MicroVAX 3100 Model 90

SCSI Upgrade Manual

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Preface

This document describes how to upgrade a MicroVAX 3100 Model 90 system by adding a SCSI card and port to support external SCSI devices.

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.

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

Organization

This document contains one chapter and two appendices:

- Chapter 1 describes the upgrade conversion procedures in detail.
- Appendix A contains forms and a list of the Customer Administrative Services (CAS) district offices.
- Appendix B is a list of related documents.

Conventions

The following conventions are used in this document:

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.
n	A lowercase italic *n* indicates the generic use of a number. For example, *nnn* indicates any combination of three numeric characters.
nn nnn.nnn nn	A space character separates groups of 3 digits in numbers with 5 or more digits. For example, *10 000* equals *ten thousand*.
n.nn	A period in numbers indicates the decimal point. 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 upper case 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.

1

Upgrading the MicroVAX 3100 Model 90 System

This chapter provides the procedures for upgrading a MicroVAX 3100 Model 90 system by adding a SCSI card and port to support external SCSI devices.

1.1 Overview of the Conversion Processes

The following tasks are required to upgrade a MicroVAX 3100 Model 90 system. To begin the actual conversion, turn to Section 1.2. The upgrade includes installing a new SCSI cable, port, and a single SCSI daughter card.

1. Have the customer back up the system software.
2. Unpack and verify the conversion kit.

Note

The two steps that follow are not applicable if your MicroVAX 3100 Model 90 system already has Version 2.3 firmware and the OpenVMS Version 5.5-2H4 software.

3. Upgrade the firmware to Version 2.3.
4. Upgrade the OpenVMS disk to Version 5.5-2H4.
5. Shut down the operating system and run the power-up diagnostics.
6. Turn off the system power and remove the power cord.
7. Remove the enclosure cover.
8. Remove the upper and lower drive mounting shelves.
9. Remove the blank cutout cover from the rear of the enclosure.
10. Install the new SCSI cable and connector in the enclosure.
11. Install the new SCSI daughter card onto the mother board.

12. Reinstall the upper and lower drive mounting shelves in the system box, simultaneously connecting the internal SCSI cable to the mother board.
13. Reinstall the enclosure cover.
14. Connect the power cable, signal cables and terminators to the system as desired.
15. Turn on the system.
16. Have the customer reinstall system data (if necessary).
17. Fill out the appropriate paperwork (Appendix A).

1.2 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 1–1 lists the contents for the Model 90 upgrade kit, KZDDA–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 SCSI daughter card and place it on a grounded antistatic mat.
4. If any item is missing or damaged:
   - Contact the customer's sales representative.
   - Contact the customer's delivery agent.

Table 1–1 Contents of the KZDDA–AF Upgrade Kit

Description	Part Number	Quantity
SCSI terminator connector	12–30552–01	1
Cable assembly	17–02542–01	1
SCSI daughter card	54–23130–01	1
Sems screw	90–09643–00	2
SCSI upgrade manual	EK–510AA–UP	1
OpenVMS Version 5.5-2H4[1]	QA–001AA–UW	1
MV 3100/VAX 4000-100 fld[1]	QZ–004AA–FW	1
Packing carton	99–08222–01	1
Plastic bag	99–06557–30	1

1.3 Installing the Firmware and Upgrading the Operating System

Before you install the hardware, you must install the firmware and upgrade the OpenVMS operating system 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 the *Updating KA50/KA52 CPU Firmware* document which is included in the QZ–004AA–FW kit.[1]
4. Upgrade the OpenVMS disk to Version 5.5-2H4.[1]
5. Shut down the operating system in the proper manner.
6. Turn off the system power before you install the kit.

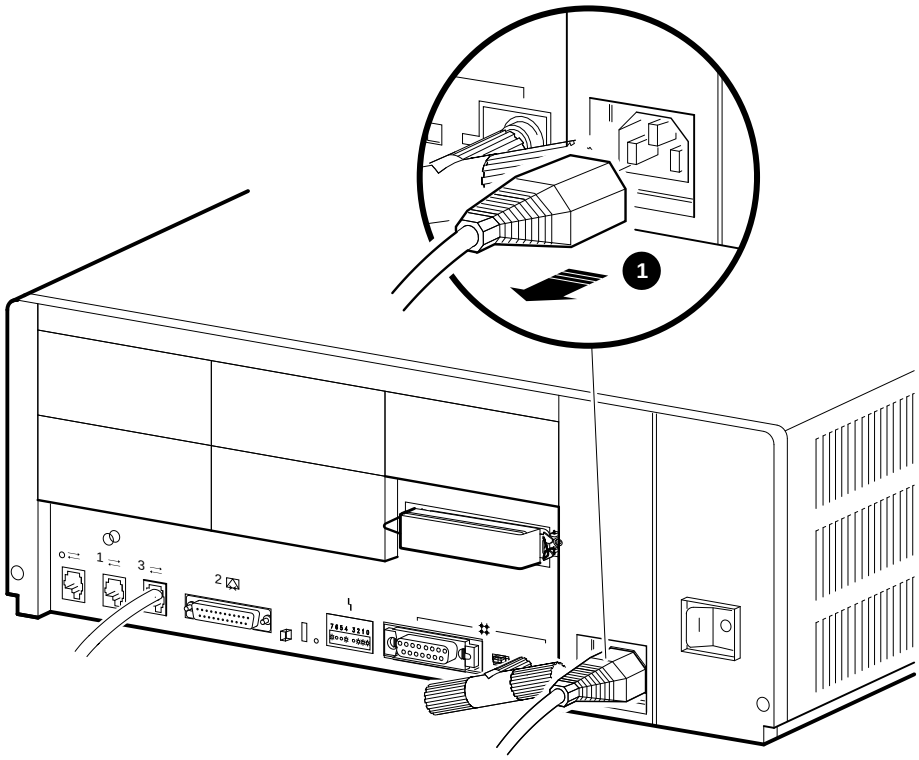
[1] If your MicroVAX 3100 Model 90 system already has Version 2.3 firmware and OpenVMS Version 5.5-2H4 software, it is not necessary to upgrade the firmware or the OpenVMS software.

1.4 Installing the SCSI Daughter Card

Follow this procedure to install the new daughter card and related hardware.

