

**VAXstation 3100 Upgrade  
Installation Guide  
Models 30 to 38  
Models 40 to 48**

Order Number EK-345AA-IN-002

**digital equipment corporation  
maynard, massachusetts**

**Second Edition, January 1990**

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DECwriter	RSX	

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## About This Guide

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This installation guide describes how to install the upgrade options that are available for the VAXstation 3100 systems. The upgrade is available on both the model 30 and model 40 VAXstation 3100 systems. The VAXstation system becomes a VAXstation 3100 system models 38 and 48 once the upgrade is complete.

### Organization

There are four upgrade kits available. Each chapter describes how to install one of the four kits.

---

<b>Chapter</b>	<b>Upgrade From</b>	<b>To</b>
1	A diskless VAXstation 3100 model 30 system	A diskless VAXstation 3100 model 38 system
2	A VAXstation 3100 model 30 system without a diskette drive	A VAXstation 3100 model 38 system without a diskette drive. This system may or may not contain a TZ30 tape drive.
3	A VAXstation 3100 model 30 system with a diskette drive	A VAXstation 3100 model 38 system with a diskette drive
4	A VAXstation 3100 model 40 system	A VAXstation 3100 model 48 system

---

### Intended Audience

This document is only for Digital Customer Services personnel.

## Tools and Equipment

You need the following tools to service the VAXstation 3100 systems:

<b>Tools and Equipment</b>	<b>Part Number</b>
Wrist strap and antistatic mat (included in Field Service antistatic kit)	29-26246-00

## Related Documents

You can order the following documents from Digital:

**Table 1 Related Documents**

<b>Documents</b>	<b>Order Number</b>
VAXstation 3100 Maintenance Guide	EK-285AA-MG
VAXstation 3100 Maintenance Guide Addendum Models 38 & 48	EK-344AA-AD
VAXstation 3100 Model 40 Customer Information Kit	EK-VS310-IL
Managing your VAXstation 3100 Model 30 Standalone	EK-260AA-OM
VAXstation 3100 Hardware Information Model 30	EK-265AA-OM
VAXstation 3100 Hardware Information Model 40	EK-266AA-OM
Using your VAXstation 3100 Model 30 Satellite	EK-259AA-UG
VAXstation 2000, MicroVAX 2000, VAXmate Network Guide	EK-NETAB-UG

Digital personnel may order the documents shown in Table 1 from:

Digital Equipment Corporation  
444 Whitney Street  
Northboro, MA 01532

Attn: Publishing and Circulation Services (NRO3/W3)  
Order Processing Section

## Conventions

This document uses the following conventions:

<b>Convention</b>	<b>Meaning</b>
Note	Provides general information
Caution	Provides information to prevent damage to the equipment
PN	Part number



# 1

## Upgrading a Diskless Model 30

---

This chapter contains installation procedures for upgrading a diskless VAXstation 3100 model 30 system to a diskless VAXstation 3100 model 38 system.

### 1.1 PV11U-AA Kit Contents

The following table lists the contents and part numbers of the PV11U-AA kit:

---

<b>Kit Item</b>	<b>Part Number</b>
Bezel insert for FCC shielding	74-37499-02
KA42-BA system module	54-19356-01
Owners manual, network guide, site planning guide	EK-VSM30-DK
VAXstation 3100 Upgrade Installation Guide	EK-345AA-IN
Upgrade label	36-15946-01
Power supply caution label	36-20124-01
Medallion, VAXstation 3100 M 38	
Three power supply safety screws*	12-30934-01

---

\*One screw is extra.

---

## 2 Upgrading a Diskless Model 30

### 1.2 Preparing the System for Installation

To prepare the system for installation:

#### Shut Down the System

1. Shut down the system software.
2. Run a self-test to verify the operation of the present configuration.

```
>>> TEST F 1
```

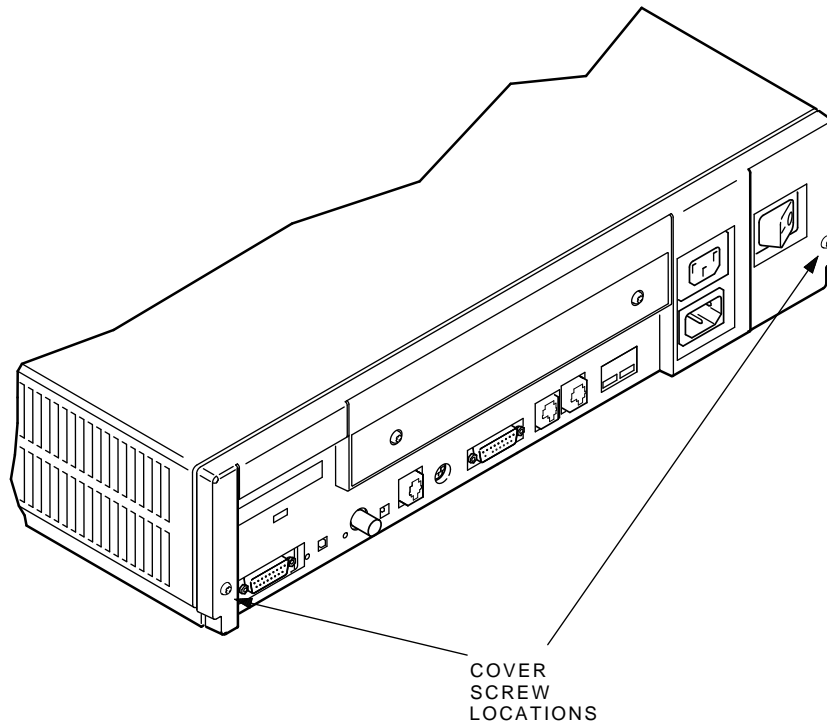
3. Turn the system power switch off.

