

VAX 4/VAXstation 4 Upgrade

Installation Guide

Order Number: EK-OV4UP-IN-002

Prepared by
U.S. Area EIC Documentation Services

Digital Equipment Corporation • Merrimack, NH 03054
Printed in U.S.A

September 1991

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This document was prepared using VAX DOCUMENT, Version 2.0.

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Preface

This installation guide describes the 2T-KA660-xx kits and how to use them to upgrade:

- MicroVAX to a VAX 4 (KA660) in a dual BA23 (H9642-J) System Enclosure
- VAXstation to a VAXstation 4 (KA660) in a BA123 System Enclosure

The MicroVAX is a single-user or multi-user, standalone, 32-bit microcomputer based on the MicroVAX processor (KA630/KA650/KA655).

The VAXstation II/GPX System is a single-user, standalone, 32-bit workstation based on the MicroVAX II processor (KA630). In some cases the VAXstation II, which uses the QVS (VCB01) graphics modules, **may have to be upgraded** to a VAXstation II/GPX before the system can accept the 2T-KA660 upgrade. The information for that upgrade is available from DMEIC Engineering through your Computer Special Systems Sales Specialist .

Intended Audience

This guide is intended for use by Digital Customer Service personnel only.

Organization

This guide provides a step-by-step format for each upgrade, and it is organized as follows:

Chapter 1 — Provides the hardware configurations for the enclosures, and lists the contents of each upgrade kit.

Chapter 2 — Contains the detailed procedures for performing the upgrade on a dual BA23 (H9642-J) enclosure.

Chapter 3 — Contains the detailed procedures for performing the upgrade on a BA123 enclosure.

Chapter 4 — Contains the detailed procedures for performing the required ROM upgrade on the TQK50 Controller Module for the MicroVAX II after upgrading to the VAX 4.

Chapter 5 — Describes how to test an upgraded system using the MicroVAX diagnostic monitor (MDM) software.

Appendix A — Provides the required forms to be completed by Customer Service after performing a system upgrade.

Related Documentation

For ordering information concerning the following related documents, contact your Digital Sales Representative.

- *KA660 CPU System Maintenance Manual*
- *KA660 CPU Module Technical Manual*
- *MicroVAX Systems Maintenance Guide*
- *VAX 4000-200 Systems Maintenance Guide*
- *VAXstation 3200 and VAXstation 3500 Maintenance Advisory*
- *TQK50/TK50 Tape Drive Subsystem Manual*

Notes, Cautions and Warnings

Where notes, cautions and warnings are used in this document, specific types of information are highlighted as follows:

NOTE—Calls the attention to any item of information that may be of special importance to the reader.

CAUTION—Contains essential information to avoid damage to the equipment.

WARNING—Contains essential information for the safety of the user.

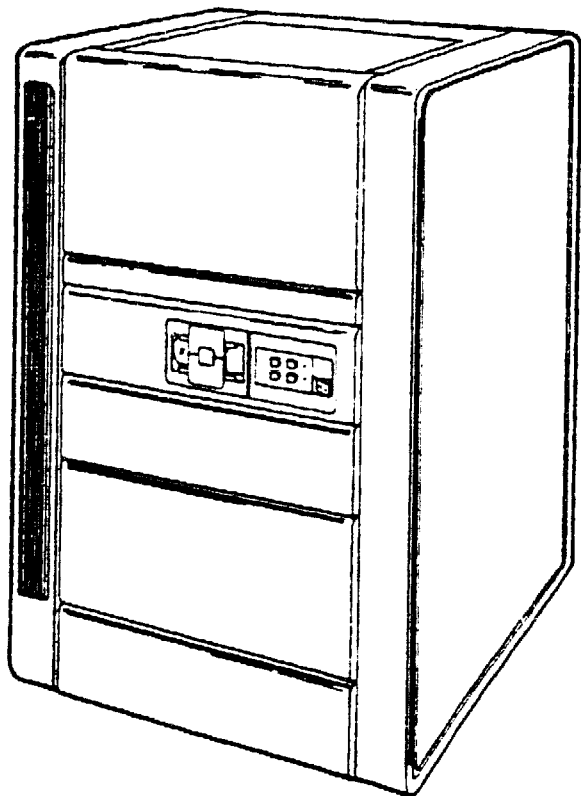
Chapter 1

Determining System Needs

1.1 The Current System

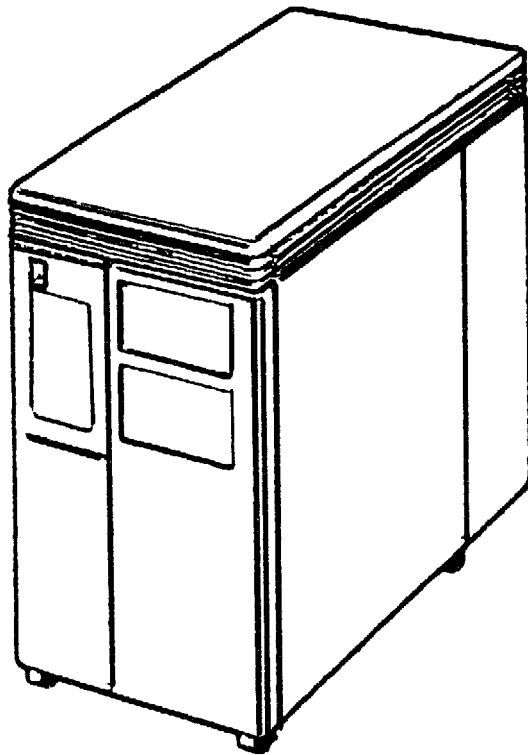
To upgrade a MicroVAX or a VAXstation system to a VAX 4 or VAXstation 4, respectively, you must first determine the type enclosure on the customer's present system. To do so, compare the customer's system to those shown in Figure 1-1 (dual BA23 chassis in an H9642-J enclosure) and Figure 1-2 (a BA123 enclosure).

Figure 1-1: H9642-J Enclosure



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Figure 1-2: BA123 Enclosure



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1.2 Operating System and Related Software

The minimum operating system revision level for the VAX 4 and the VAXstation 4 is VMS Version 5.4-1. The VAXstation 4 also requires VAX Workstation Software (VWS) Version 4.4.

1.3 Upgrade Kits

There are two major versions of upgrade kits. One version is for transforming H9642-J-based MicroVAX systems to VAX 4 systems as described in Chapter 2, and the other version is for transforming BA123-based VAXstation systems to VAXstation 4 systems as described in Chapter 3.

NOTE

In some cases the VAXstation II, which uses the QVS (VCB01) graphics modules, may have to be upgraded to a VAXstation II/GPX before the system can accept the 2T-KA660 upgrade. The information for that upgrade is available from DMEIC Engineering through your CS4.

When upgrading a MicroVAX II to a VAX 4, the TQK50 ROM upgrade kit must also be installed as described in Chapter 4.

Use Table 1-1 and Figure 1-3 to identify the contents of the VAX4/VAXstation 4 upgrade kit. The checklist numbers in the table correspond to the numbered items in the figure.

Upon arrival at the customer site, always check the upgrade kit contents (all versions) and make sure the additional modules (if any) are at the site before powering down the customer's system. If any component is damaged or missing, do not power down the system (causing the customer further inconvenience).

Check and make sure you have the following:

- The correct kit and all of its required parts
- Any additional required modules (because of the minimum revision levels)
- Required software and licenses

Table 1-1: 2T-KA660-xx Checklist

Item	Part Description	Part Number	Qty
1 ¹	KA660-AA multi-user CPU module	M7626-AA	1
	KA660-BA single-user CPU module	M7626-BA	
2 ²	MS650-BA 16 MB CPU memory module	M7622-AA	1
	MS650-BB 8 MB CPU memory module	M7622-BA	
3	CPU to memory cable	17-01898-01	1
4A ³	VAX 4 medallion for BA23	74-37202-08	1
4B ³	VAX 4 medallion for BA123	74-31480-20	1
5A ⁴	VAXstation 4 medallion for BA23	74-37202-09	1
5B ⁴	VAXstation 4 medallion for BA123	74-31480-21	1
6	Medallion spring	12-20113-01	1
7	Upgrade kit, product serial number label	36-17674-00	1
8	Return label	36-26123-04	2
9	Grant card	M9047	1
10	Hardware information kit	QZ-K25AB-GZ	1
11	<i>VAX 4/VAXstation 4 Upgrade Installation Guide</i>	EK-OV4UP-IN	1
12 ⁵	TQK50 upgrade ROM	23-331E5-00	1
	TQK50 upgrade ROM	23-330E5-00	1
	TQK50 upgrade ROM	23-065L1-00	1
13	Ethernet operator console with cable	CK-KA660-AA	1
14	50-conductor flat cable	17-01835-02	1
15	TK50 diagnostics kit	QZ-K14AA-U5	1

¹The CPU module packed in the kit depends on the kit ordered.

