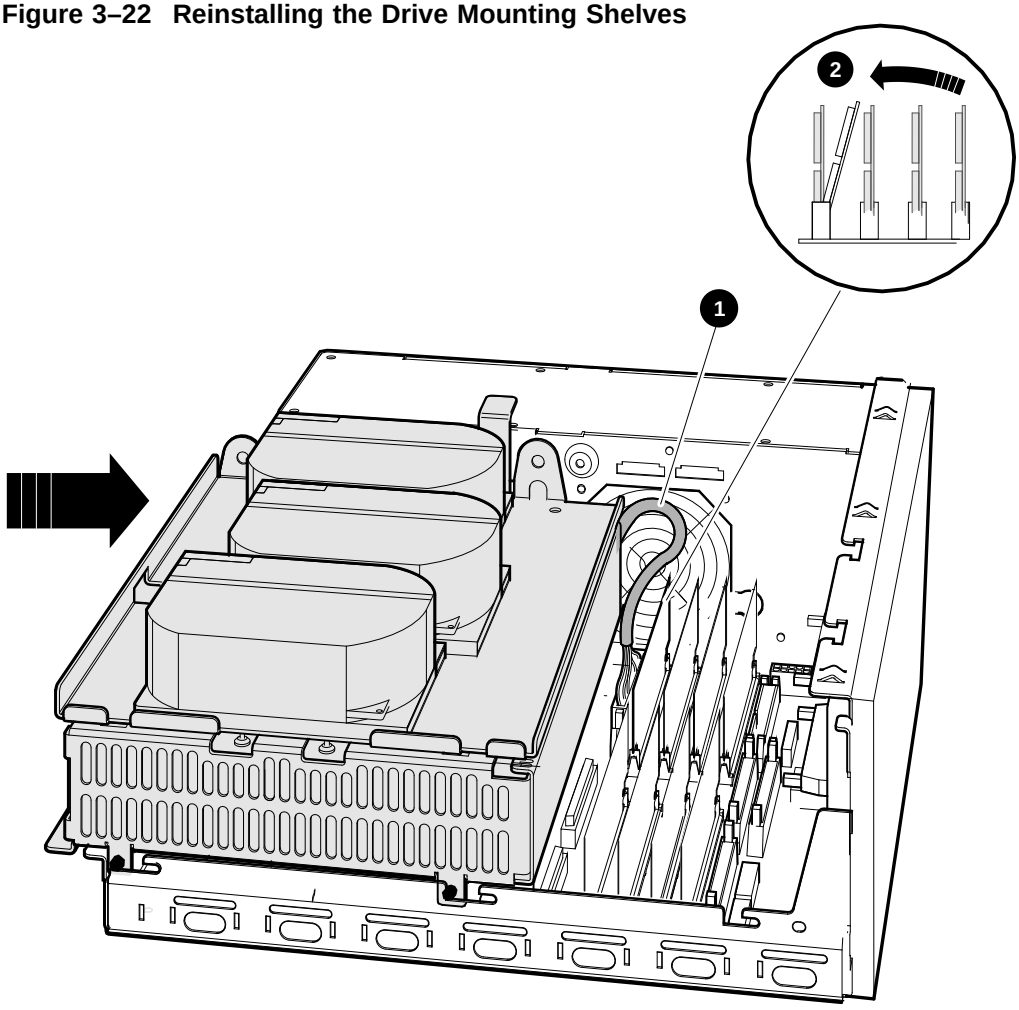
❶ Bracket tabs

b. Connect the internal SCSI cable to its connector on the mother board. (The memory module nearest the internal SCSI connector should already be tipped forward; if it is not, see Figure 3–22.)

c. Snap the memory module back into its upright position.

d. Slide the shelves down and rearward into place so that the holes on the bracket tabs line up with their cutouts.