#### Open the System Box

##### **CAUTION**

**Wear a static wrist strap and use a static mat (PN 29-26242-00) when replacing FRUs.**

1. Unscrew the two cover screws.



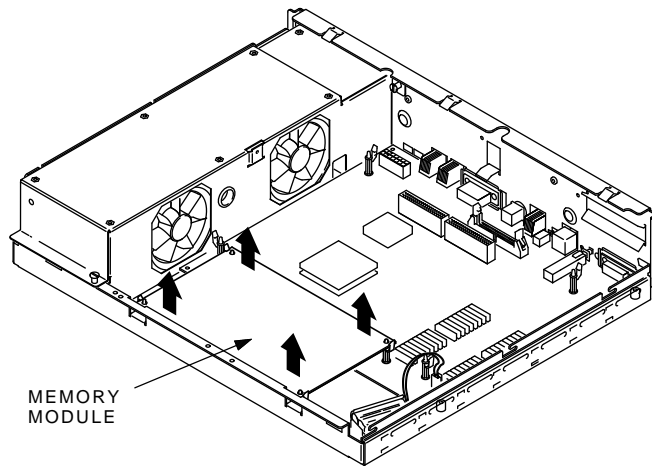
MA-X0796-88

2. Slide the cover forward and up off the system box.

#### 4 Upgrading a Diskless Model 30

##### Remove the Memory Module

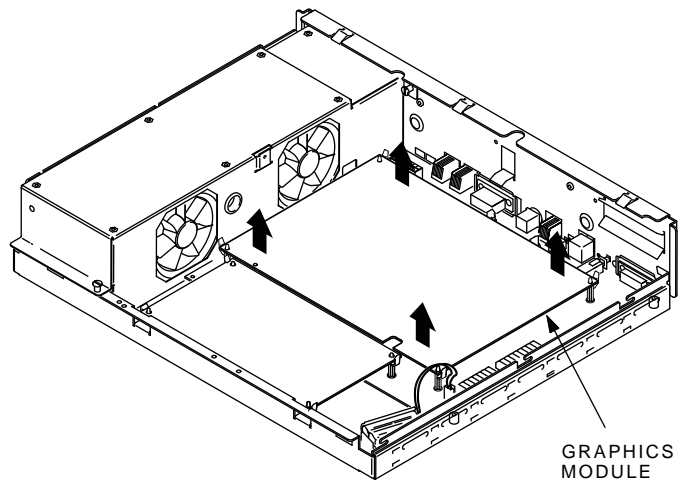
Remove the memory module from the four standoffs, then lift the memory module off the system module. Two connectors will disconnect as you lift the module.



MA-X0804-88

### Remove the Graphic Module (if present)

Remove the graphic module from the four standoffs, then lift the graphic module off the system module. Two connectors will disconnect as you lift the module.



MA-X0803-88

### Remove the System Module

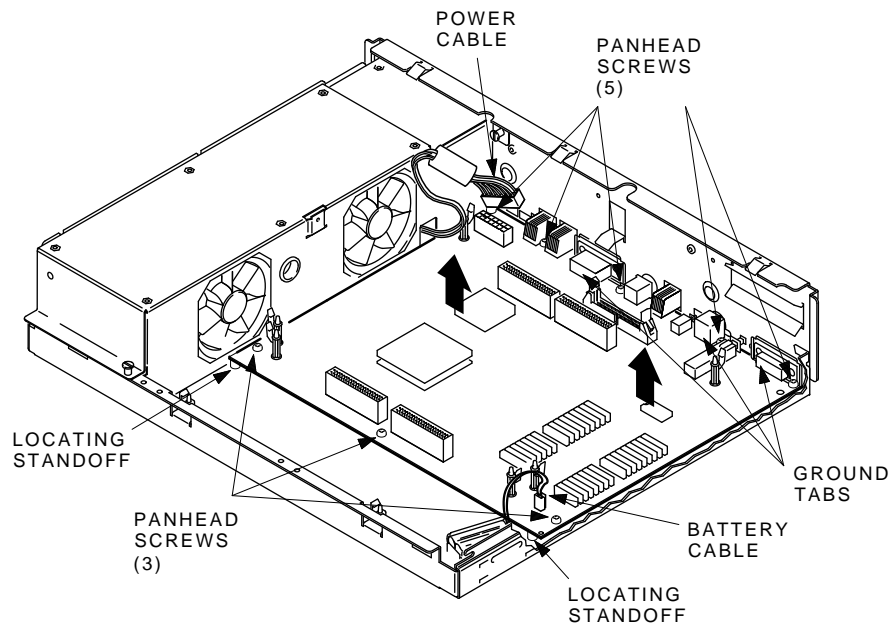
1. Disconnect all cables from the back of the system box.

6 Upgrading a Diskless Model 30

**NOTE**

**Before disconnecting the power cable in the next step, be sure to release the connector latch on the back side of the power connector.**

2. Disconnect the power cable and the battery cable from the system module.



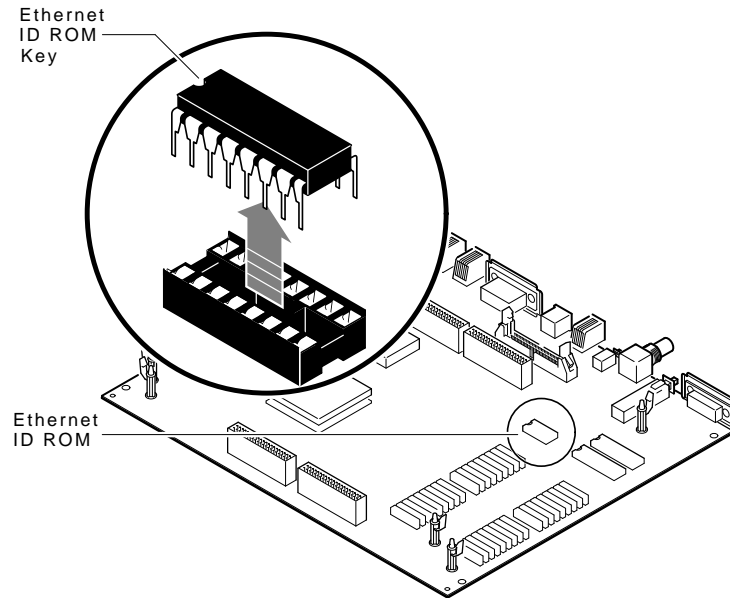
MA-X0805-88

3. Remove the eight screws from the system module.
4. Remove the system module by carefully popping off the two front corners of the two locating standoffs.

**CAUTION**

**In the next step, you will swap the Ethernet ID ROMs on both the new system module and the old system module that you just removed. Be careful not to bend the pins on the ROM or not to mix up the ROM that goes on each system module.**

5. Remove the Ethernet ID ROM from the system module you just removed. Set the ROM aside.



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MA-X0872-89

6. Remove the Ethernet ID ROM from the new system module in the kit and reinstall it on the old system module.
7. Take the ID ROM that you just removed from the old system module and install it on the new system module.