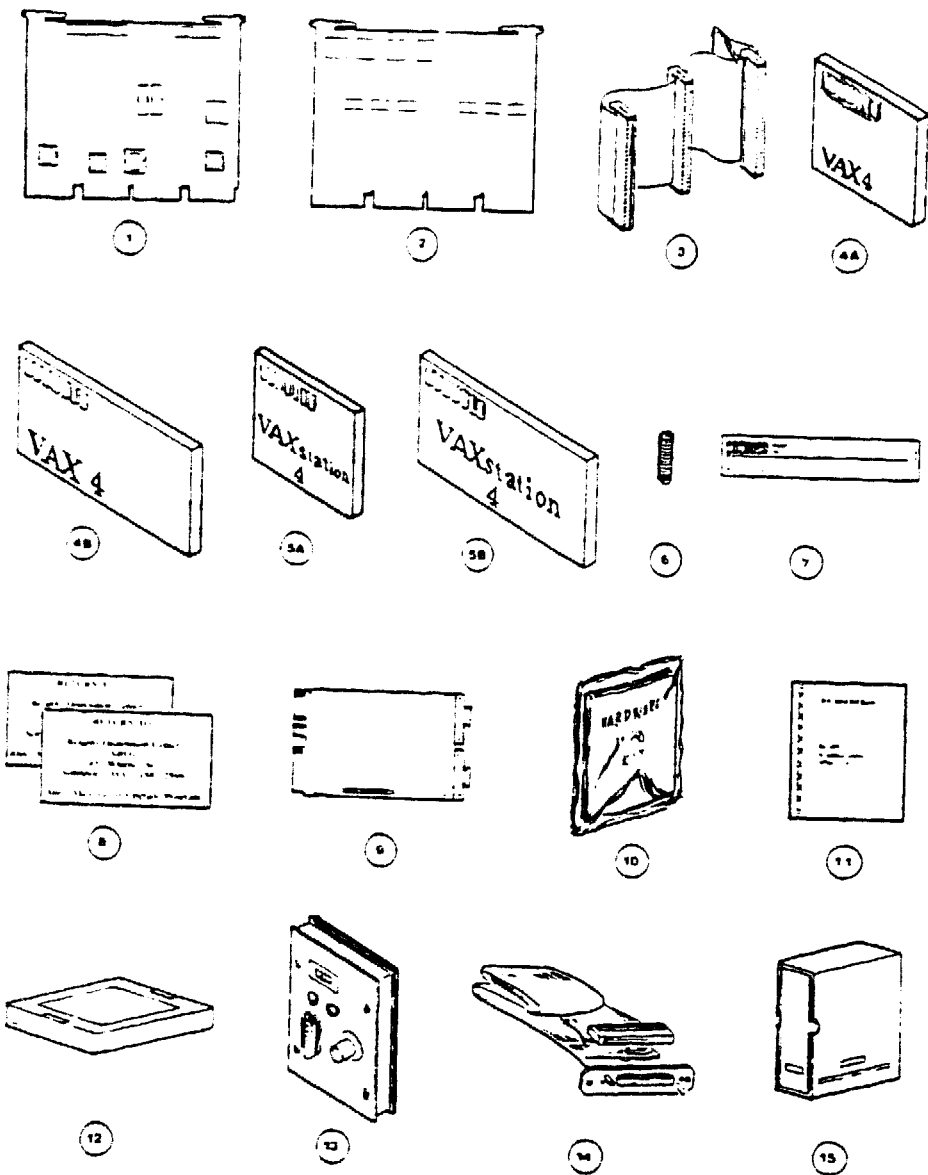
²The memory module packed in the kit depends on the kit ordered.

³This medallion is included in multi-user upgrade kits for MicroVAX systems.

⁴This medallion is included in single-user upgrade kits for VAXstation systems.

⁵The three ROMs are packed in one box.

Figure 1-3: 2T-KA660 Kit Contents



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1.4 Software Backup and Operating System Shutdown

NOTE

It is the customer's responsibility to perform a software backup and shut down the operating system software.

Before the existing system is powered down, the customer should back up the operating system and all related software. Make sure the customer has performed a software backup and also has shut down the operating system software before you continue. Detailed instructions for the backup are included in the customer's VMS operating system documentation.

1.5 Systems Running MicroVMS

The MicroVMS operating system software is not supported on the VAX 4 or the VAXstation 4 systems. A system that was running MicroVMS before the upgrade kit installation must have VMS version 5.4-1 software installed. Refer to the software installation guide for directions on installing VMS.

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Chapter 2

Upgrading the Dual BA23 Systems

This chapter describes how to install the VAX 4/VAXstation 4 upgrade in an H9642-J enclosure.

Typically, dual BA23 systems are known as H9642-J enclosures. They may also be called System 5 cabinets or 630QE systems. To eliminate confusion in the following procedures, the dual BA23 system will be referred to as the H9642-J enclosure.

NOTE

When the upgrade is being performed to a pedestal mount BA23, this section can be used as a guide during the board swap.

2.1 Installing the Upgrade in an H9642-J Enclosure

To upgrade the system, follow the steps outlined below:

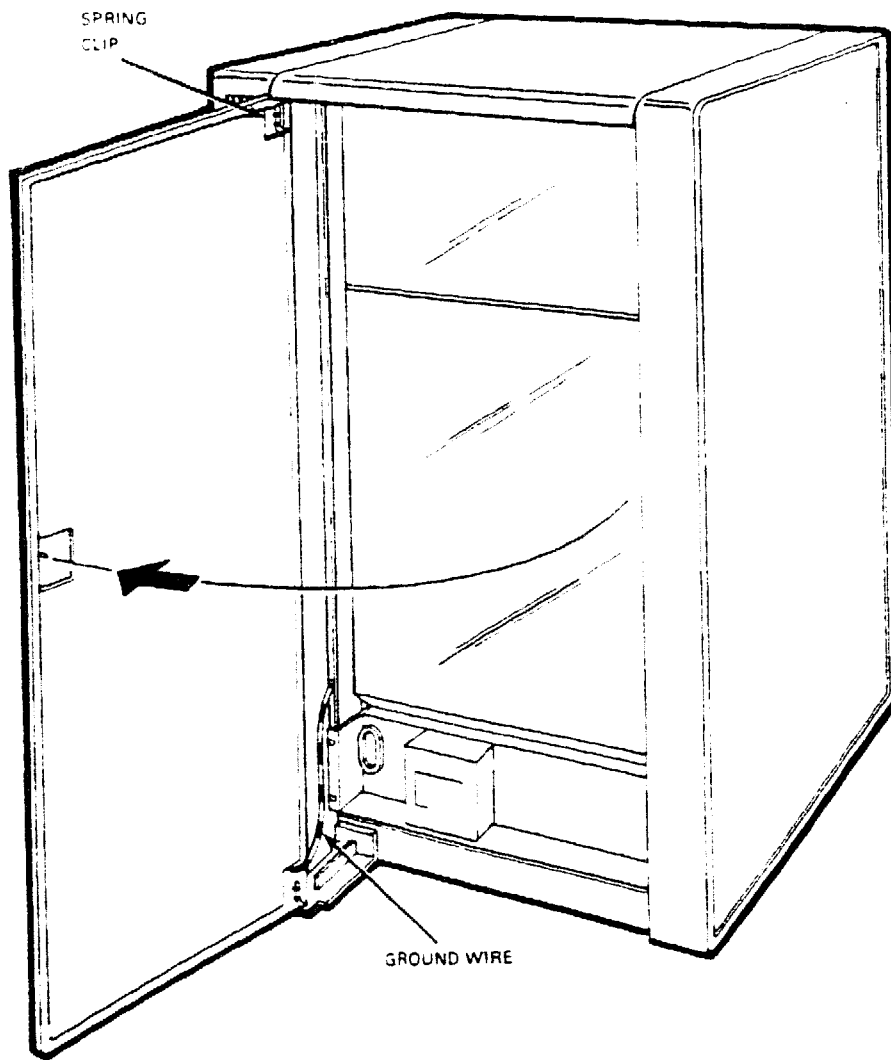
1. Check the upgrade kit contents to make sure each item is included (refer to Figure 1–3).
2. Make sure the customer backs up all media and performs an orderly system shutdown (refer to Section 1.4).
3. Load MicroVAX diagnostic monitor (MDM) and test the system.
4. Turn the system power off at the top BA23 enclosure ON/OFF switch and disconnect the ac power.
5. Replace the modules that need to be brought up to the minimum revision levels as stated in the custom quote.
6. Reconnect the ac power cord, power up, and retest the system using MDM to ensure the replaced modules operate properly.
7. Turn the system power off at the top BA23 enclosure ON/OFF switch and disconnect the ac power.
8. Perform the upgrade using the procedures in this chapter (Section 2.2 through Section 2.7).
9. Perform the TQK50 Controller Module ROM upgrade if needed as described in Chapter 4. Then reconnect the power cord, turn the power on, and retest the system using MDM diagnostics (release 134 or greater) as described in Chapter 5.

2.2 Removing the Rear Door

To remove the rear door, see Figure 2–1 and proceed as follows:

1. Unlock the rear door using a hex wrench.
2. Open the rear door and locate the ground wire between the door and the cabinet main frame.
3. Remove the ground wire at the door and press down on the upper right spring clip. Lift the door up and off the cabinet main frame.

Figure 2-1: Rear Door Removal (H9642-J)



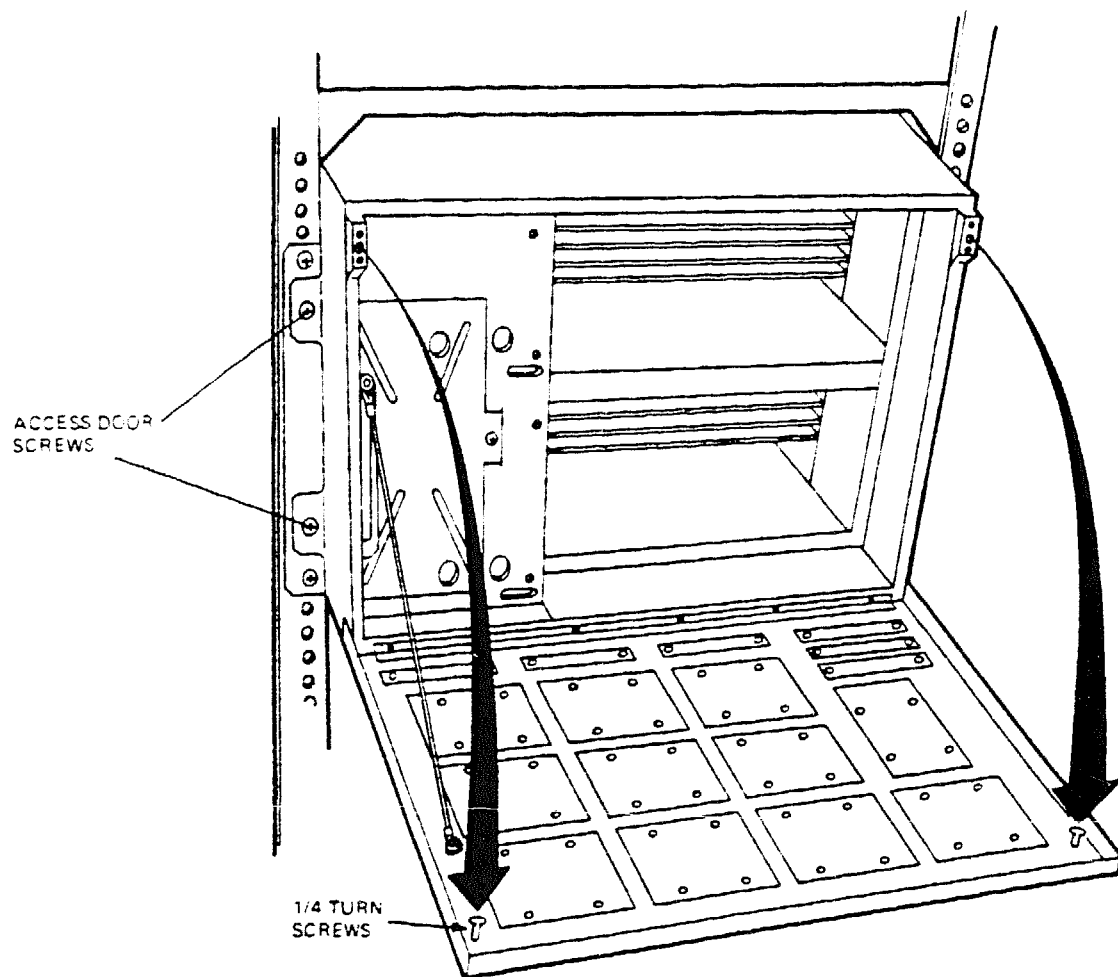
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2.3 Lowering the Rear I/O Panel