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

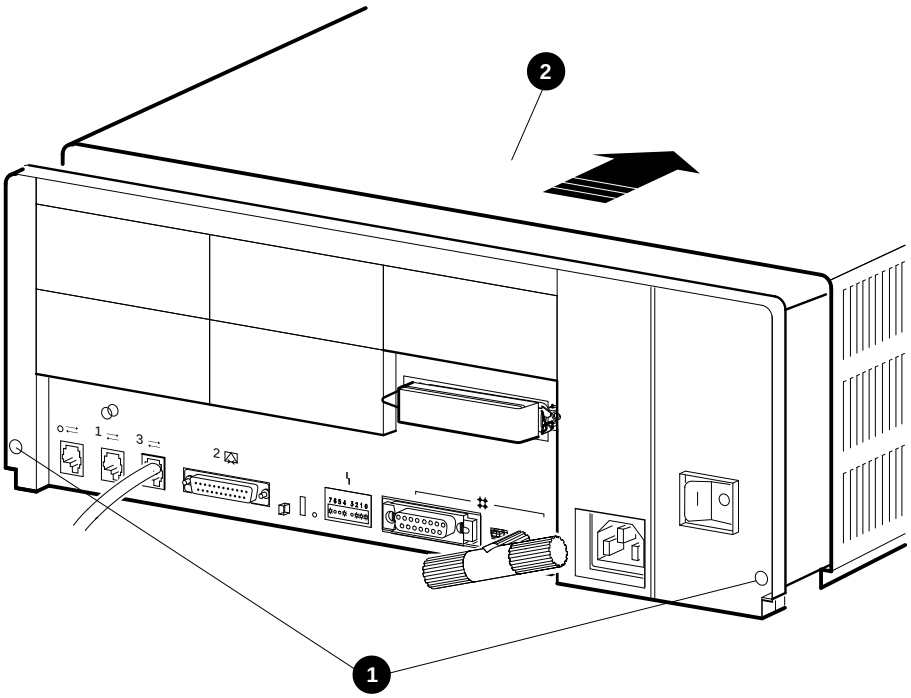
Figure 1–1 Disconnecting the Power Cord



❶ Power cord

2. Remove the enclosure cover by removing the two screws at the rear of the system box and sliding the cover forward (Figure 1–2).

Figure 1–2 Removing the Enclosure Cover



❶ Screws

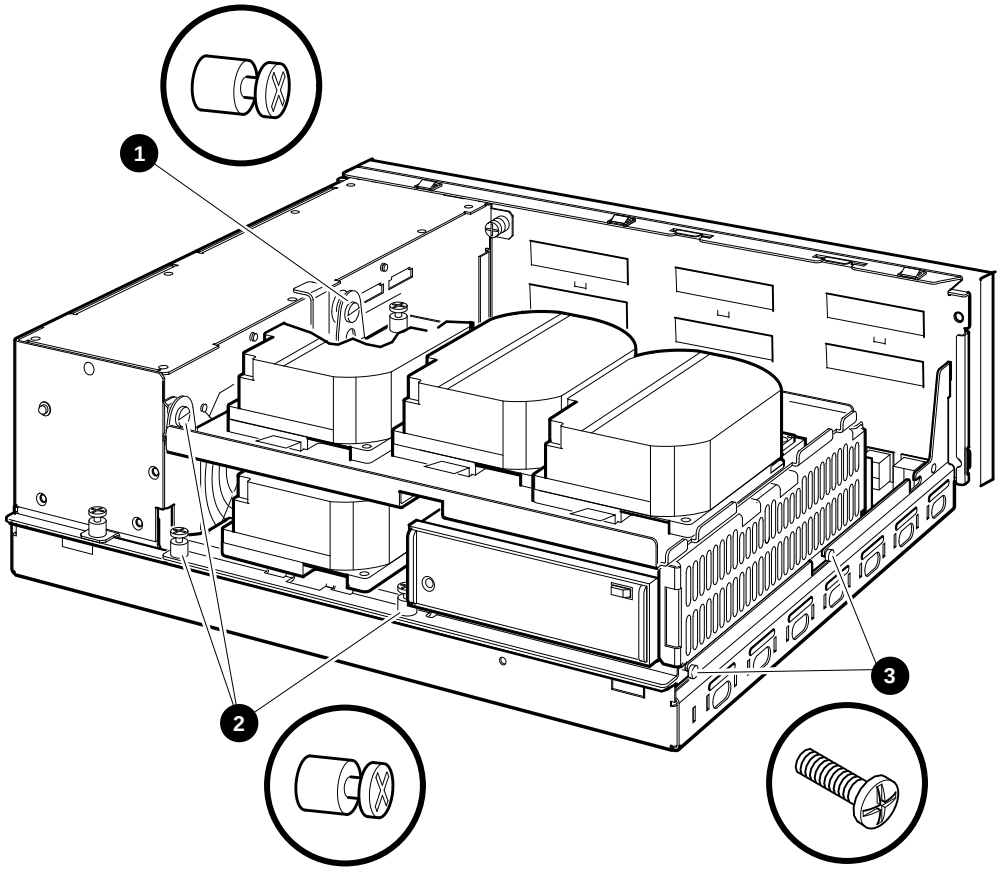
❷ Enclosure cover

3. Remove the upper and lower drive mounting shelves together as a single unit; it is not necessary to disassemble the shelves themselves (Figure 1–3).

   a. Unscrew all six screws from the shelves, leaving the topmost captive screw until last for support.

   b. Leave the captive screws in position and save the Phillips screws for reinstallation of the shelves.