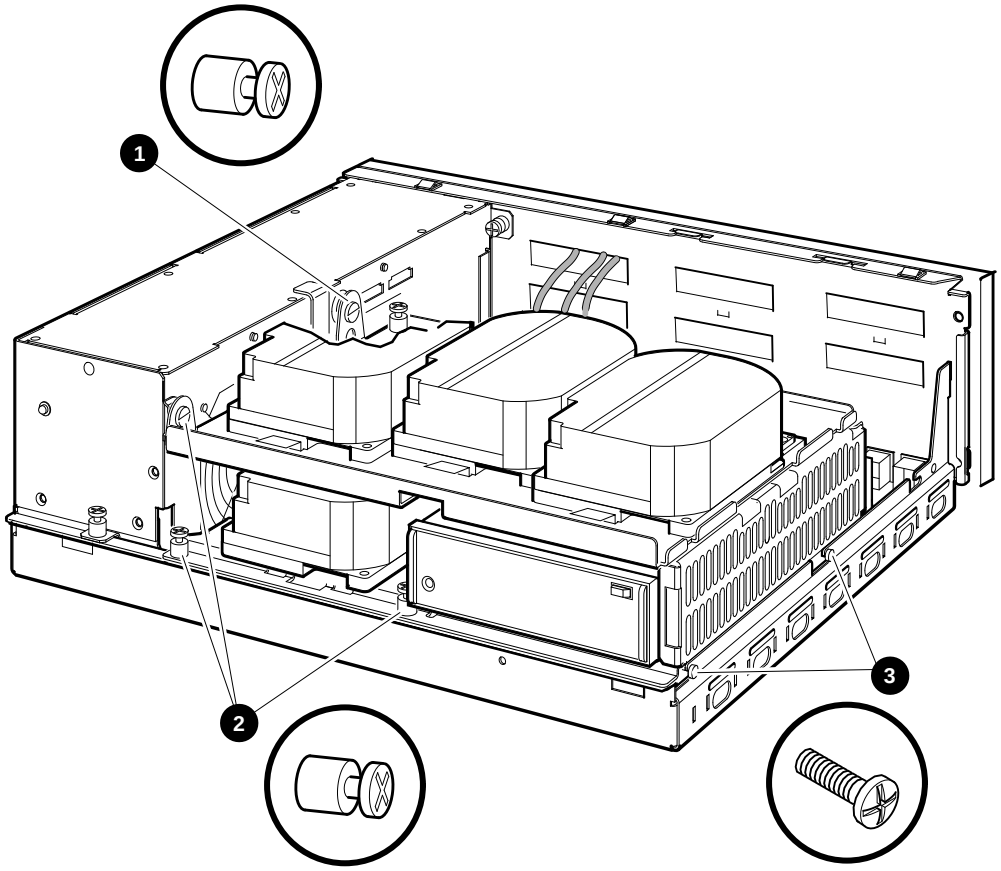
Figure 3–22 Reinstalling the Drive Mounting Shelves



❶ Internal SCSI cable ❷ Memory module

23. Tighten the shelves in place using the six screws that held them in originally (see Figure 3–23).
    1. Tighten the topmost captive screw first so that the shelves do not fall and therefore damage components underneath.
    2. Tighten the remaining captive screws.
    3. Replace and tighten the Phillips screws.

Figure 3–23 Securing the Drive Mounting Shelves

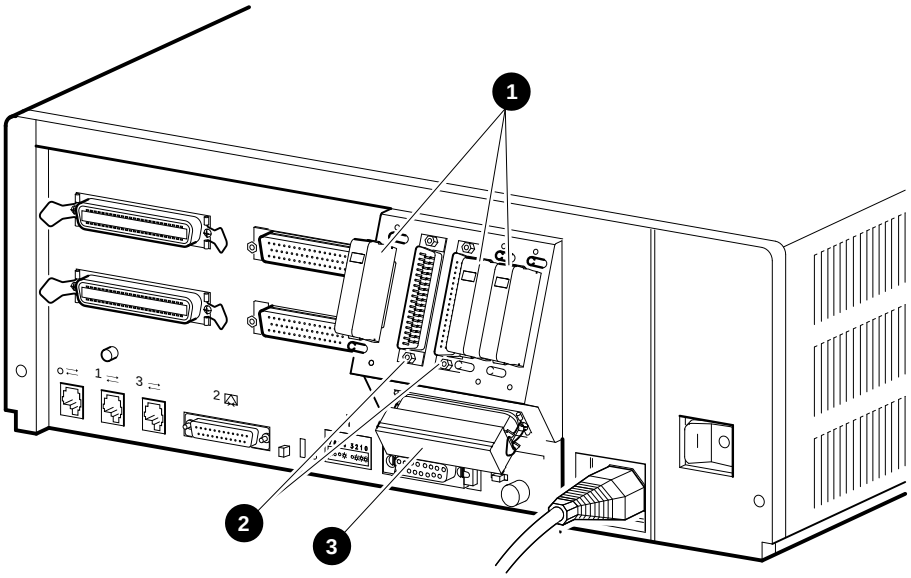


MLO-010802

❶ Topmost captive screw
❷ Other captive screws
❸ Phillips screws

24. Reconnect the DSSI connectors to the drives (see Figure 3–5).
25. Reconnect the internal power cables (see Figure 3–4).
26. Reinstall the enclosure cover (see Figure 3–2).
27. Connect cables and terminators to the DSSI, Q–bus, and SCSI connectors on the port cover as desired (see Figure 3–24).