To lower the rear I/O panel, see Figure 2-2 and proceed as follows:

1. Use a screwdriver to loosen the two quarter-turn fasteners in the upper left and right corners of the rear I/O panel.
2. Open the rear I/O panel and lower it gently to the limit of the restraint cable.

Figure 2-2: Lowering Rear I/O Panel (H9642-J)



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2.4 Removing the CPU and Memory Modules

To remove modules from the H9642-J enclosure, see Figure 2-3 and perform the following steps:

CAUTION

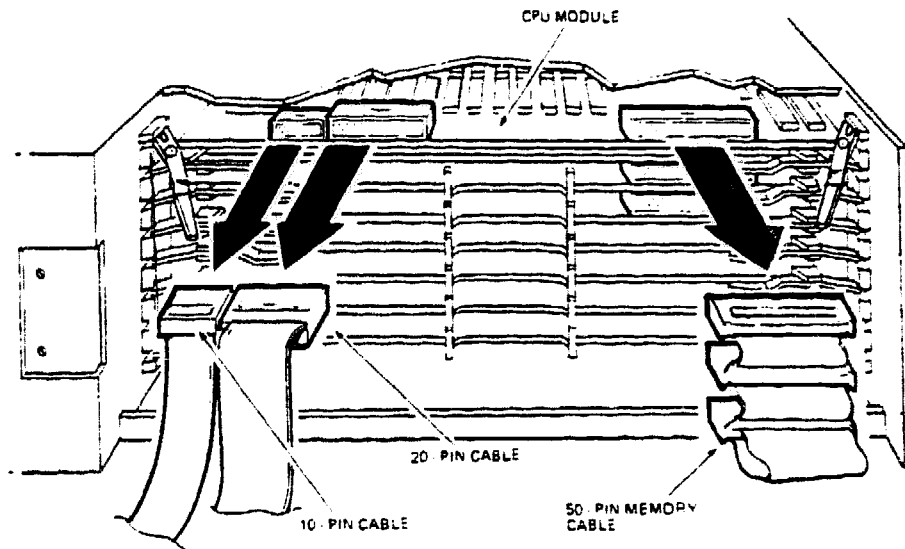
Static electricity can damage modules. Always use a grounded wrist strap and grounded work surface when working with or around modules. A static kit (P/N 29-11762-00) provides the appropriate tools for removing and replacing modules. Remove and install modules carefully to prevent damage to other modules or changes to the switch settings.

NOTE

When removing a module, note the orientation of the internal cables. When installing a new module, be sure to reinstall the cables in the same position they were in before they were removed. Incorrect cabling is a common cause of system problems after a module is replaced.

1. Locate the KA630, KA650 or KA655 (CPU) module in slot 1 (top slot) of the chassis and the MS630 or MS650-Ax (memory) module(s) in slots 2 and 3 as appropriate.
2. Remove the 10-pin and 20-pin cables from the CPU module and the control module (located on bulkhead and not shown in Figure 2-3).
3. Remove the 50-pin memory cable that connects the CPU module to the memory module(s).
4. Slide the CPU module partially out of the backplane by firmly pulling the levers toward you. **Apply pressure evenly to both levers.**
5. Remove the CPU module from the system.
6. Remove the memory module(s) from the system in the same manner.

Figure 2-3: Removing Cables/Modules (H9642-J)



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2.5 Installing the KA660 and MS650-Bx Modules

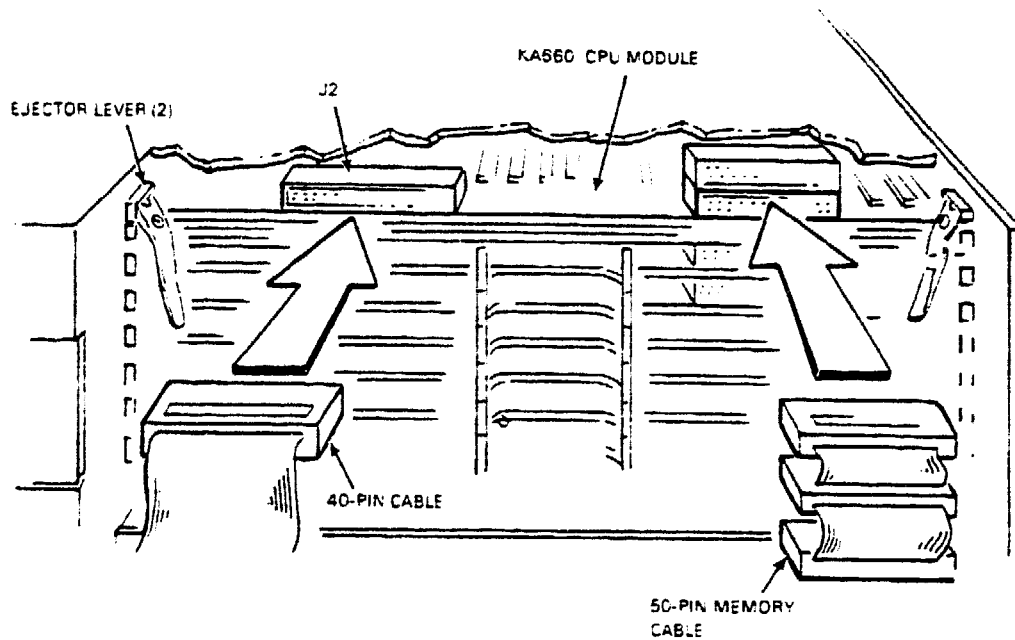
To install the modules in an H9642-J enclosure, perform the following steps:

CAUTION

When performing step 1, carefully flex the CPU module downward so that the double cable connectors clear the top of the card cage enclosure.

1. Slide the KA660 CPU module completely into slot 1 (top slot). Make sure to connect the ejector levers properly (see Figure 2-4).

Figure 2-4: Installing the KA660 CPU Module and Memory Cable (H9642-J)

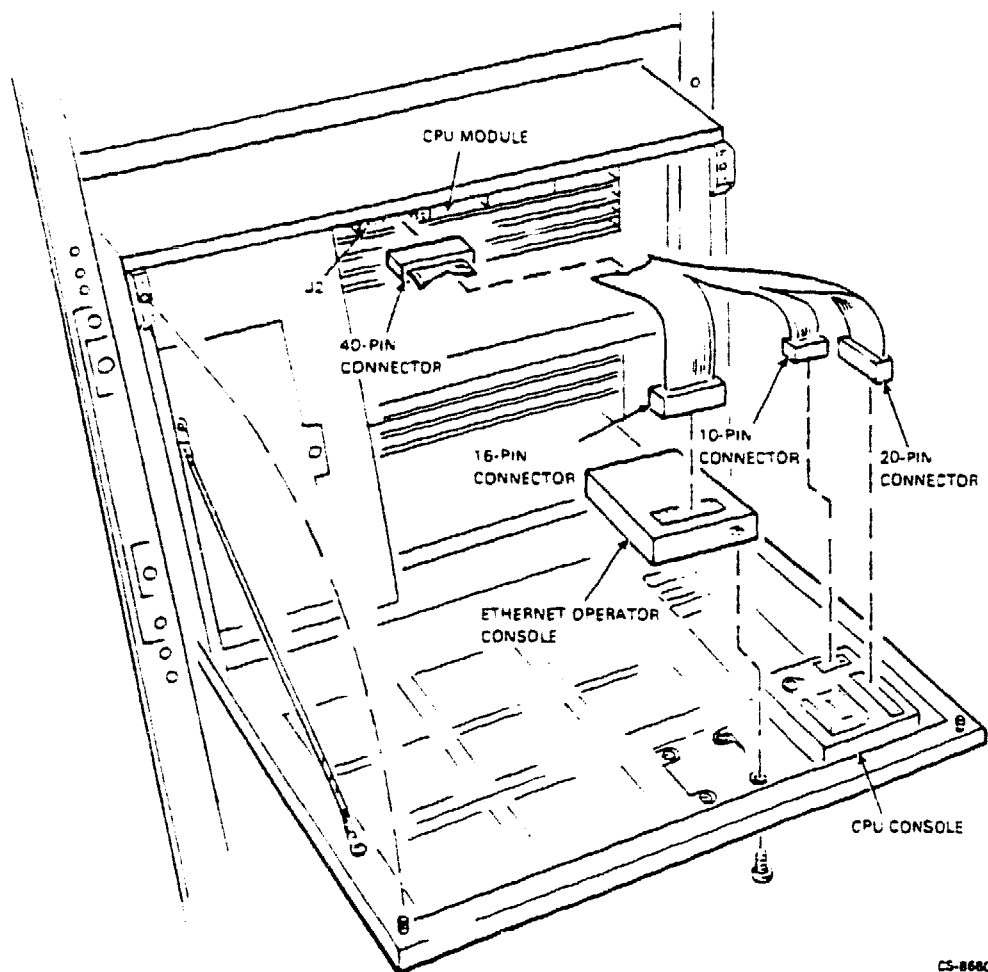


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2. In the same manner, install the MS650-Bx memory module into slot 2.
3. Connect the KA660 and MS650-Bx modules together using the 50-pin memory cable provided in the upgrade kit.