Figure 1–3 Unscrewing the Drive Shelf Screws



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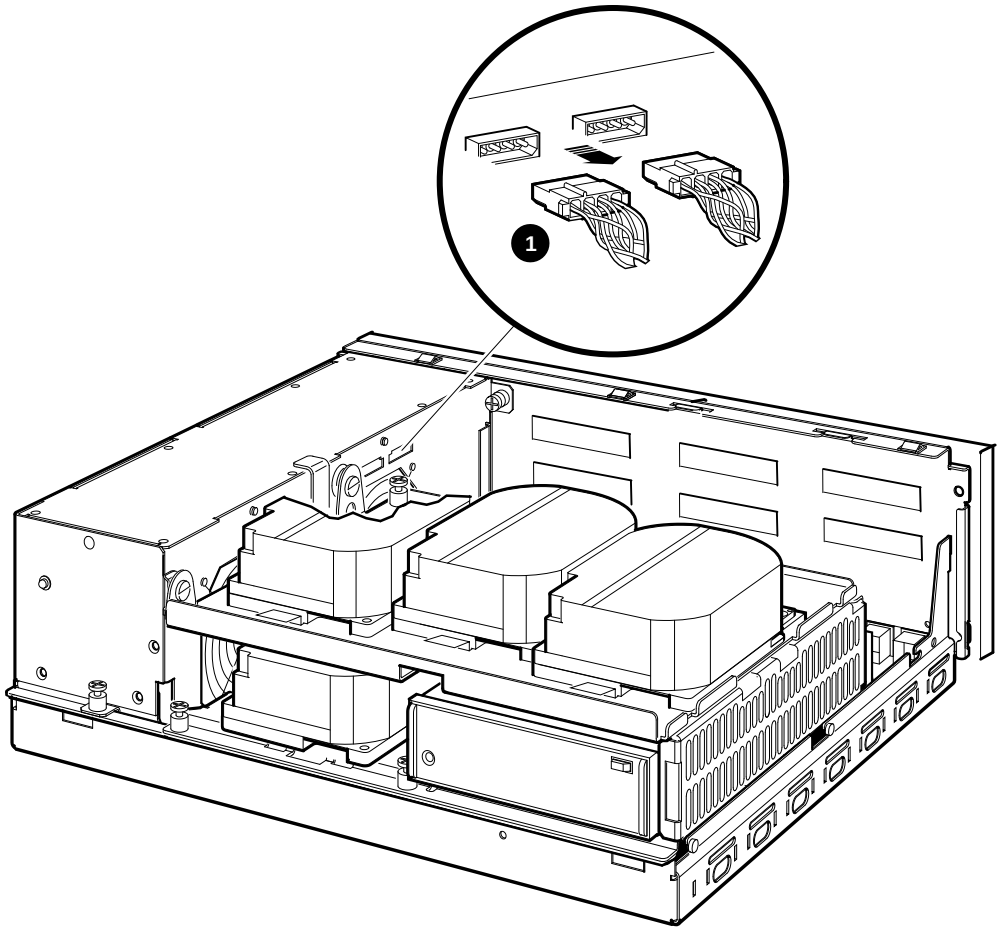
❶ Topmost captive screw
❷ Other captive screws
❸ Phillips screws

4. Disconnect the internal power cables from the power supply (Figure 1–4).

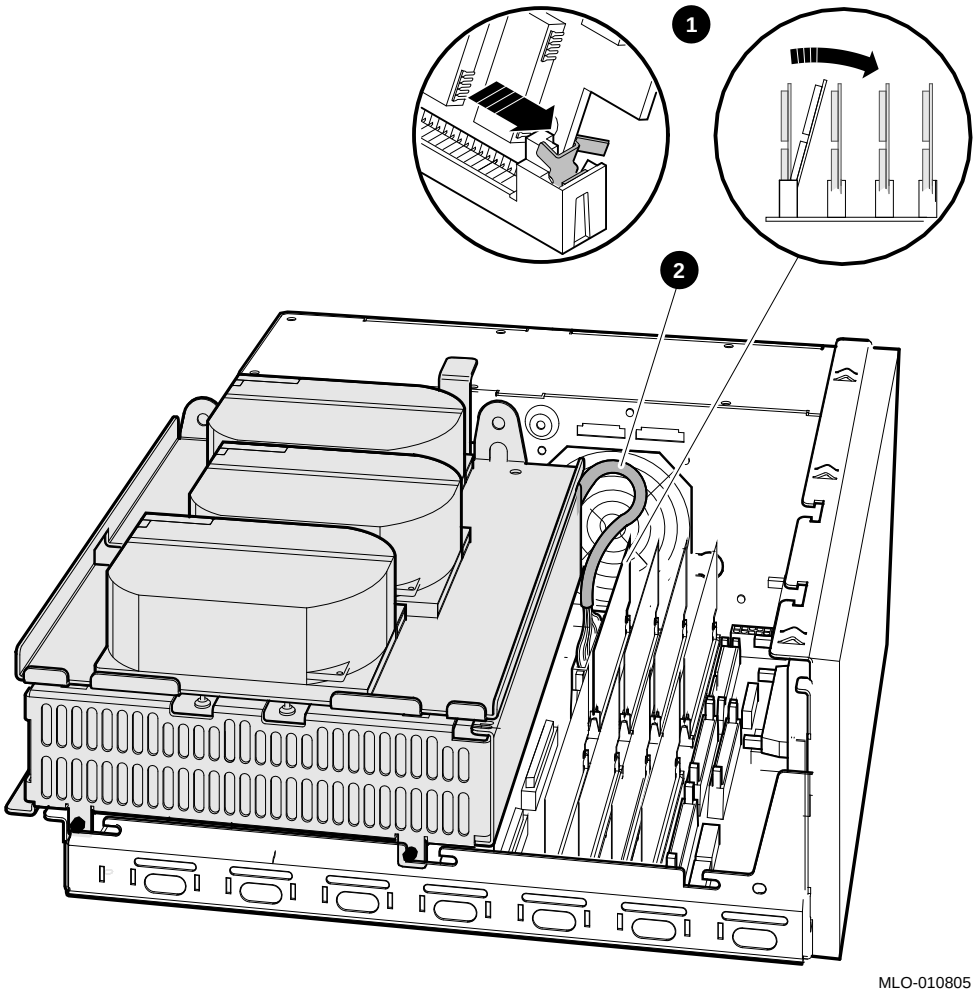
Figure 1–4 Disconnecting the Internal Power Cables



❶ Internal power cables

5. Disconnect the internal SCSI cable from the mother board (Figure 1–5).
   a. Release the memory module nearest the internal SCSI connector by pressing the tabs on each end, and tip it forward.
   b. Disconnect the internal SCSI cable from its connector on the mother board.