Figure 3–24 Connecting Cables and Terminators



❶ DSSI connectors

❷ Q–bus connectors

❸ SCSI connector

28. Turn on the system.
29. Have the customer reinstall the system data (if necessary).
30. Fill out the appropriate paperwork (Appendix A).
31. Return the original daughter card as instructed (Appendix A).

A

Mandatory Daughter Card Return Procedure and Forms

The original daughter card must be returned to Digital Equipment Corporation. Digital Services personnel must follow the instructions for repackaging and returning the original card. The instructions apply only to United States area installations.

For installations outside the United States area, contact the local Digital Equipment Corporation office for return destination instructions.

A.1 Return Procedure

Note

Customers who do not return their original daughter cards will be charged a fee.

Return the original daughter card as follows:

1. Obtain the serial number of the system being converted. Customer Administrative Services (CAS) cannot process the order without this serial number.
2. Ensure that the serial number is on the purchase order.
3. Issue a hardcopy quotation to the customer, referencing the serial number, and state the following:

   "Return of the replaced modules to Digital is a condition of sale for this conversion. Failure to return the modules will result in a penalty charge. Installation of hardware by Digital Services personnel is required."

4. Pack the original card using the packaging material set aside from the carton of the conversion kit.

Pack the card first in the nickel-plated bag, then in the pink plastic wrapping, and finally in the box. Do not seal the box for shipping until you have included all necessary paperwork.

5. Complete the Digital Services Worksheet in Section A.2. It documents the work you performed.

   Return the worksheet to your contract administrator at the branch office.

6. Contact your local Digital CAS office to obtain information for the Installation Receipt and the Return Material Checklist in Section A.2. Section A.3 lists the CAS district offices and their phone numbers.

   Ask the CAS representative for a return authorization (RA) number. CAS will contact the customer to arrange for carrier pickup and return of the module to Digital Equipment Corporation.

7. Complete both copies of the Installation Receipt.

   The first copy is the customer's receipt. It shows that the installation was completed and that Digital Services contacted CAS.

   Return the second copy to Digital Services along with the original daughter card so that the customer does not incur a penalty charge.

8. Complete the Returned Material Checklist.

   Return the checklist with the original card.

9. Place the self-adhesive mailing label on the box to be returned.

   Write the return authorization (RA) number in the space provided on the label.

10. Seal the box for shipment.

Refer questions regarding the return procedure to the local account representative.

A.2 Return Forms

This section contains the:

- Digital Services Worksheet
- Installation Receipt–Customer Copy
- Installation Receipt–Digital Services Copy
- Returned Material Checklist

Digital Services Worksheet

This form acts as a verification of the work performed on the system and as a check on the procedures used. Please fill out this form and return it to your Contract Administrator for updating the customer's contract.

Customer: _____

Previous System Model Number: _____

Previous System Serial Number: _____

Original Daughter Card Serial Number: _____

_____

_____

New System Name: _____

New System Model Number: _____

New System Serial Number: _____

New Daughter Card Serial Number: _____

Comments: _____

_____

_____

Mandatory Daughter Card Return Procedure and Forms
A.2 Return Forms

Installation Receipt—Customer Copy

For the upgrade of VAX 4000 Model 100 or VAX 4000 Model 100A to a dual DSSI configuration.

This form acts as a customer receipt and as verification for Digital Services that the dual DSSI daughter card upgrade kit was installed.

Digital Services: Complete both copies of this form. Give a copy to the customer and a copy to the local CAS office for filing with customer documents.

Customer: Digital Equipment Corporation will contact you within the next several days to arrange for package pickup and return. Keep this copy as your record of installation by Digital Equipment Corporation.

Note

Contact the local CAS office to obtain the RA (return authorization) number. See Section A.3 for the closest CAS office. You should have the Digital order number available. Be sure to note the name of the person you speak with.