4. Install the Ethernet operator console in the opening adjacent to the CPU console (see Figure 2-5).

Figure 2-5: Installing Ethernet Operator Console and Cables (H9642-J)



CS-8680

5. Connect the Ethernet/Console cable 40-pin connector to the 40-pin connector (J2) on the KA660 CPU (see Figure 2-4 and Figure 2-5).
6. Connect the 16-pin connector of the cable to the Ethernet operator console connector (see Figure 2-5).

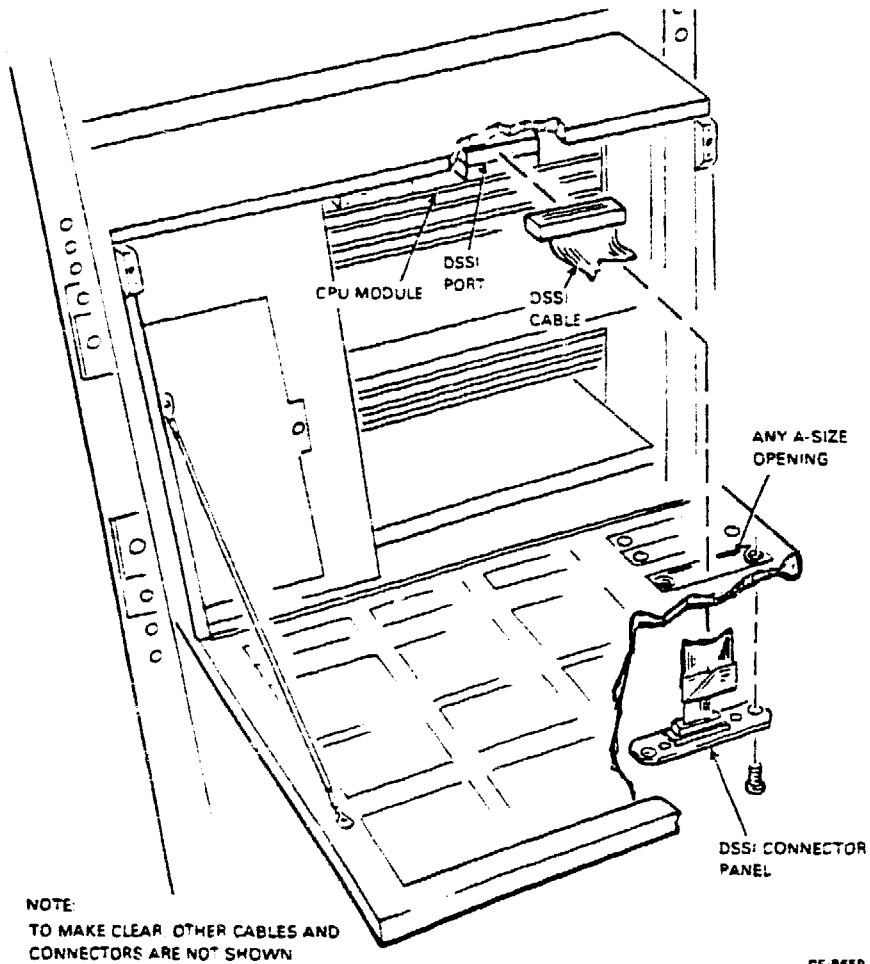
7. Connect the 10-pin and 20-pin connectors to the corresponding 10-pin and 20-pin connectors on the CPU console.

NOTE

Do not close the rear I/O panel or reinstall the rear door at this time. You will need to access the top BA23 enclosure again to upgrade the ROMs on the TQK50 controller module as described in Chapter 4.

8. If the customer wants the added ability to connect external DSSI devices, proceed as follows:
 - a. Locate the 50-conductor DSSI cable in the 2T-KA660 kit and install the DSSI connector panel in an unoccupied A-size bulkhead opening as shown in Figure 2-6.
 - b. Connect the 50-pin connector of the DSSI cable to the DSSI port on the CPU module.

Figure 2-6: Optional DSSI Cable Connection (H9642-J)

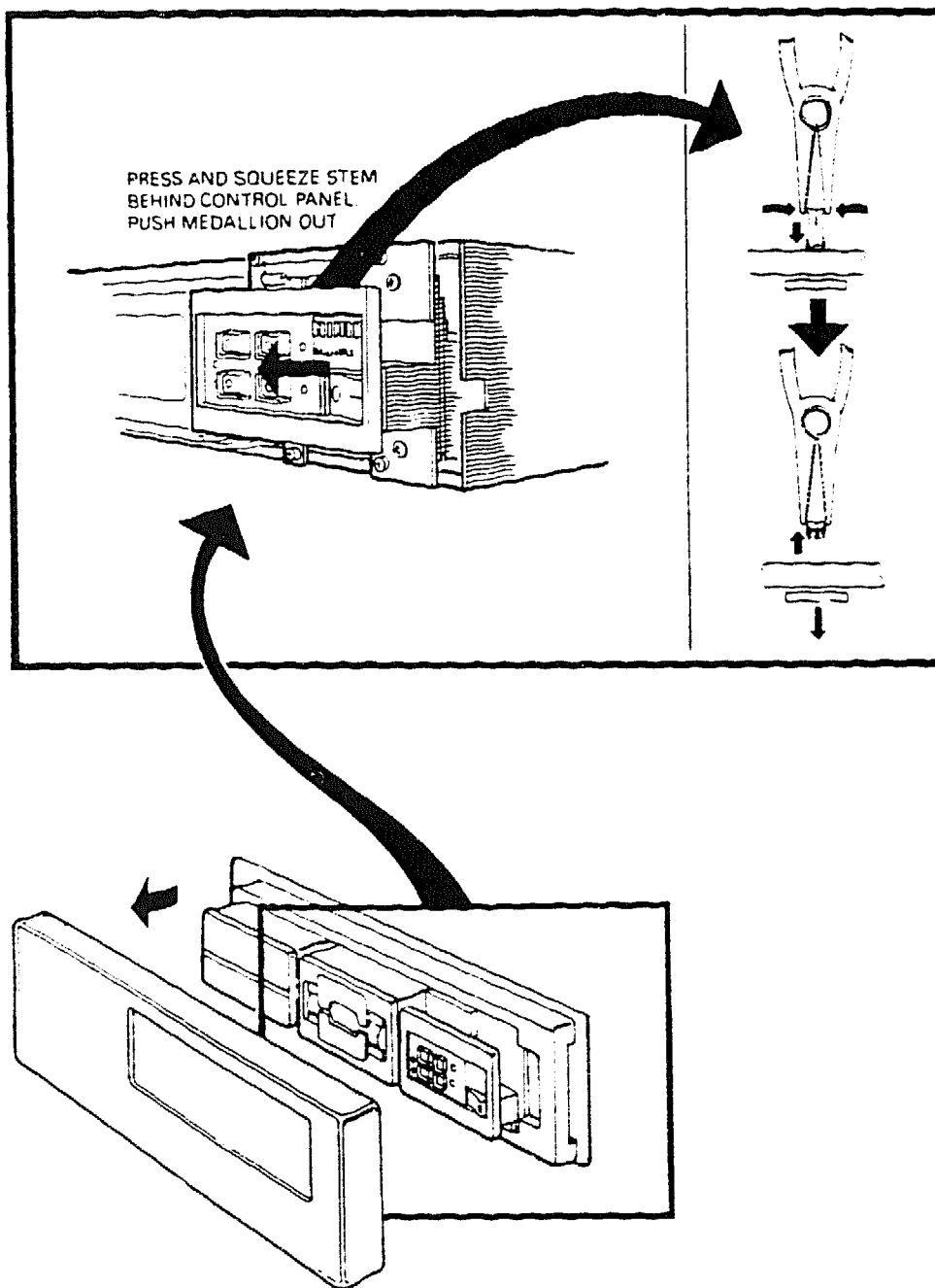


2.6 Changing the Medallion

To change the medallion, see Figure 2~7 and proceed as follows:

1. Remove the front cover from the BA23 enclosure.
2. Look behind the plate on which the medallion is mounted and locate the spring that holds the medallion in place.
3. Push the spring away from the flanged neck of the medallion, and squeeze the flange together with a pair of pliers.
4. Gently slide the spring over the neck of the medallion.
5. Choose the appropriate new medallion from the upgrade kit and push it into place.
6. Squeeze the neck of the medallion together with a pair of pliers, and slide the spring over the neck to secure the medallion.
7. Replace the front cover of the BA23 enclosure.