Figure 1–5 Disconnecting the Internal SCSI Cable from the Mother Board

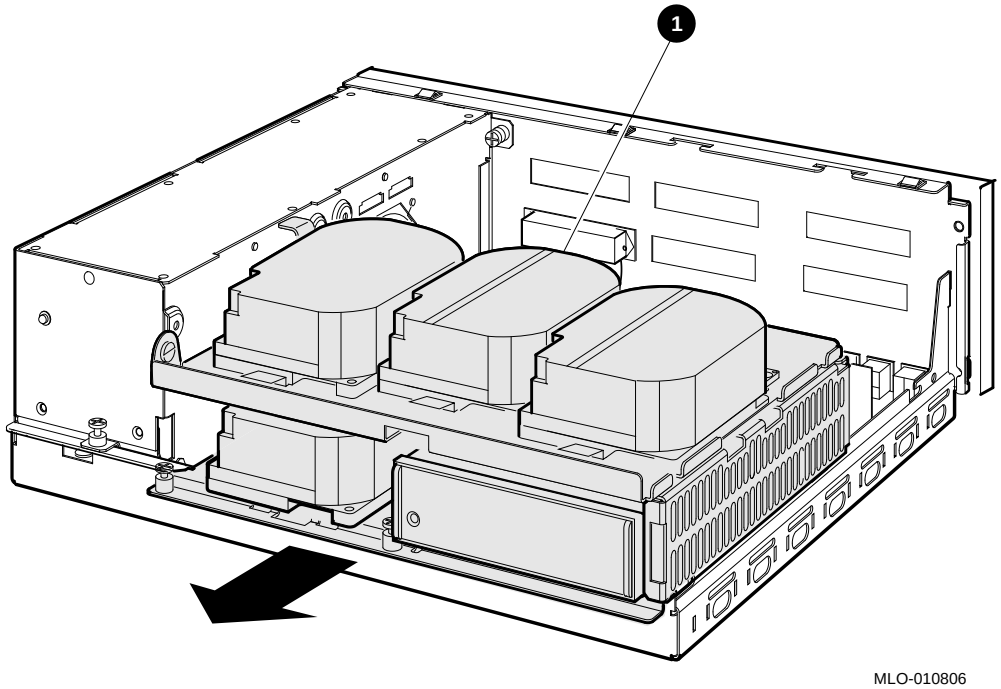


❶ Releasing the memory module and tipping it forward

❷ Internal SCSI cable

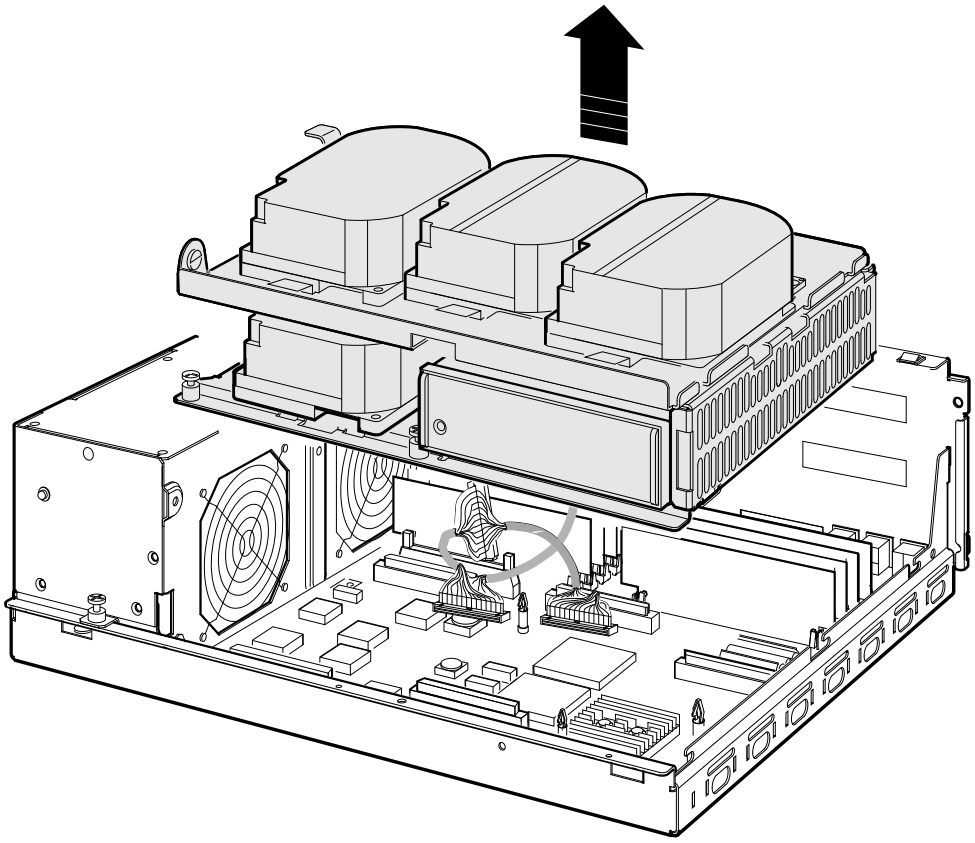
6. Remove the shelves as one unit by sliding them forward (Figure 1–6) and lifting them up and away from the enclosure (Figure 1–7). Leave the memory module tipped forward until the shelves are reinstalled.

Figure 1–6 Sliding the Drive Mounting Shelves Forward



❶ Drive mounting shelves

Figure 1–7 Lifting the Drive Mounting Shelves Upward



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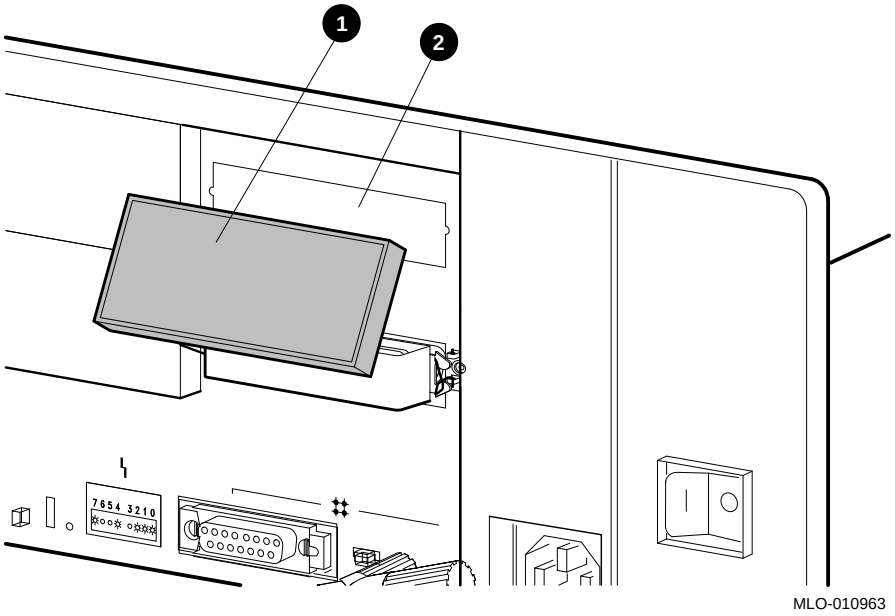
7. To remove the blank cover from the cutout on the rear of the enclosure where the new SCSI connector will be installed, push up on the bottom of the cover while simultaneously pulling it out (Figure 1–8).