### 1.3 Installing the Modules

To install the modules:

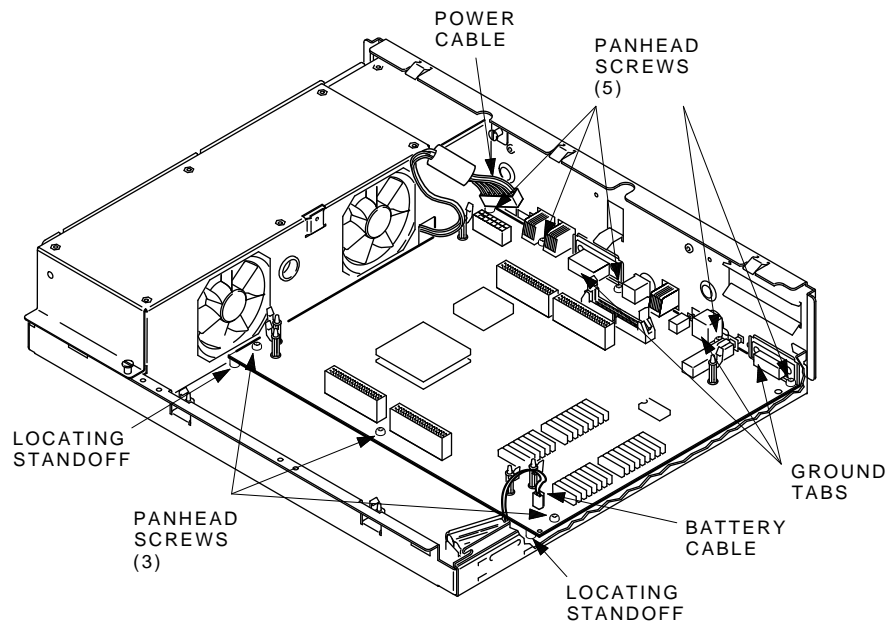
#### Install the New System Module

##### NOTE

**When installing the new system module, install the connector end first through the openings in the rear of the box. Push the module back to load the connector ground tabs. Snap the module on both locating standoffs. All screw holes will then be aligned.**

## 8 Upgrading a Diskless Model 30

1. Check the position of the S3 switch next to the LEDs on the back of the system module. Be sure S3 is in the down position. The down position enables the monitor to be the console, and the up position enables a terminal connected to the printer port to be the console.
2. Install the connector end of the system module through the openings in the rear of the box. Push the module back to load the connector ground tabs, then snap the module on both locating standoffs. All screw holes will then be aligned.
3. Install the eight screws on the system module.



MA-X0805-88A

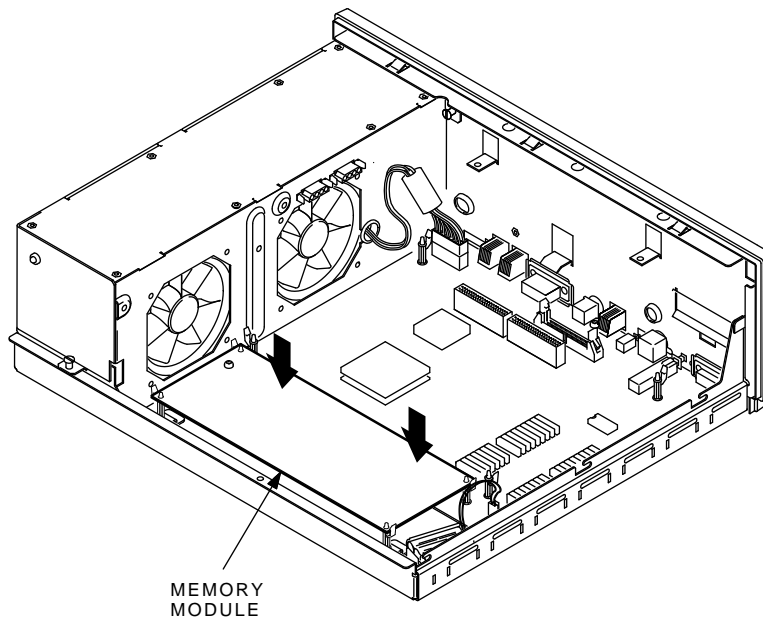
4. Connect the power cable and the battery cable to the system module.
5. Reconnect all cables to the back of the system box.



### Reinstall the Memory Module

Install the memory module(s) on the new system module as shown in the following two figures. The first figure is for 4 or 12 Mbyte (single) memory module; the second figure is for 8 or 16 Mbyte (dual) memory module. After the module(s) are installed, press down on top of the module's connectors to firmly seat the connectors.

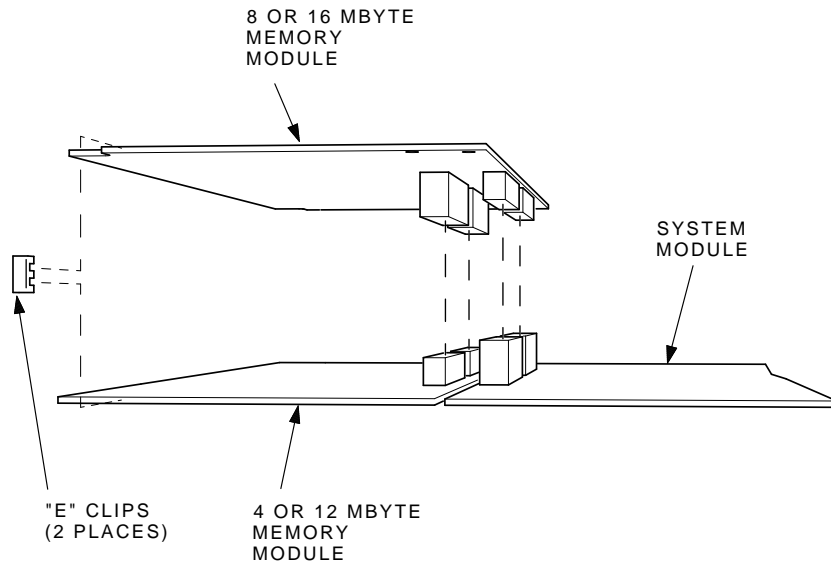
#### 4 or 12 Mbyte (single) Memory Module Installation