Figure 2-7: Changing the Medallion (H9642-J)



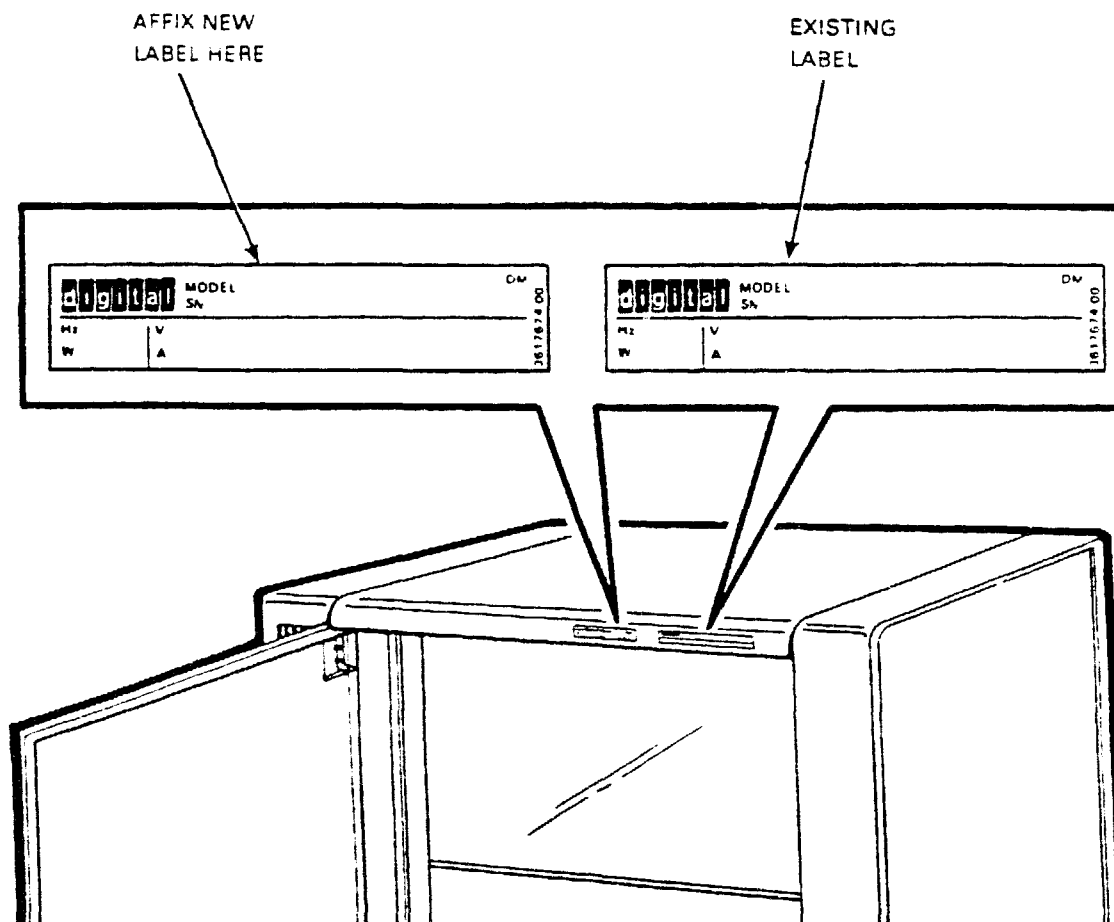
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2.7 Installing the New Product Serial Number Label

A new product serial number label must be placed on the back of the H9642-J enclosure to document the changes to the system. To do this, proceed as follows:

1. Locate the new product serial number label in the upgrade kit.
2. Affix the new product serial number label to the H9642-J enclosure as shown in Figure 2-8.

Figure 2-8: Placing the New Product Serial Number Label (H9642-J)



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Chapter 3

Upgrading BA123 Systems

This chapter describes how to install the VAX 4/VAXstation 4 upgrade in a BA123 System Enclosure.

In the past, BA123 systems were known as either MicroVAX II or VAXstation II/GPX systems. For ease of reference in this chapter, the VAXstation/GPX system, also known as the World Box and 630QB systems, will be referred to as a BA123 enclosure.

3.1 Installing the Upgrade in a BA123 Enclosure

To upgrade the system, follow the steps outlined below:

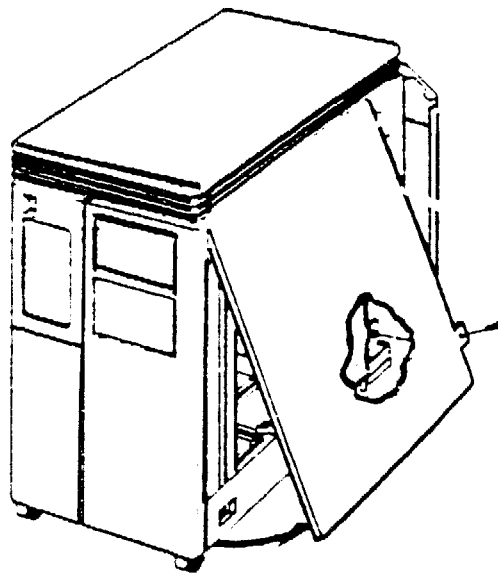
1. Check the upgrade kit contents to make sure each item is included (refer to Figure 1-3).
2. Make sure the customer has backed up all media and performed an orderly system shutdown (refer to Section 1.4).
3. Load MicroVAX diagnostic monitor (MDM) and test the system.
4. Turn the system OFF and unplug the ac power cord from the wall socket.
5. Replace all the modules that need to be brought up to the minimum revision levels as stated in the custom quote. In some cases the VAXstation II system, which uses the QVS (VCB01) graphics module, may have to be upgraded to a VAXstation II/GPX system before it can accept the 2T-KA660 upgrade. Information for the upgrade to a VAXstation II/GPX system is available from DMEIC Engineering through your CS4.
6. Reconnect the ac power cord, turn on the power, and retest the system using MDM diagnostics to ensure the replaced modules operate properly.
7. Turn the system power off at the top BA123 enclosure ON/OFF switch and disconnect the ac power.
8. Perform the upgrade using the procedures in this chapter (Section 3.2 through Section 3.6).
9. Perform the TQK50 Controller Module ROM upgrade if needed as described in Chapter 4. Then reconnect the power cord, turn on the power, and retest the system using MDM diagnostics (release 134 or greater) as described in Chapter 5.

3.2 Right Side Panel Removal

To remove the right side panel, proceed as follows:

1. Open the rear door.
2. Loosen the captive screw that connects the right side panel to the rear of the enclosure frame (Figure 3-1).

Figure 3-1: Unhooking the Right Side Panel (BA123)

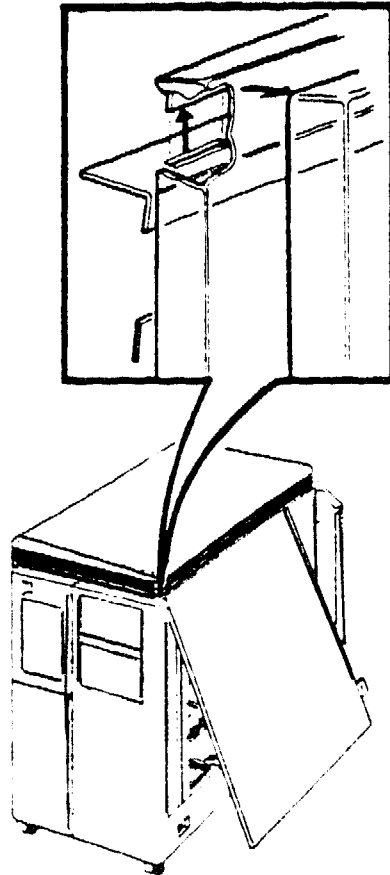


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3. The panel is attached to the bottom of the enclosure frame by two snap fasteners. Pull the bottom of the panel out until the panel detaches from the bottom of the enclosure.

4. Lift the panel slightly to release it from the lip at the top of the frame and remove the panel (Figure 3-2).

Figure 3-2: Removing the Right Side Panel (BA123)



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3.3 Removing the CPU and Memory Modules

To remove modules from the BA123 enclosure, refer to Figure 3-3 and proceed as follows:

CAUTION

Static electricity can damage modules. Always use a grounded wrist strap and grounded work surface when working with or around modules. A static kit (P/N 29-11762-00) provides the appropriate tools for use in module removal and replacement.

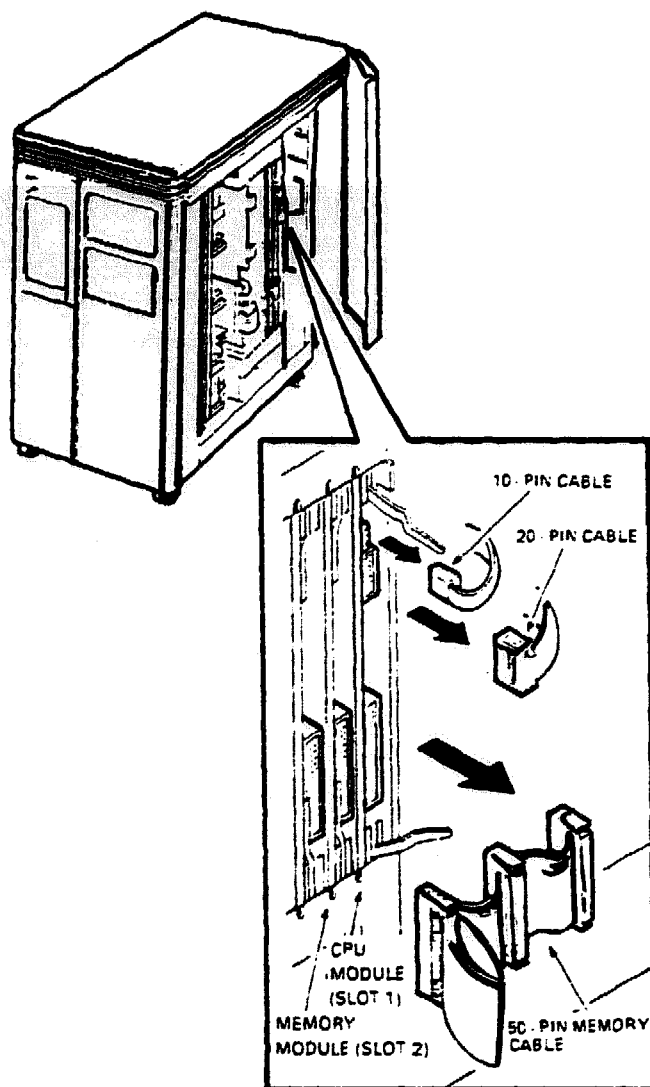
Remove and install modules carefully to prevent damage to module components on other modules or possible changes to the switch settings.