Figure 1–8 Removing the Blank Cover from the Cutout

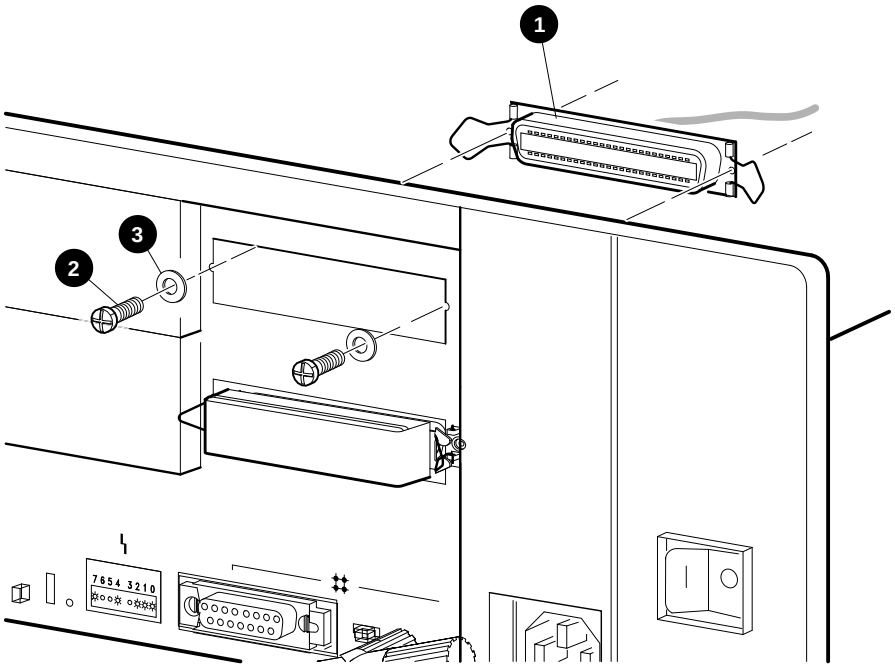


❶ Blank cover

❷ Cutout

8. Install the SCSI in/out cable (17–02542–01) included in the upgrade kit into the external cutout (Figure 1–9).

Figure 1–9 Installing the New SCSI Cable



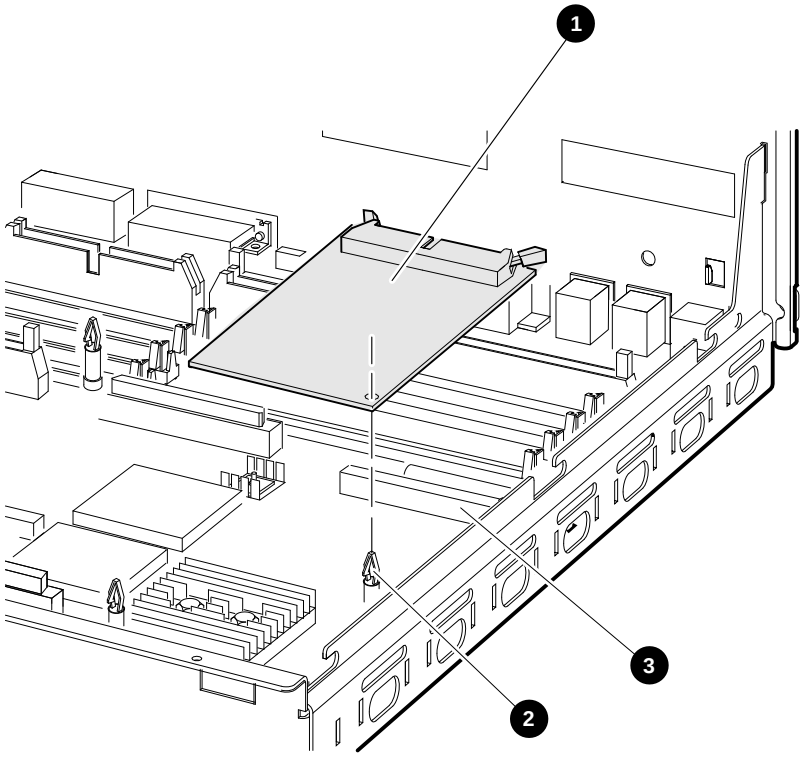
❶ New SCSI cable connector

❷ Phillips screw

❸ Washer

9. Install the SCSI daughter card onto the mother board (Figure 1–10). Align the new card on the standoff so that it is positioned above the mother board connector, then gently seat it onto the connector and the standoff.