MA-X0848-88A

10 Upgrading a Diskless Model 30

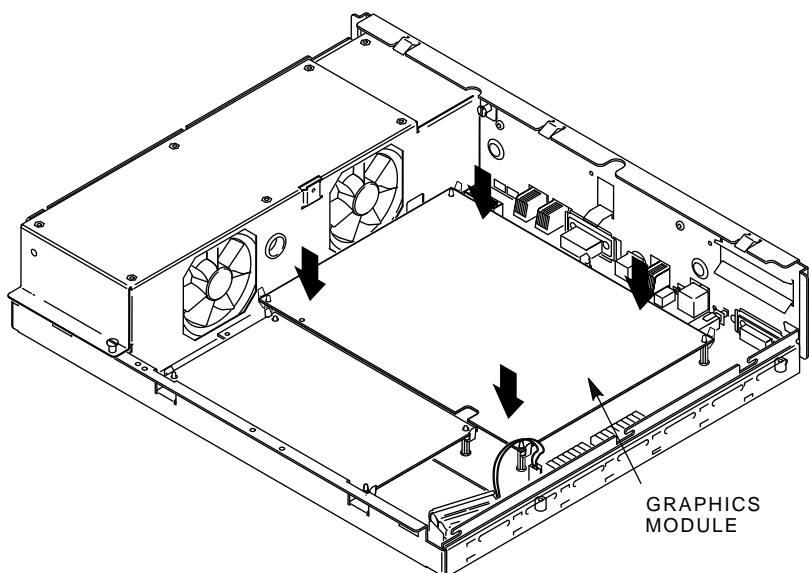
**8 or 16 Mbyte (dual) Memory Module Installation**



MA-X1174-88A

**Reinstall the Graphic Module (if present)**

Reinstall the graphics module on the new system module. After the module is installed, press down on top of the module's connectors to firmly seat the connectors.



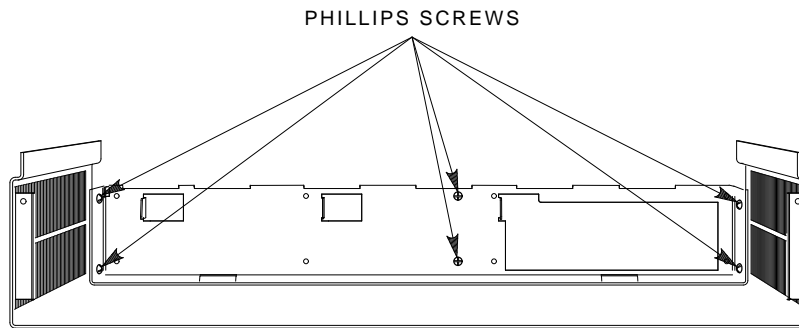
MA-X0803-88A



## 1.5 Installing the New Bezel Insert

To install the new bezel insert:

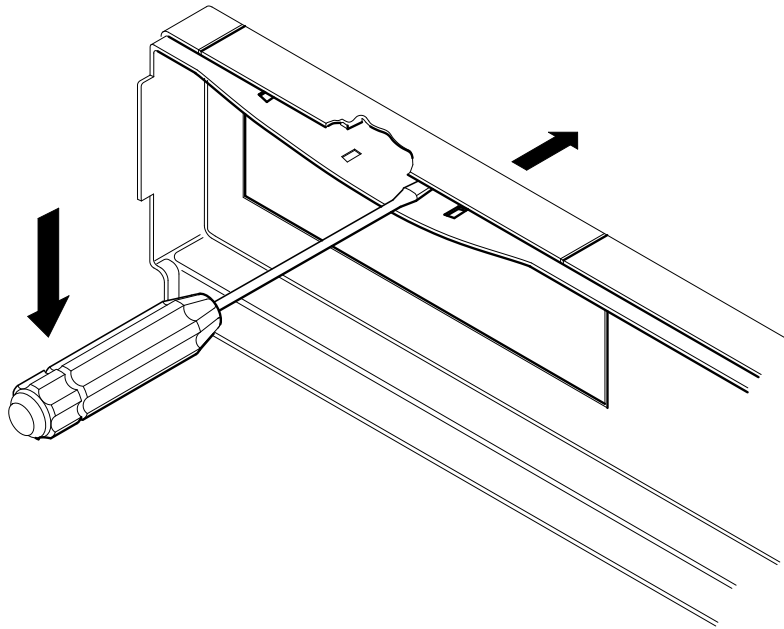
1. Remove the six screws on the cover of the system box, and remove the front bezel from the cover.



MA-X0517-89

14 Upgrading a Diskless Model 30

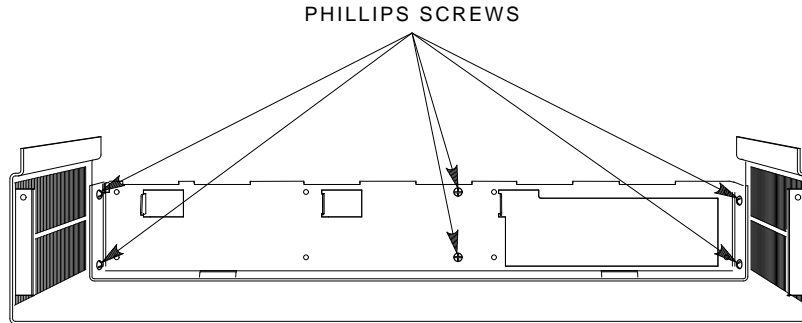
2. Separate the bezel insert from the front bezel.



MA-X0518-89

3. Install the new bezel insert from the kit on the front bezel by reversing steps 1 and 2.
4. Remove the VAXstation 3100 medallion from the system box cover.
5. Install the new VAXstation 3100 M 38 medallion from the kit in the cover.

6. Reinstall the front bezel on the cover, then reinstall the six screws.



MA-X0517-89

## 1.6 Installing the Upgrade Label

Install the upgrade label from the kit beside the original label on the back of the system box.

## 1.7 Reinstalling the System Box Cover

To reinstall the system box cover:

1. Install the system box cover and tighten the two cover screws.
2. Refer to Chapter 1 of the maintenance guide. Run a self-test and the system exerciser to verify the status of the new system module.

## 1.8 Completing the Installation

The VAXstation 3100 replaced components as well as the excess materials (if any) from the upgrade kit are the property of Digital. You and the customer will need to fill out the upgrade forms in Appendix A and return them to the appropriate locations, as described in Appendix A.

# 2

## Upgrading a Model 30 (No Diskette)

---

This chapter contains installation procedures for upgrading a VAXstation 3100 model 30 system without a diskette drive to a VAXstation 3100 model 38 system without a diskette drive.