NOTE

When removing a module, note the orientation of the internal cables. Some have a red stripe; others are keyed. When installing a new module, be sure to reinstall the cables in the same position they were in before they were removed. Incorrect cabling is a common cause of system problems after replacing a module.

1. Remove the card cage door.
2. Locate the KA630, KA650, or KA655 (CPU) module in slot 1 (the right-most slot) of the chassis and the MS630 or MS650-Ax (memory) module in slot 2.
3. Remove the 10-pin and 20-pin cables from the CPU module and the control module (located on the bulkhead and not shown in Figure 3-3).
4. Remove the 50-pin memory cable connecting the CPU module to the memory module(s).
5. Slide the module partially out of the backplane by pulling the ejector levers that hold the module in place (Figure 3-3).
6. Remove the CPU module from the system.
7. Remove the memory module(s) from the system in the same manner.

Figure 3-3: Removing the Cable/Modules (BA123)



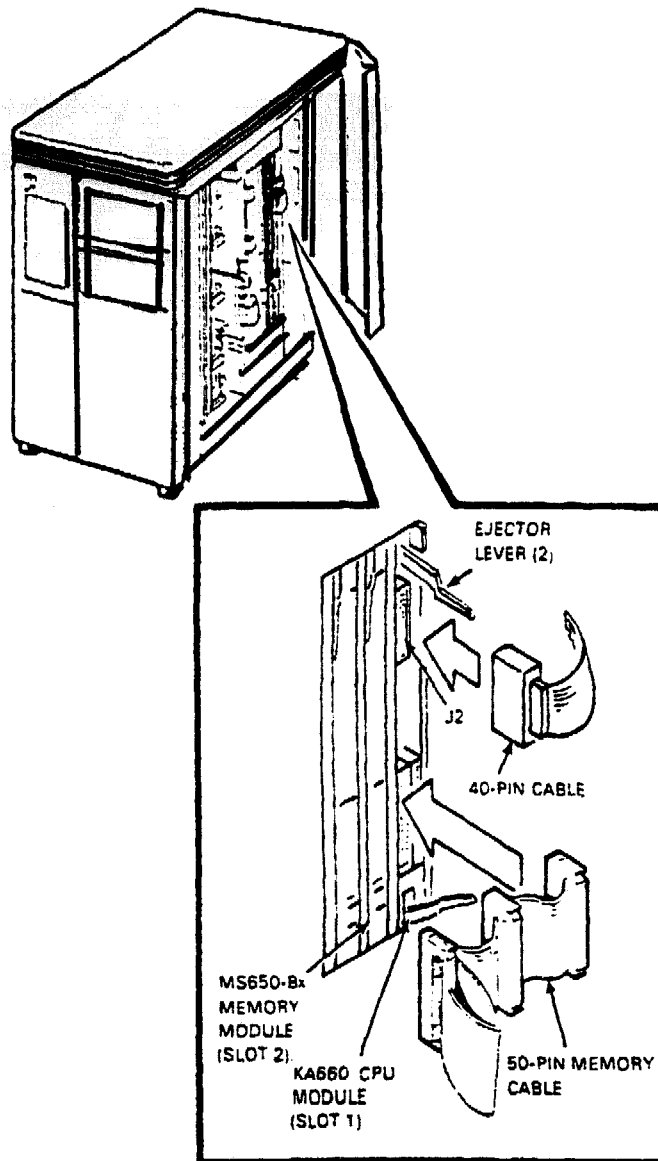
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3.4 Installing the KA660 and MS650-Bx Modules

To install the modules in a BA123 enclosure, proceed as follows:

1. Slide the KA660 CPU module completely into slot 1 (the right-most slot, see Figure 3-4). Make sure to connect the ejector levers properly.

Figure 3-4: Installing the KA660 CPU Module and Memory Cable (BA123)

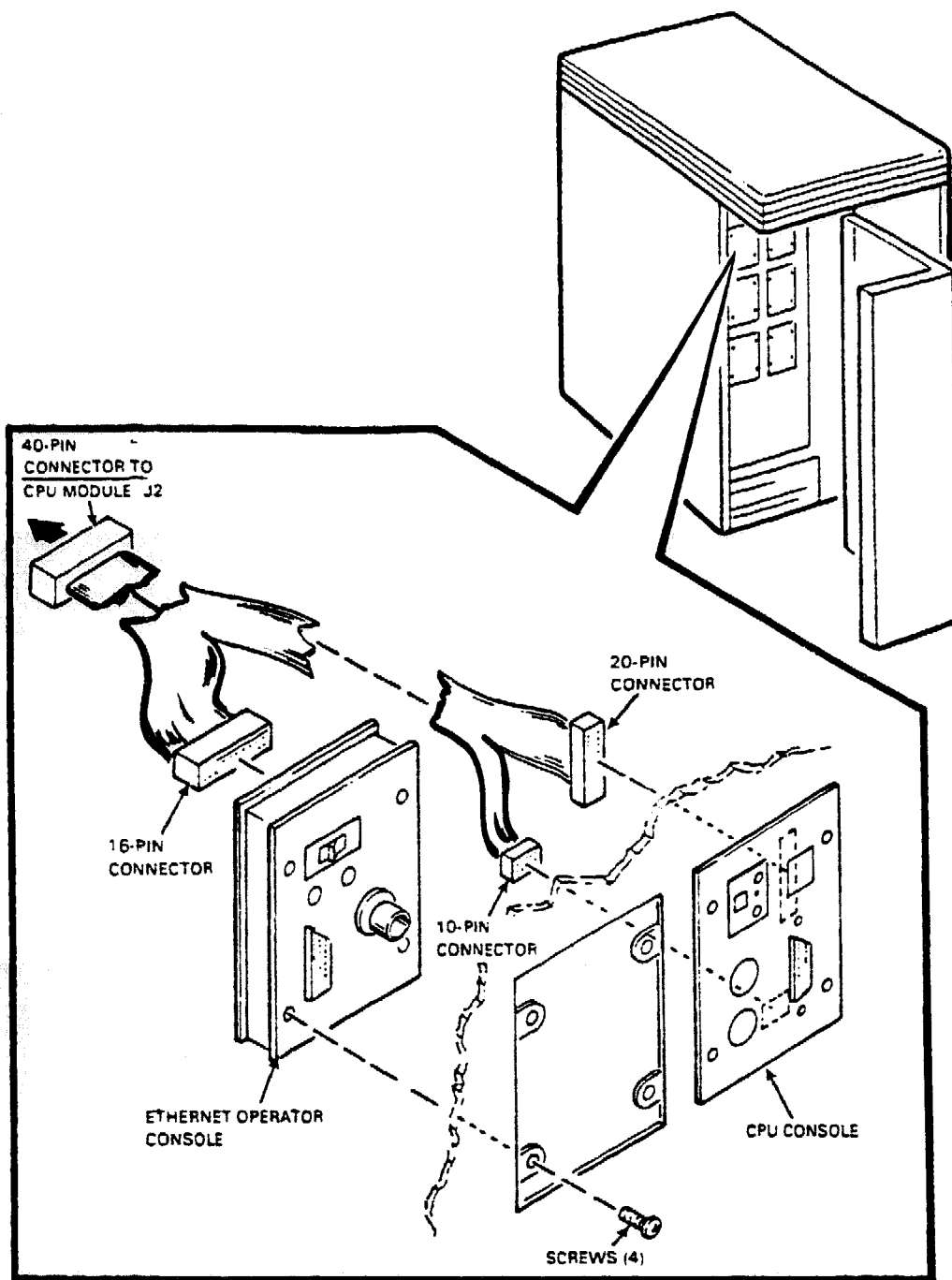


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2. Install the MS650-Bx memory module into slot 2 in the same manner.
3. Connect the KA660 CPU module to the MS650-Bx memory module using the 50-pin cable provided in the upgrade kit.