Figure 1–10 Installing the SCSI Daughter Card



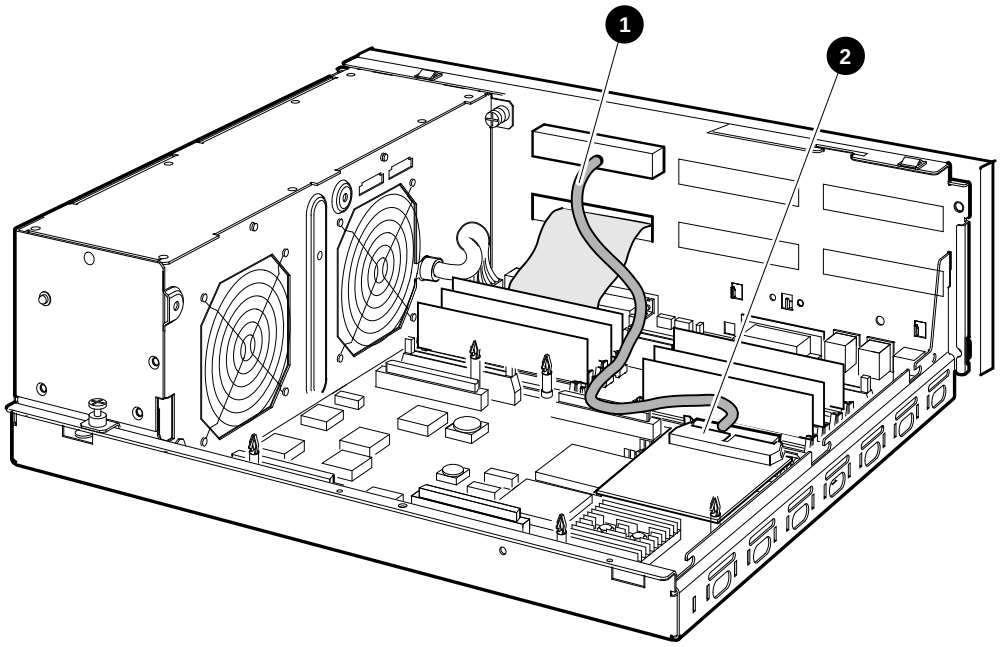
❶ Daughter card

❷ Standoff

❸ Mother board connector

10. Run the new SCSI in/out cable (17–02542–01) between the rows of memory modules and connect it to the rear connector slot on the new SCSI daughter board (Figure 1–11).

Figure 1–11 Connecting the New SCSI Cable to the Daughter Board



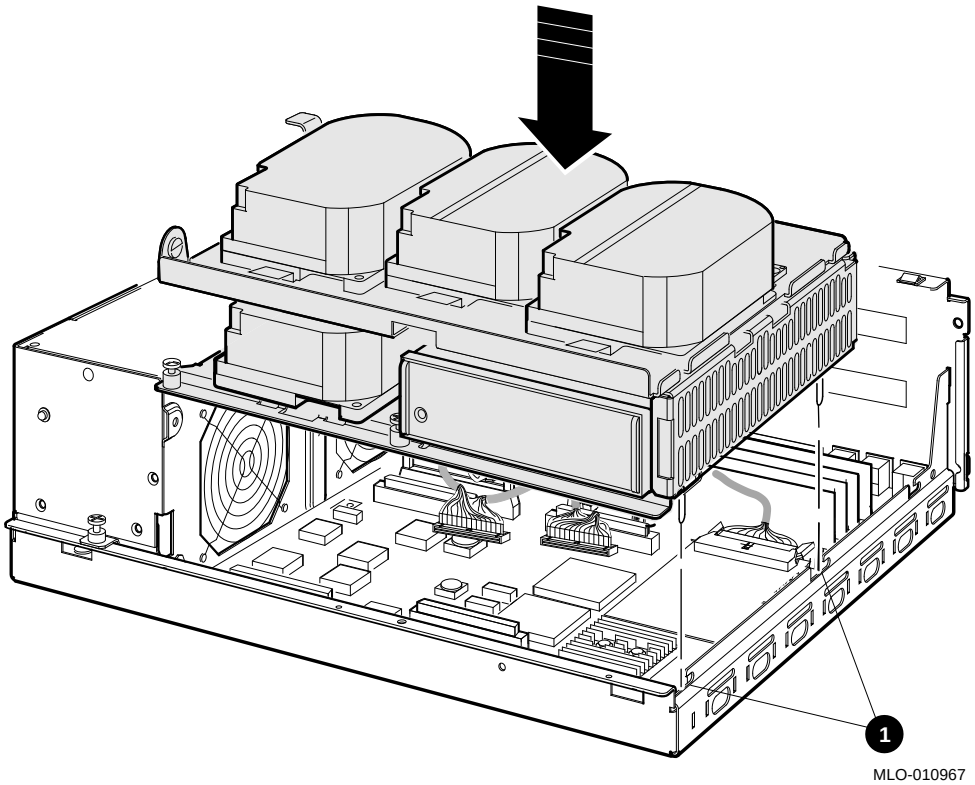
❶ New SCSI cable

❷ Connector slot on the daughter board

11. Reinstall the upper and lower drive mounting shelves in the system box, simultaneously connecting the internal SCSI cable (17–03588–01 or 17–02943–01) to the mother board.

    a. Position the shelves by lining up the bracket tabs, but do not slide them rearward yet (Figure 1–12).