### 2.1 PV11U-CA Kit Contents

The following table lists the contents and part numbers of the PV11U-CA kit:

<b>Kit Item</b>	<b>Part Number</b>
KA42-BA system module	54-19356-01
Owners manual, network guide, site planning	EK-VSM30-DK
VAXstation 3100 Upgrade Installation Guide	EK-345AA-IN
Upgrade label	36-15946-01
Power supply caution label	36-20124-01
Medallion, VAXstation 3100 M 38	
Three power supply safety screws (one screw is extra)	12-30934-01
Drive plate, MSC module, 4 cables	70-26723-01
Thirteen screw/grommets (6-32) (RZ22/RZ23 mounting screws/grommets, four per drive)	12-31734-01
<b>Only Used if a TZ30 Tape Drive is Installed:</b>	
Five screw/grommets* (metric M3)	12-31734-02
Bezel insert for the TZ30 tape drive	74-37501-01
TZ30 plate	74-39199-01

---

\*TZ30 mounting screws/grommets, one screw is extra.



<b>Kit Item</b>	<b>Part Number</b>
Two TZ30 plate mounting screws	90-09984-07

## 2.2 Preparing the System for Installation

To prepare the system for installation:

### Shut Down the System

1. Shut down the system software.
2. Run a self-test to verify the operation of the present configuration.

```
>>> TEST F 1
```

3. Turn the system power switch off.

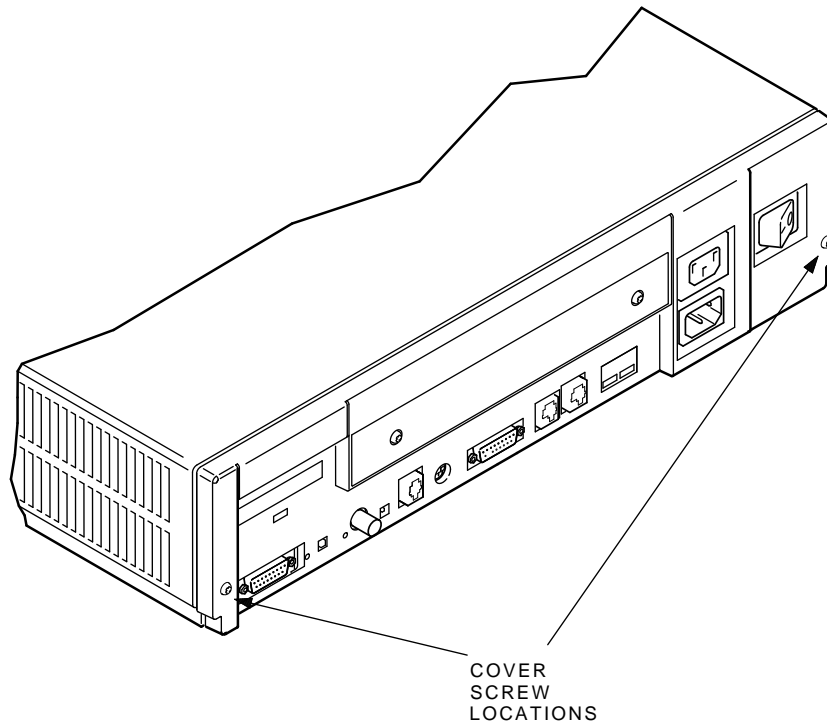
### Open the System Box

#### **CAUTION**

**Wear a static wrist strap and use a static mat (PN 29-26242-00) when replacing FRUs.**

18 Upgrading a Model 30 (No Diskette)

1. Unscrew the two cover screws.

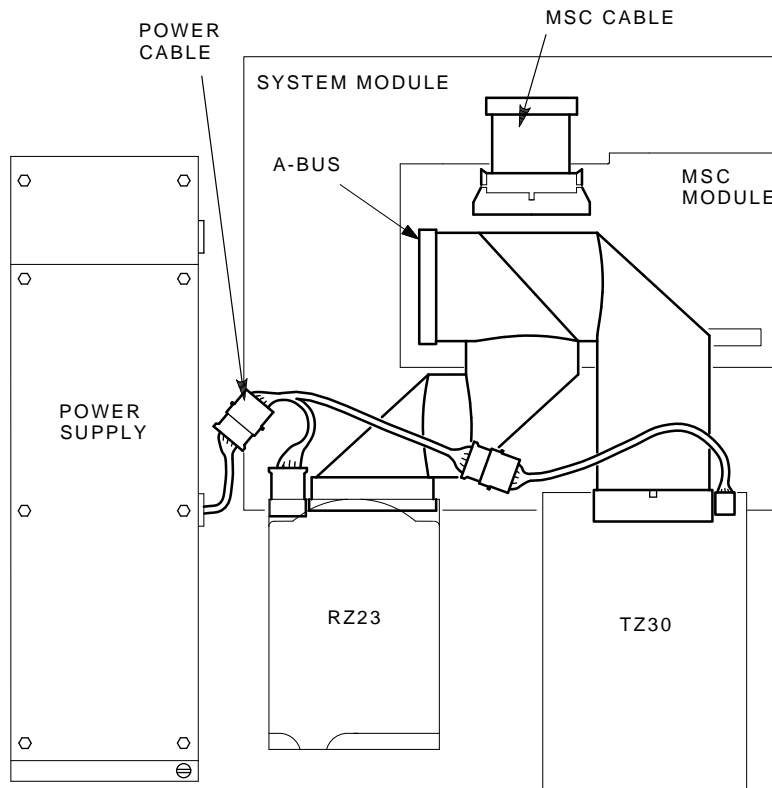


MA-X0796-88

2. Slide the cover forward and up off the system box.

### Remove the Drive Mounting Plate

1. Disconnect the power cable from the power supply and disconnect the cable on the mass storage controller (MSC) module that goes to the system module.