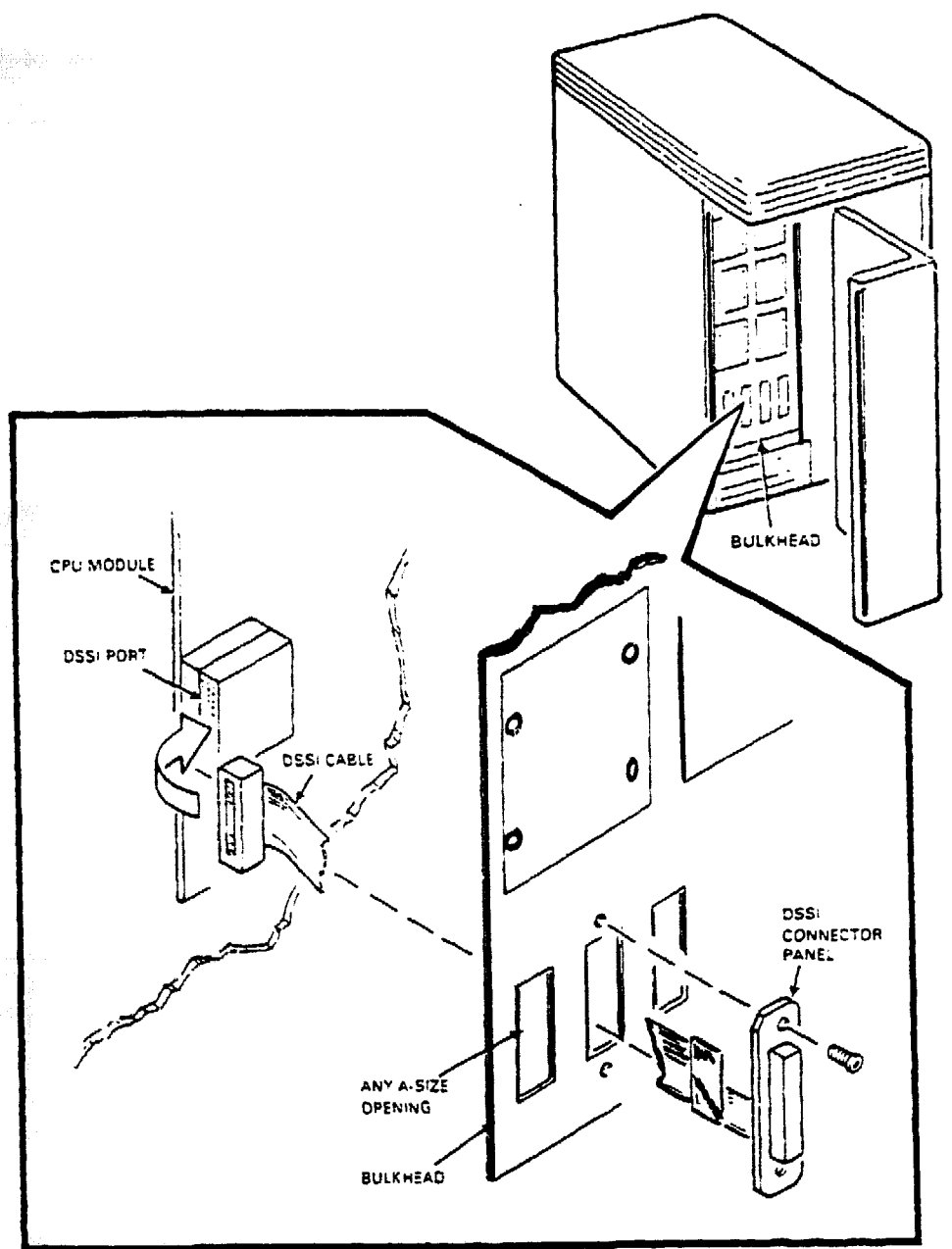
4. Install the Ethernet operator console in the opening adjacent to the CPU console (see Figure 3-5).
5. Connect the Ethernet/Console cable 40-pin connector to the 40-pin connector (J2) on the KA660 CPU (see Figure 3-4 and Figure 3-5).
6. Connect the 16-pin connector of the cable to the Ethernet operator console connector (see Figure 3-5).
7. Connect the 10-pin and 20-pin connectors to the corresponding 10-pin and 20-pin connectors on the CPU console.
8. If the customer wants the added ability to connect external DSSI devices, proceed as follows:
 - a. Locate the 50-conductor DSSI cable in the 2T-KA660 kit and install the DSSI connector panel in an unoccupied A-size bulkhead opening as shown in Figure 3-6.
 - b. Connect the 50-pin connector of the DSSI cable to the DSSI port on the CPU module.
9. Install the card cage door.
10. Install the right side panel.

Figure 3-5: Installing Ethernet Operator Console and Cables (BA123)



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Figure 3-6: Optional DSSI Cable Connection (BA123)



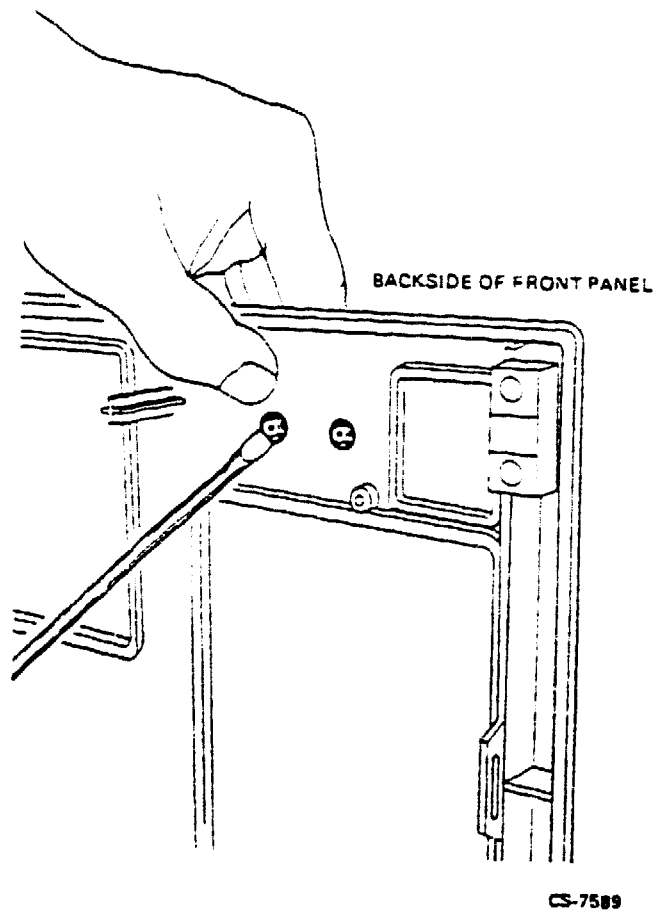
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3.5 Changing the Medallion

To change the medallion, see Figure 3-7 and proceed as follows:

1. Pop off the front cover containing the old medallion.
2. Using a flat-blade screwdriver, pry off the two clips on the back side of the front panel that hold the medallion on the cover.
3. Remove the old medallion.
4. Choose the appropriate new medallion from the upgrade kit and install it as shown in Figure 3-7.
5. Install the front cover.

Figure 3-7: Changing the Medallion (BA123)

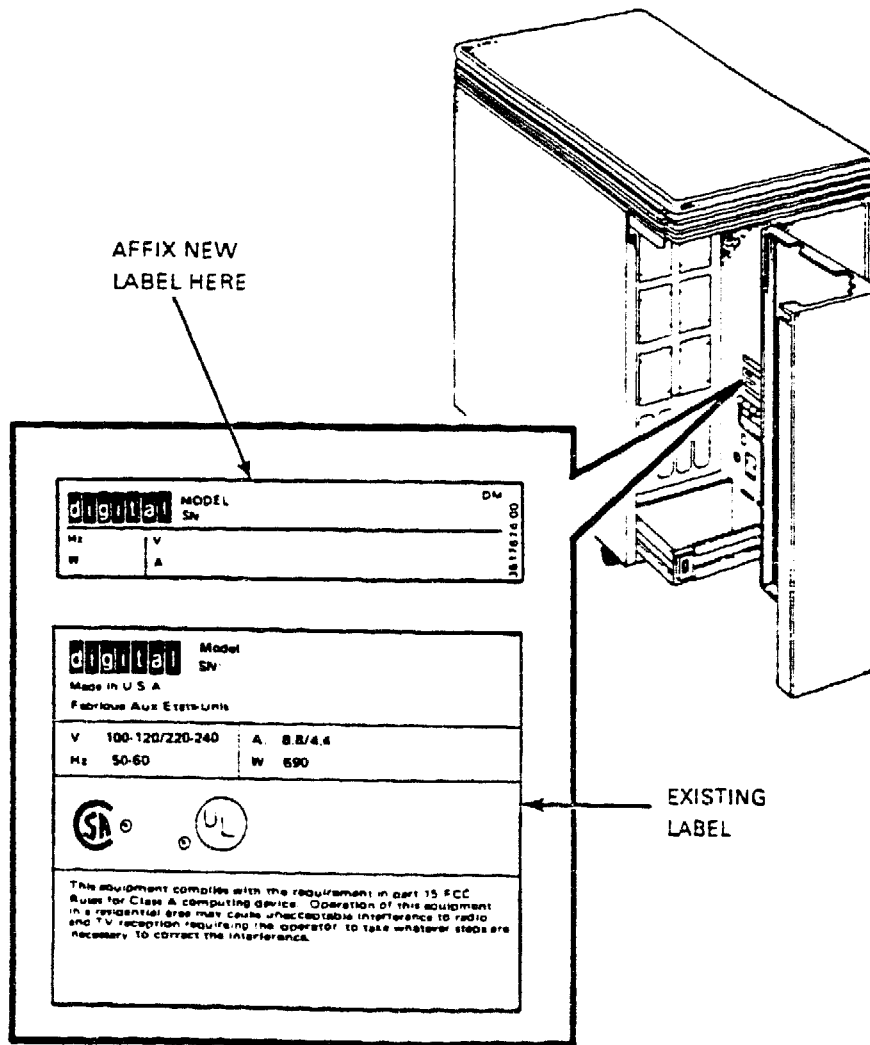


3.6 Installing the New Product Serial Number Label

A new product serial number label must be placed on the system to document the changes made to the system. To do this, refer to Figure 3–8 and proceed as follows:

1. Open the rear door on the unit being upgraded.
2. Locate the serial number label on the unit.
3. Locate the new product serial number label supplied in the upgrade kit.
4. Affix the new product serial number label above the existing serial number label as shown in Figure 3–8.

Figure 3-8: Placing the New Product Serial Number Label (BA123)



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Chapter 4

Upgrading the TQK50 Controller Module

4.1 TQK50 ROM Upgrade Kit Installation Instructions

The following instructions describe how to install the TQK50 Controller Module ROMs provided in the TQK50 ROM upgrade kit, P/N EQ-01494-01. This procedure only applies when upgrading a MicroVAX II to a VAX 4 system.

CAUTION

The TQK50 controller contains electrostatic discharge sensitive devices. The use of the Velostat kit is essential when handling the TQK50 Controller Module and the ROMs/PAL provided in this kit.

1. Remove the interface cable (P1) from the TQK50 Controller Module (M7546).
2. Remove the TQK50 Controller Module from the system.
3. Using Figure 4-1 as a reference for component location, replace the following components with the parts supplied in the TQK50 ROM upgrade kit (P/N EQ-01494-01).
 - a. Check location E3 for P/N 23-065L1-00. If it is not P/N 23-065L1-00, then remove the chip from location E3 and replace it with P/N 23-065L1-00 from the kit. In some modules, component E3 can not be removed because it is soldered in place. In this case, E3 is the correct value and you are not required to change it.
 - b. Remove the chips from location E28 and E29. Replace them with the supplied chips as follows:
 - E28 (high byte ROM) P/N 23-331E5-00
 - E29 (low byte ROM) P/N 23-330E5-00
 - c. Update the module revision with Brady™ markers on the handle as shown in Table 4-1.

™ Brady is a trademark of Brady, Inc.