Figure 1–12 Aligning the Drive Mounting Shelves



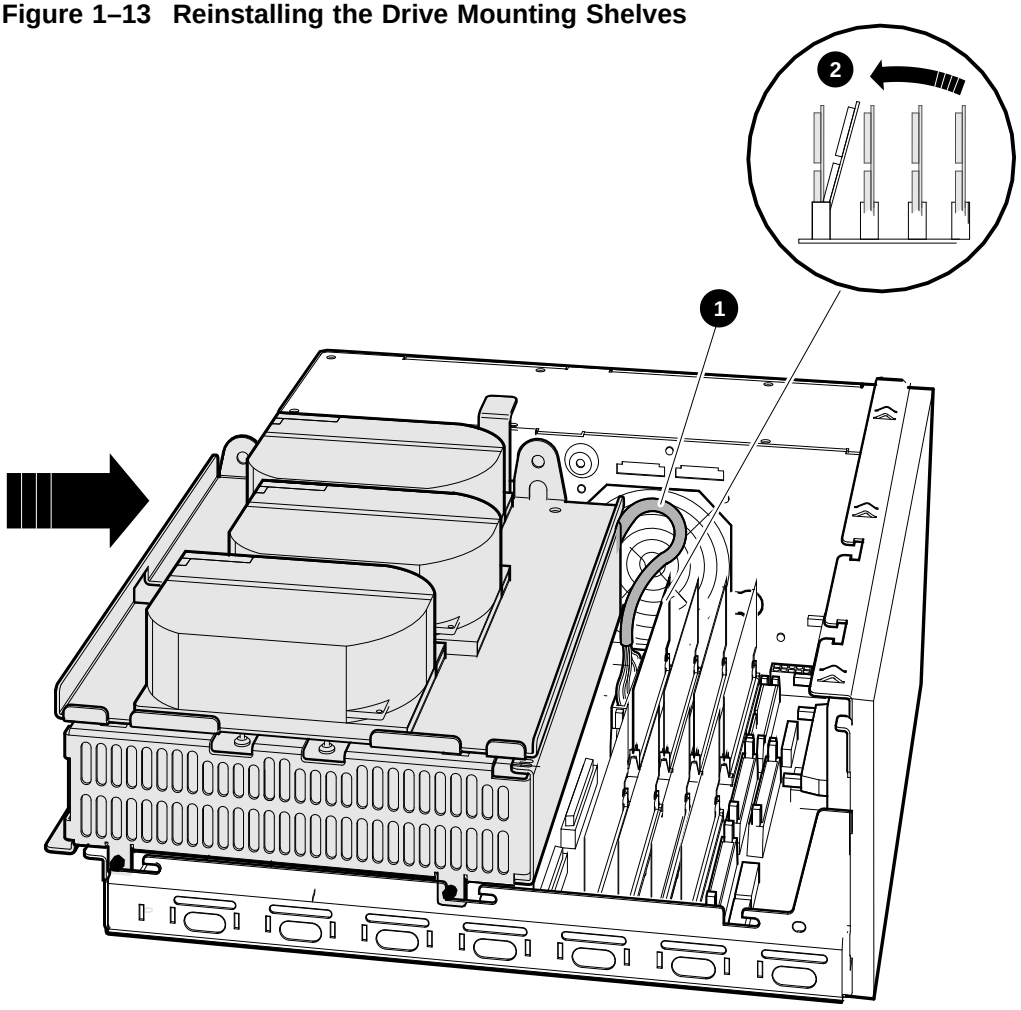
❶ Bracket tabs

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 1–5.)

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

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

Figure 1–13 Reinstalling the Drive Mounting Shelves

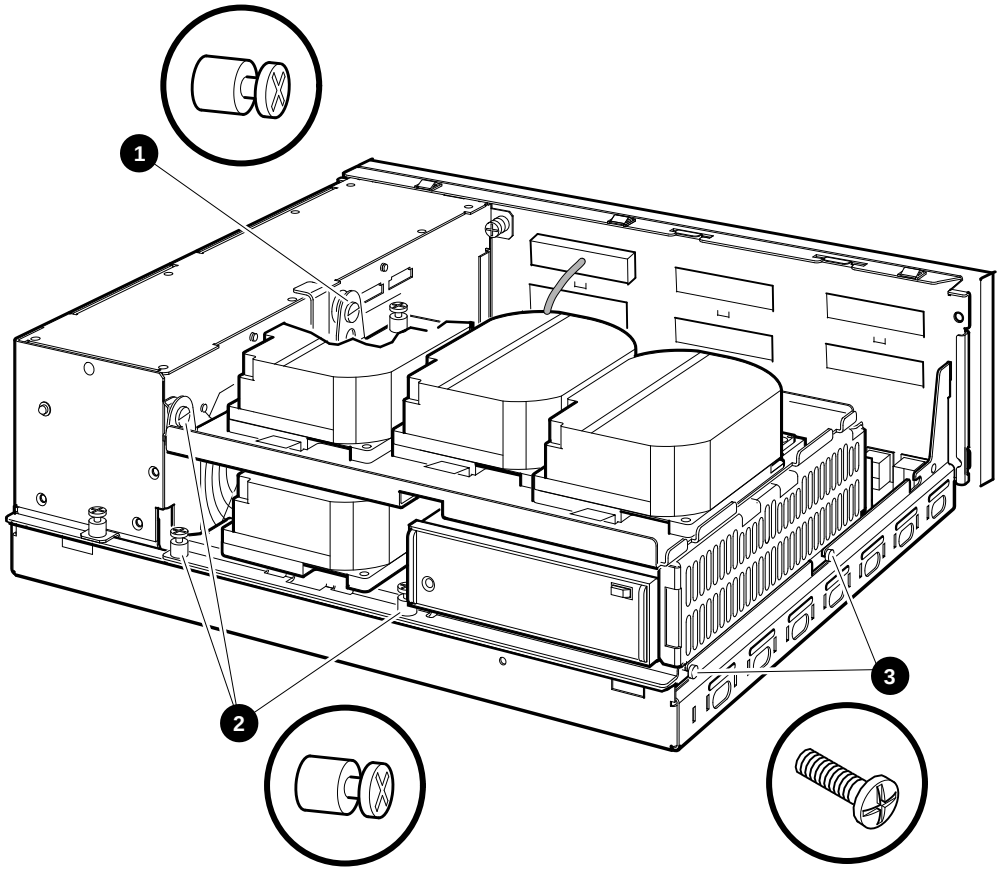


❶ Internal SCSI cable ❷ Snapping the memory module upright

e. Tighten the shelves in place using the six screws which held them in originally (Figure 1–14).

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

Figure 1–14 Securing the Drive Mounting Shelves



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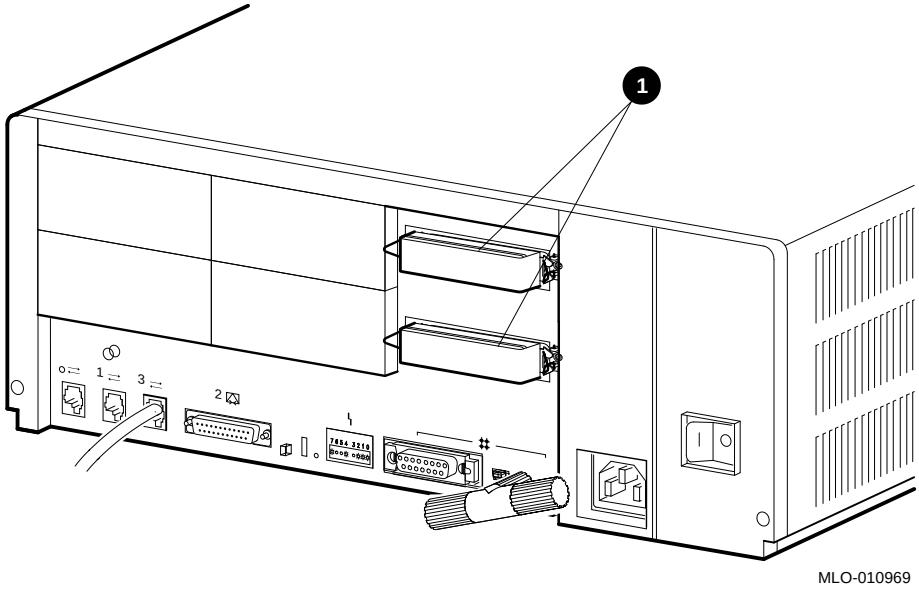
❶ Topmost captive screw
❷ Other captive screws
❸ Phillips screws

12. Reconnect the power cables (Figure 1–4).
13. Reinstall the enclosure cover (Figure 1–2).
14. Connect the cables and terminators to the SCSI connectors on the rear of the enclosure as desired (Figure 1–15).