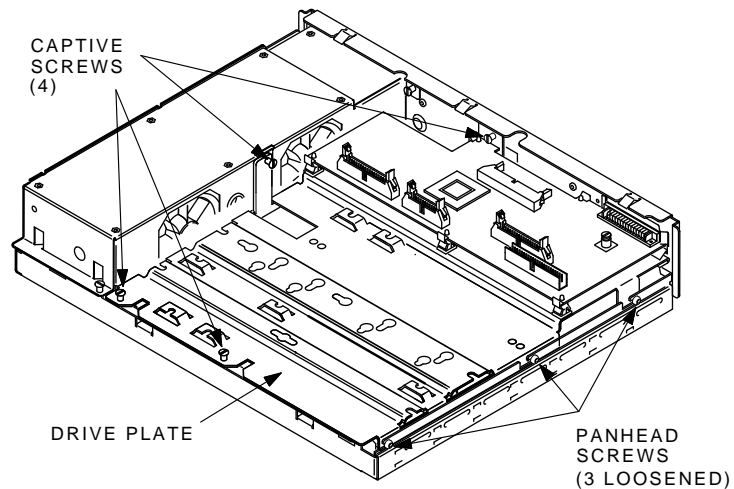


MA-X1172-88

2. Disconnect the external SCSI cable or the terminator from the SCSI port.

20 Upgrading a Model 30 (No Diskette)

3. Unscrew the four captive screws, loosen the three panhead screws, and remove the drive mounting plate.



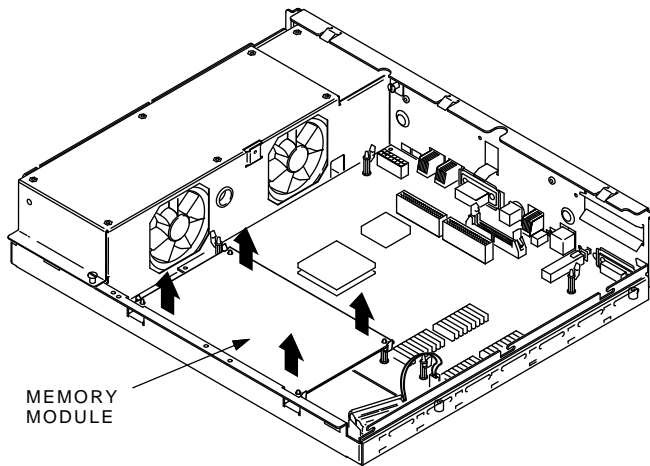
MA-X0527-89A

**Remove the Drives from the Drive Plate**

1. Disconnect all cables from all drives on the old drive mounting plate and set them aside. They will **not** be reused.
2. Remove all drives from the old drive mounting plate. The mounting screws and their grommets will **not** be reused.

### Remove the Memory Module

Remove the memory module from the four standoffs, then lift the memory module off the system module. Two connectors will disconnect as you lift the module.

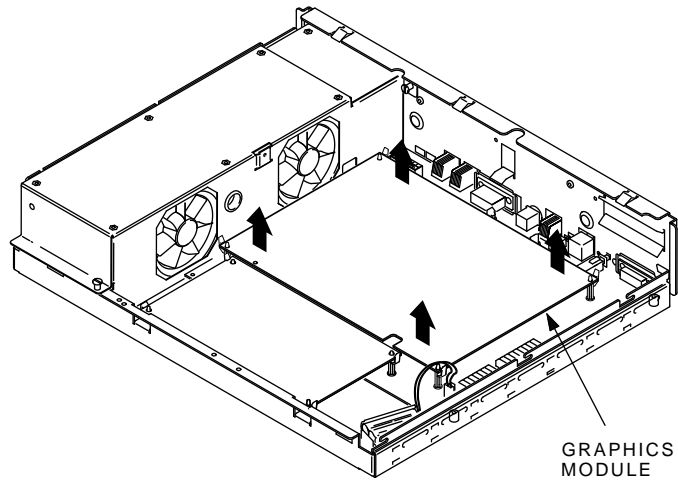


MA-X0804-88

22 Upgrading a Model 30 (No Diskette)

**Remove the Graphic Module (if present)**

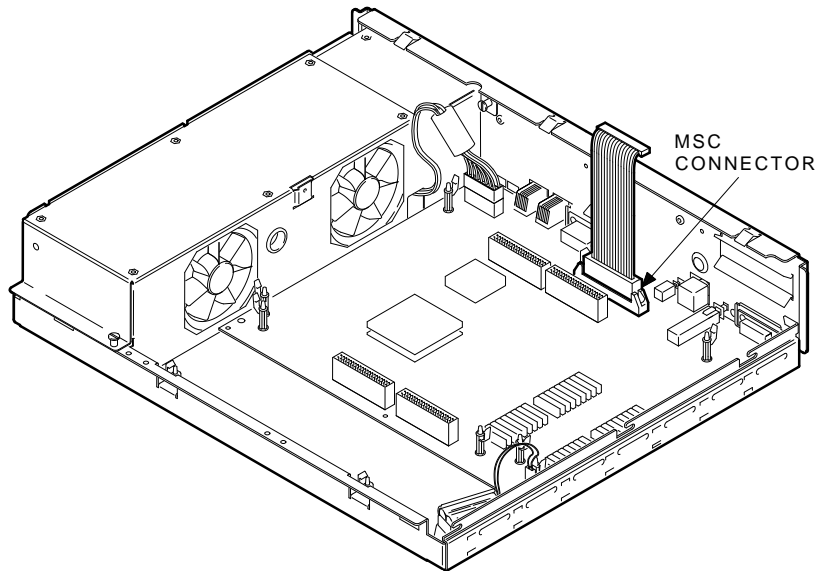
Remove the graphic module from the four standoffs, then lift the graphic module off the system module. Two connectors will disconnect as you lift the module.



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### Remove the System Module