Table 4-1: Module Revision Chart

Etch Revision	Module Revision	Change to:
D1	C1	J1
D1	D1	J1
D1	E1	J1
D1	F1	J1
C1	F2	J2
D1	H1	K1
C1	H2	K2
E1	H3	K3

4. Reinstall the TQK50 Controller Module and reconnect the interface cable.
5. Replace all covers, panels and doors.
6. Reconnect the power cord. Turn the power on and retest the system using MicroVAX diagnostic monitor (MDM) (release 134 or greater) as described in Chapter 5.

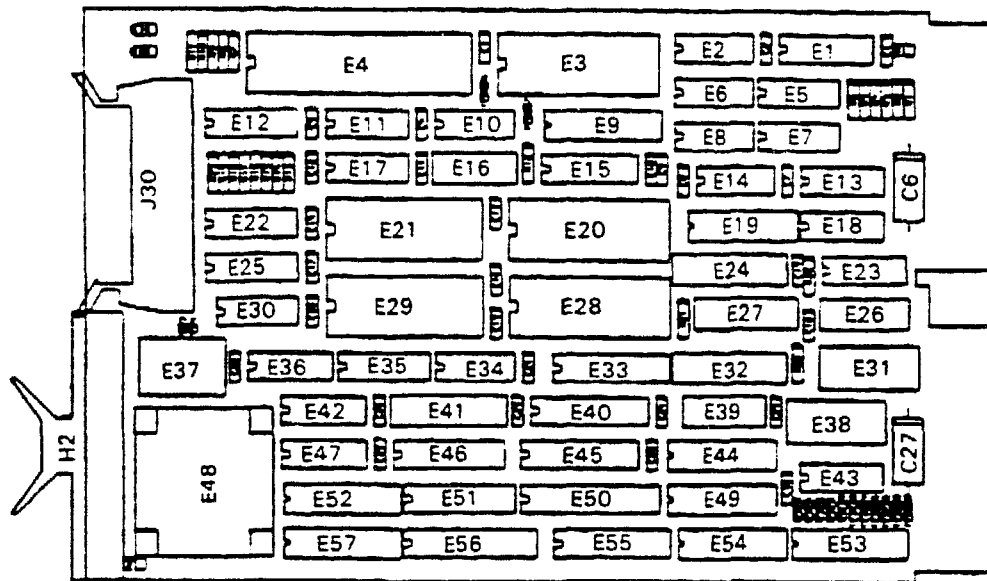
NOTE

**Watch the TK50 tape drive for normal power-up diagnostic completion.
Refer to the *TQK50/TK50 Tape Drive Subsystem Manual*.**

TQK50 ROM upgrade kit: EQ-01494-01
Box part number: 99-005812-00
High byte ROM (E28) 23-331E5-00
Low byte (E29): 23-330E5-00
FPLS chip: 23-065L1-00

Brady marker part numbers:
1—36-19208-01
2—36-19208-02
3—36-19208-03
J—36-19209-10
K—36-19209-11

Figure 4–1: Component Location on TQK50 Controller Module



CS-7591

Chapter 5

Testing the New Configuration

This chapter outlines the tests and procedures you should use to complete the installation.

5.1 Testing the System

After the system successfully completes the power-up self-test (refer to the applicable Systems Maintenance Guide for more detailed information), use MicroVAX diagnostic monitor (MDM) (release 134 or greater), to test the complete system. The MDM software provides the following five groups of menu-driven tests.

- Verify-mode functional tests - user or Customer Service
 - Verify-mode exerciser tests - user or Customer Service
 - Service-mode functional tests - Customer Service
 - Service-mode exerciser tests - Customer Service
 - Utility tests - Customer Service
1. Plug the ac power cord into the wall outlet and turn the I/O Power Switch on (|).
 2. Insert the MDM tape cartridge into the TK50 or TK70 tape drive.
 3. Boot the MDM media by typing **BOOT MUA0**.
 4. Type **2** at the main menu to allow the diagnostics to identify the new controller modules and add them to the configuration file.
 5. Run the verify-mode functional tests and exerciser tests.

These tests should complete without error. If an error occurs, consult the Systems Maintenance Guide for troubleshooting procedures.

5.2 Completing the Installation

1. After the testing has completed successfully, replace any existing covers you may have removed to gain access to the back plane or mass storage area.
2. Bring up the operating system software. The hardware installation procedure is now complete.

5.3 Functionality Changes

Halt Enable/Disable switch: Like the KA630 CPU, the KA660 CPU autoboots if the Halt Enable/Disable switch on the CPU panel is set to disable. However, this switch does not affect the operation of the Halt switch on the front panel as it did with the KA630 CPU.

Restart Button: The Restart button on the front panel does not restart the system at the power-up stage as it did with the KA630 CPU. Pressing the Restart button with the KA660 CPU now restarts the system at the boot stage and power-up tests are not run.

5.4 Halt Switch

The Halt switch provides the same behavior as the MicroVAX II with the following exceptions:

- The Halt Enable/Disable switch on the rear panel will not affect the operation of the front panel Halt switch on BA23 and BA123 enclosures (because the BHALT enable bit must be left set to recognize the negation of DCOK.)

In essence, this switch has become a Break Enable/Disable switch. The setting of this switch will still determine the action to be taken on power-up after self-test is completed. If the switch is enabled it is in halt mode, if it is disabled, the switch is in boot mode.

- If the system is running, pressing the Restart button or negating DCOK by some other means will cause the firmware to reboot rather than power-up.
- The front panel Halt switch will behave in the same manner on KA660 CPU based systems as it currently does on the VAXstation II/GPX. The system "hangs" when the Halt switch is pressed, and the system doesn't halt until it is released.

[illegible]

XXXXXX
XXXXXX
XXXXXX

APP

XXXXXX

A large, stylized number 4 made of dark, textured fabric, possibly jeans, set against a white background. The number is composed of several pieces of fabric, with visible stitching and a slightly worn, denim-like texture. The top horizontal bar of the 4 is made of a different piece of fabric, possibly a lighter shade of blue or a different texture, and is attached to the main body of the number. The overall shape is a bold, blocky 4, tilted slightly to the right.

[illegible]

Appendix A

Upgrade and Return Forms

The Customer Service Engineer who performs the upgrade must complete and return each of the three forms contained in this appendix.

Return the Customer Service Worksheet to the local contacts administrator.

Return one copy of the Customer Service Installation Receipt to the local CAS group and one copy to the customer.

Return one copy of the Returns Material Checklist with each module and item that you return.

Call your local CAS office to obtain the Return Authorization Number and the address for returning the modules and items.

Call the Sales Support Hot Line (1-800-832-6277) if you need help.

The memory and CPU modules to be returned are dependent on the upgrade and may be:

- M7606, KA630 or KA650 or KA655 CPU Module
- M7608, or M7609, MS630, MS650-AA Memory Modules

All labor activity associated with this upgrade must be charged in the following manner:

- System type: 660TU for VAX4
- Activity code: I
- Type of call: I
- Action taken: D
- P/L segment code: 001

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CUSTOMER SERVICE UPGRADE WORKSHEET

This form acts as a verification of the work performed on the system and as a check on the procedures used. It can also be used for repricing the customer's service contract. Return this form to your local contracts administration office for processing.

CUSTOMER: _____

OLD SYSTEM TYPE: _____ NEW SYSTEM TYPE: _____

SERIAL NUMBER: _____ SERIAL NUMBER: _____

MODULES/OPTIONS REMOVED:

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

10 _____

MODULES/OPTIONS REPLACED:

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

10 _____

CS-8536

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CUSTOMER SERVICE INSTALLATION RECEIPT

This document acts as a customer receipt and as verification for Customer Service that the upgrade kit installation has been completed.

CUSTOMER SERVICE: Complete both copies of this form and give a copy to the customer and a copy to local CAS for filing with the customer documents.

CUSTOMER: Digital will contact you within the next few days. Keep this copy as your record of installation by Digital.

RETURN AUTHORIZATION
NUMBER: _____

NAME OF CAS CONTACT: _____

CUSTOMER SERVICE CONTACT: _____

CUSTOMER SERVICE PHONE
NUMBER: _____

CUSTOMER DEC NUMBER: _____

CUSTOMER CONTACT: _____

CUSTOMER ADDRESS: _____

CUSTOMER PHONE
NUMBER: _____

SYSTEM UPGRADED: MicroVAX II _____ MicroVAX 3 _____ MicroVAX 3+ _____
(check one) VAXstation II/GPX _____ VAXstation 3 _____ VAXstation 3+ _____

DATE INSTALLATION PERFORMED: _____

MODULES PACKAGED FOR RETURN: (fill in appropriate lines)

MODULE/OPTION

SERIAL NUMBER

1 _____

2 _____

3 _____

4 _____

5 _____

(Customer Signature)

(Customer Service Signature)

CS-8650

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RETURNS MATERIAL CHECKLIST

This form must be filled out and returned with the old modules(s) in order to clear the customer's account.

MODULES BEING RETURNED: _____

DATE MODULE PACKAGED: _____

RETURN AUTHORIZATION
NUMBER: _____

CUSTOMER DEC NUMBER: _____

CUSTOMER (COMPANY) NAME: _____

CUSTOMER ADDRESS: _____

CUSTOMER CONTACT: _____

CUSTOMER TELEPHONE
NUMBER: _____

Include This Form With Each Module/Option Returned

CS-8537

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MODULE RETURN PROCEDURE

1. Package modules in existing module packaging.
2. Seal shipping box with packaging tape and cover all previous shipping information.
3. Contact your local CAS representative for return information. That person will need the Digital order number and customer name and will give you a return authorization (RA) number.
4. Write the RA number on the return-address label, in the lower lefthand corner. Make sure the number is legible. (If a label is not available, return the module to the address shown below. Be sure to include the RA number.)
5. Advise the customer that the customer will be billed for the Modules if they are not returned to Digital. Then make sure the container is sent to the customer's shipping area for pickup.
6. If there are any questions, the customer should contact the appropriate sales representative.

Ship To:

Digital Equipment Corporation
Attention: Returns Sort Center
Route 127
Dock Area D001
Contoocook, NH 03229-9210

RA# _____

DEC# _____

Package # _____ of _____

CS-8825