Figure 1–15 Connecting the Cables and Terminators



❶ SCSI terminator

15. Turn on the system.
16. Have the customer reinstall the system data (if necessary).
17. Fill out the appropriate paperwork (Appendix A).

A
Conversion Forms

The following forms must be completed to ensure that both the customer's and Digital's records are up to date.

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

A.1 Procedures

Fill out the forms 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; refer to the serial number.
4. 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.
5. Contact your local Digital CAS office to obtain information for the Installation Receipt. Section A.3 lists the CAS district offices and their phone numbers.
6. 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.

A.2 Forms

This section contains the following forms:

- Digital Services Worksheet
- Installation Receipt—Customer Copy
- Installation Receipt—Digital Services Copy

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: _____

_____

_____

New System Name: _____

New System Model Number: _____

New System Serial Number: _____

New Daughter Card Serial Number: _____

Comments: _____

_____

_____

Installation Receipt—Customer Copy

For the upgrade of MicroVAX 3100 Model 90 SCSI configuration.

This form acts as a customer receipt and as verification for Digital Services that the dual SCSI 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:	Keep this copy as your record of installation by Digital Equipment Corporation.

Name of CAS representative: _____

Branch Office: _____

Digital Order Number: _____

New System Serial Number: _____

New Daughter Card Serial Number: _____

Installation was performed on this date: _____

Customer Name: _____ Phone Number: _____

Customer Signature: _____

Digital Services Representative Signature: _____

Installation Receipt—Digital Services Copy

For the upgrade of MicroVAX 3100 Model 90 to a SCSI configuration.

This form acts as a verification for Digital Services that the SCSI 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.

Name of CAS representative: _____

Branch Office: _____

Digital Order Number: _____

New System Serial Number: _____

New Daughter Card Serial Number: _____

Installation was performed on this date: _____

Customer Name: _____ Phone Number: _____

Customer Signature: _____

Digital Services Representative Signature: _____

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

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

B

Documentation and Ordering

B.1 Introduction

This appendix provides information about related documentation and ordering.

B.2 Related Documentation

You can order the following documents from Digital:

VAX 3100 Model 90 Documentation

- MicroVAX 3100 Model 90 Cover Letter (EK–A0608–CL)
- MicroVAX 3100 Model 90 Installation Information (EK–A0604–IN)
- MicroVAX 3100 Model 90 Operator Information (EK–A0605–OP)
- MicroVAX 3100 Model 90 Customer Technical Information (EK–A0606–TM)
- MicroVAX 3100 Model 90 Troubleshooting and Diagnostics Information (EK–A0607–TI)
- Updating KA50/KA52 CPU Firmware (EK–VX4FW–UP)

OpenVMS Factory Installed Software Documentation

- OpenVMS Factory Installed Software User Information (EK–A0377–UG)

B.3 Ordering Information

You can order options and documentation by mail, phone, or electronically.

Need Help?

If you need help deciding which documentation best meets your needs, please call 800–DIGITAL (800–344–4825) and press 2 for technical assistance.

Electronic Orders

To place an order through your account at the Electronic Store, dial 800–234–1998, using a modem set to 2400 or 9600 baud. You must use a VT terminal or terminal emulator set at 8 bits, no parity. If you need help, call 800–DIGITAL (800–344–4825) and ask for an Electronic Store specialist.

Telephone or Direct Mail Orders

You can order documentation by phone or direct mail.

If You Are From . . .	Call . . .	Or Write . . .
U.S.A.	DECdirect Phone: 800–DIGITAL (800–344–4825) FAX: (603) 884–5597	Digital Equipment Corporation P.O. Box CS2008 Nashua, NH 03061
Puerto Rico	Phone: (809) 781–0505 FAX: (809) 749–8377	Digital Equipment Caribbean, Inc. 3 Digital Plaza, 1st Street Suite 200 Metro Office Park San Juan, Puerto Rico 00920
Canada	Phone: 800–267–6215 FAX: (613) 592–1946	Digital Equipment of Canada Ltd. 100 Herzberg Road Kanata, Ontario, Canada K2K 2A6 Attn: DECdirect Sales
International	—	Local Digital subsidiary or approved distributor

Digital Personnel

You can order documentation by electronic mail. Contact the following organizations for instructions:

If You Need . . .	Call . . .	Contact . . .
Software documentation[1]	DTN: 241–3023 (508) 874–3023	Software Supply Business Digital Equipment Corporation 1 Digital Drive Westminster, MA 01473
Hardware documentation	DTN: 234–4325 (508) 351–4325 FAX: (508) 351–4467	Publishing & Circulation Services Digital Equipment Corporation NRO2-2/I5 444 Whitney Street Northboro, MA 01532

[1]Call to request an Internal Software Order Form (EN–01740–07).

Reader's Comments

MicroVAX 3100 Model 90
SCSI Upgrade Manual
EK–510AA–UP. A01

Your comments and suggestions help us improve the quality of our publications.

Please rate the manual in the following categories:	Excellent	Good	Fair	Poor
Accuracy (product works as described)	☐	☐	☐	☐
Completeness (enough information)	☐	☐	☐	☐
Clarity (easy to understand)	☐	☐	☐	☐
Organization (structure of subject matter)	☐	☐	☐	☐
Figures (useful)	☐	☐	☐	☐
Examples (useful)	☐	☐	☐	☐
Table of contents (ability to find topic)	☐	☐	☐	☐
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