1. Disconnect all cables from the back of the system box.
2. Disconnect the MSC cable from the system module.



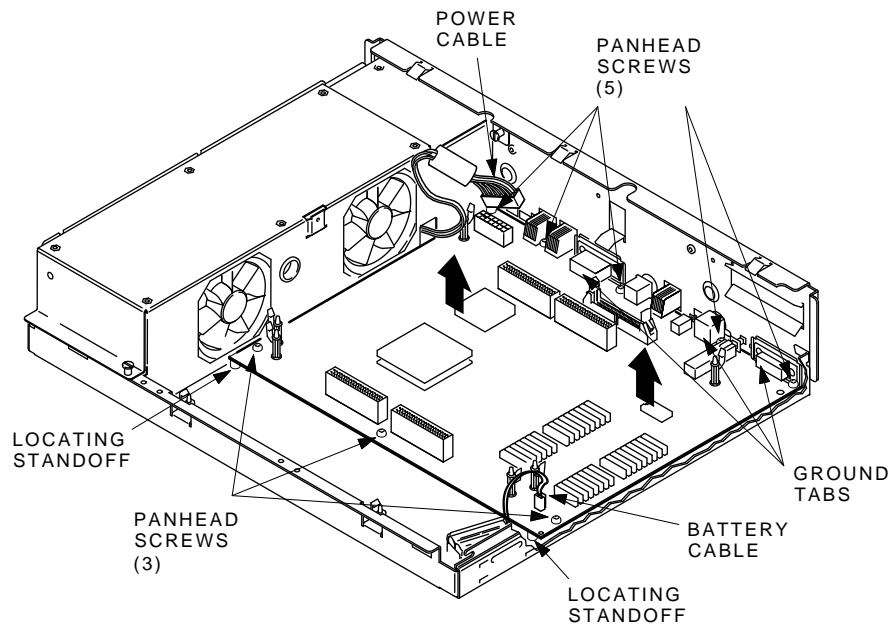
MA-X0514-89

24 Upgrading a Model 30 (No Diskette)

**NOTE**

**Before disconnecting the power cable in the next step, be sure to release the connector latch on the back side of the power connector.**

3. Disconnect the power cable and the battery cable from the system module.



MA-X0805-88

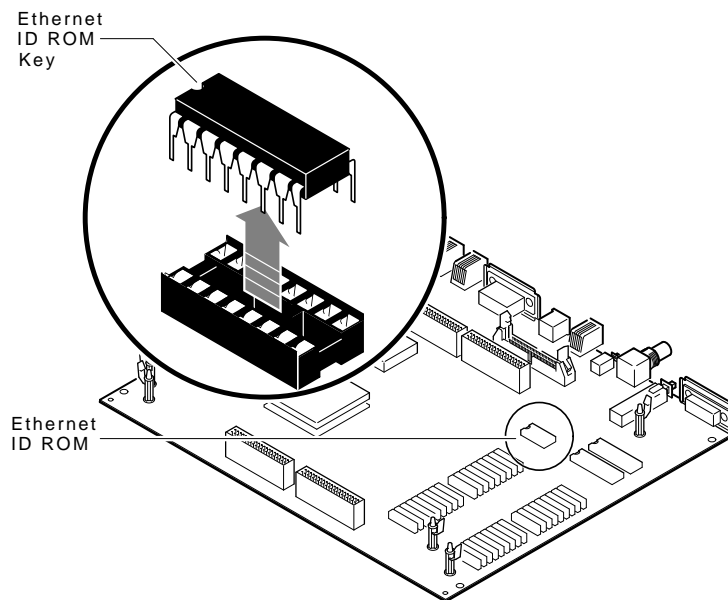
4. Remove the eight screws from the system module.
5. Remove the system module by carefully popping off the two front corners of the two locating standoffs.

**CAUTION**

**In the next step, you will swap the Ethernet ID ROMs on both the new system module and the old system module that you just removed. Be careful not to bend the pins on the ROM or not to mix up the ROM that goes on each system module.**



6. Remove the Ethernet ID ROM from the system module you just removed. Set the ROM aside.



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7. Remove the Ethernet ID ROM from the new system module in the kit and reinstall it on the old system module.
8. Take the ID ROM that you just removed from the old system module and install it on the new system module.

## 2.3 Installing the Modules

To install the modules:

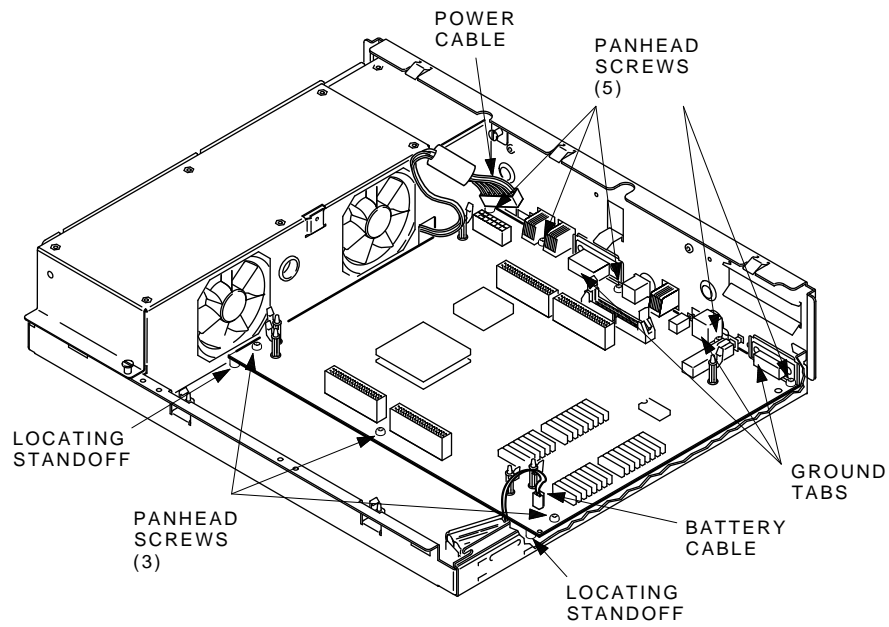
### Install the New System Module

#### NOTE

**When installing the new system module, install the connector end first through the openings in the rear of the box. Push the module back to load the connector ground tabs. Snap the module on both locating standoffs. All screw holes will then be aligned.**

1. Check the position of the S3 switch next to the LEDs on the back of the system module. Be sure S3 is in the down position. The down position enables the monitor to be the console, and the up position enables a terminal connected to the printer port to be the console.
2. Install the connector end of the system module first through the openings in the rear of the box. Push the module back to load the connector ground tabs, then snap the module on both locating standoffs. All screw holes will then be aligned.