Name of CAS representative: _____

Branch Office: _____, will arrange for package pickup and return.

Return Authorization (RA) Number: _____

Digital Order Number: _____

Original Daughter Card Serial Number: _____

Converted to: _____

New System Serial Number: _____

New Daughter Card Serial Number: _____

Installation was performed on this date: _____

(See overleaf for signatures)

A.2 Return Forms

Daughter Card Packed for Return:

Customer Name: _____ Phone Number: _____

Customer Signature: _____

Digital Services Representative Signature: _____

Installation Receipt—Digital Services Copy

For the upgrade of VAX 4000 Model 100 or VAX 4000 Model 100A to a dual DSSI configuration.

This form acts as a verification for Digital Services that the dual DSSI daughter card upgrade kit was installed.

Digital Services: Complete both copies of this form. Give a copy to the customer and a copy to the local CAS office for filing with customer documents.

Note

Contact the local CAS office to obtain the RA (return authorization) number. See Section A.3 for the closest CAS office. You should have the Digital order number available. Be sure to note the name of the person you speak with.

Name of CAS representative: _____

Branch Office: _____, will arrange for package pickup and return.

Return Authorization (RA) Number: _____

Digital Order Number: _____

Original Daughter Card Serial Number: _____

Converted to: _____

New System Serial Number: _____

New Daughter Card Serial Number: _____

Installation was performed on this date: _____

(See overleaf for signatures)

A.2 Return Forms

Daughter Card Packed for Return:

Customer Name: _____ Phone Number: _____

Customer Signature: _____

Digital Services Representative Signature: _____

Returned Material Checklist

For the upgrade of VAX 4000 Model 100 or VAX 4000 Model 100A to a dual DSSI configuration.

This form must be filled out and returned with the original daughter card to ensure that the customer does not incur a penalty charge.

Return Authorization (RA) Number: _____

Digital Order Number: _____

Customer Name: _____

Customer Address: _____

_____

_____

Customer Contact: _____

********** Include This Form With Your Module Return**********

Mandatory Daughter Card Return Procedure and Forms
A.2 Return Forms

A.3 Customer Administrative Services (CAS) District Offices

Name, Location	Phone Number
Allegheny District, Pittsburgh, PA	(412) 244–7410
Carolinas District, Columbia, SC	(803) 798–6477
Chicago District, Chicago, IL	(312) 806–2478
Connecticut District, Meriden, CT	(203) 634–5325
CSS District, Nashua, NH	(603) 884–6549
DECdirect District, Nashua, NH	(603) 884–9115
Florida District, Tampa, FL	(813) 882–6822
Greater Boston District, Waltham, MA	(617) 895–5455
Great Lakes District, Detroit, MI	(313) 344–2285
Los Angeles District, Culver City, CA	(213) 417–4232
Midsouth District, Memphis, TN	(901) 761–6712
New Jersey Commercial District, Piscataway, NJ	(201) 562–4728
New Jersey Financial District, New York, NY	(212) 714–2648
New York Financial District, New York, NY	(212) 714–2648
New York Suburban District, Tarrytown, NY	(914) 524–5284
North Central District, Minneapolis, MN	(612) 851–2225
North Texas/Oklahoma District, Dallas, TX	(214) 404–6135
Northwest District, Bellevue, WA	(206) 462–2540
Ohio Valley District, Cincinnati, OH	(513) 984–7739
Philadelphia District, Blue Bell, PA	(215) 834–4115
Rocky Mountain District, Englewood, CO	(303) 649–3073
Santa Clara District, Santa Clara, CA	(408) 496–4274
Southeast District, Atlanta, GA	(404) 257–2282
Southern California District, Costa Mesa, CA	(714) 850–7606
South Texas District, Houston, TX	(713) 953–3918
Southwest District, Tempe, AZ	(602) 894–4747
Upstate New York District, Rochester, NY	(716) 385–7152

Mandatory Daughter Card Return Procedure and Forms
A.3 Customer Administrative Services (CAS) District Offices

Name, Location	Phone Number
U.S. Distribution/Sales District, Marlboro, MA	(508) 480–4259
Virginia District, Landover, MD	(301) 306–2566
Washington DC District, Landover, MD	(301) 459–2890
Washington DC District, FDA Landover, MD	(301) 459–2292

Reader's Comments

VAX 4000
BA42B-Based DSSI Upgrade Manual
EK–500AA–UP. A01

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