3. Install the eight screws on the system module.



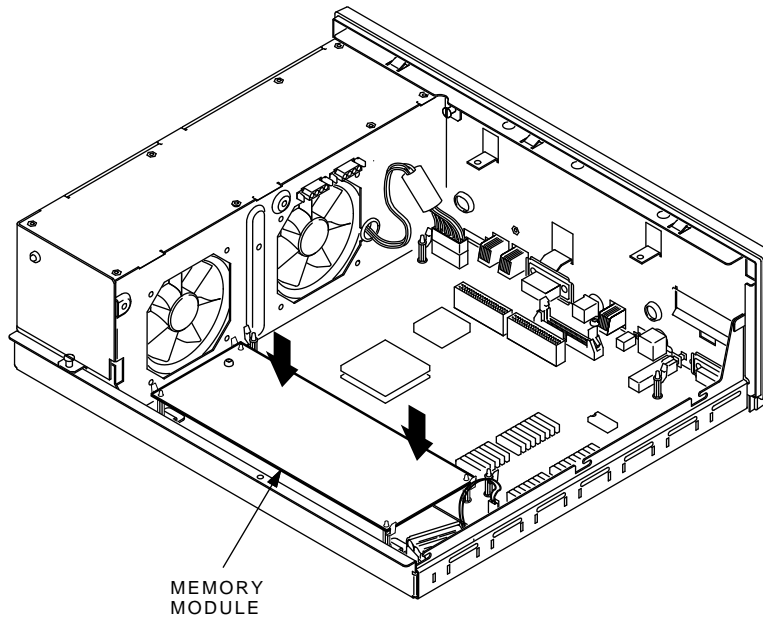
MA-X0805-88A

4. Connect the power cable and the battery cable to the system module.
5. Reconnect all cables to the back of the system box.

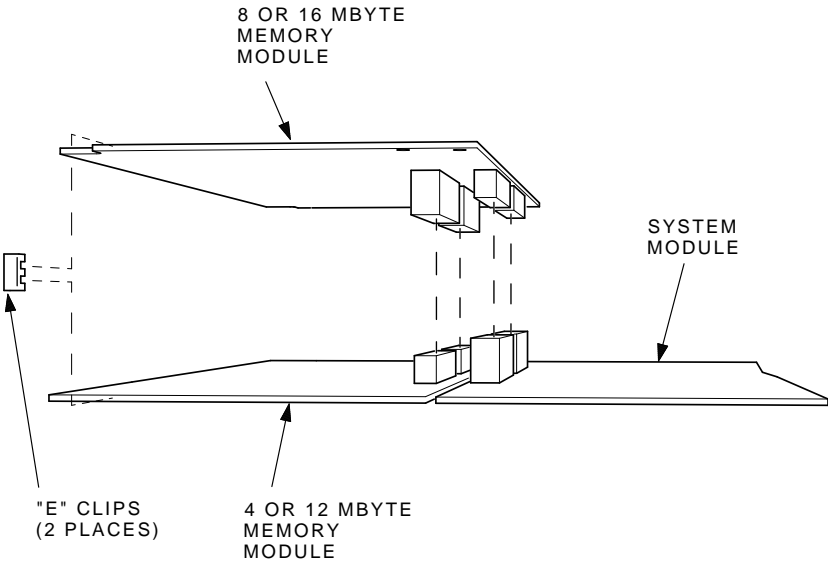
### Reinstall the Memory Module

Install the memory module(s) on the new system module as shown in the following two figures. The first figure is for 4 or 12 Mbyte (single) memory module; the second figure is for 8 or 16 Mbyte (dual) memory module. After the module(s) are installed, press down on top of the module's connectors to firmly seat the connectors.

#### 4 or 12 Mbyte (single) Memory Module Installation



**8 or 16 Mbyte (dual) Memory Module Installation**

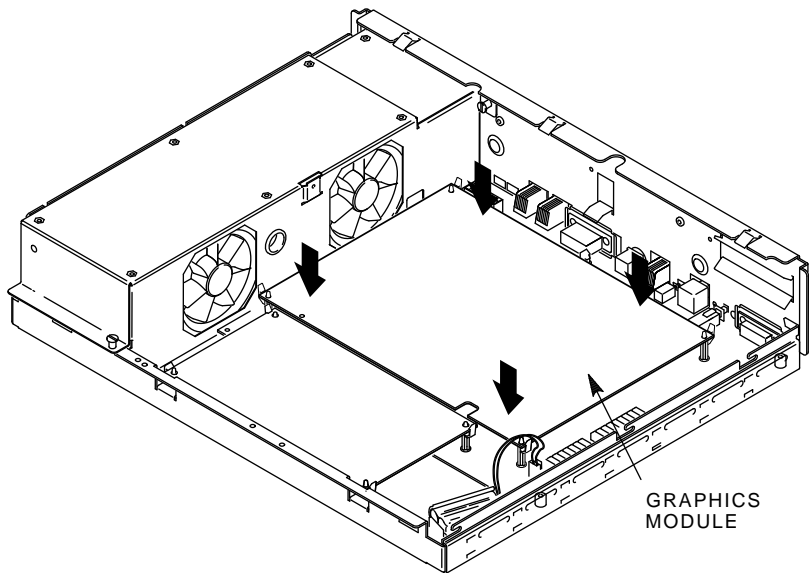


MA-X1174-88A

30 Upgrading a Model 30 (No Diskette)

**Reinstall the Graphic Module (if present)**

Reinstall the graphics module on the new system module. After the module is installed, press down on top of the module's connectors to firmly seat the connectors.

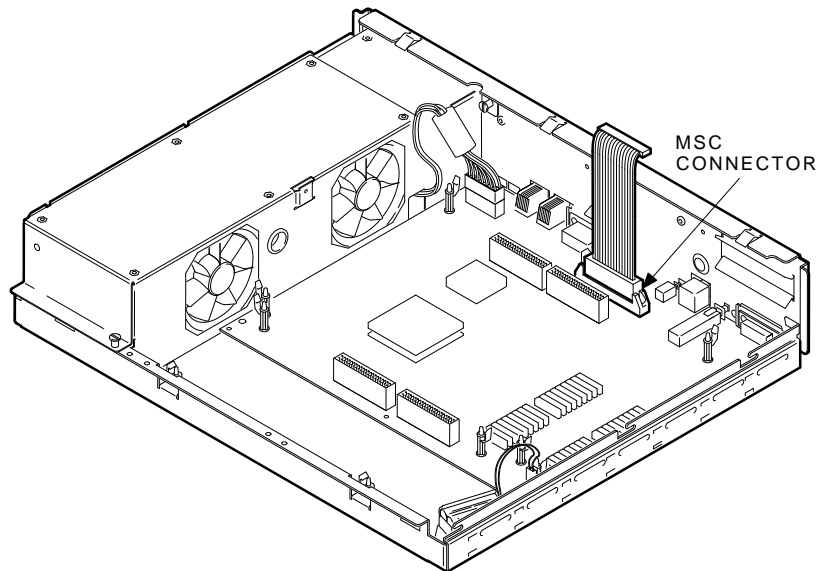


MA-X0803-88A

## 2.4 Installing the New Drive Plate

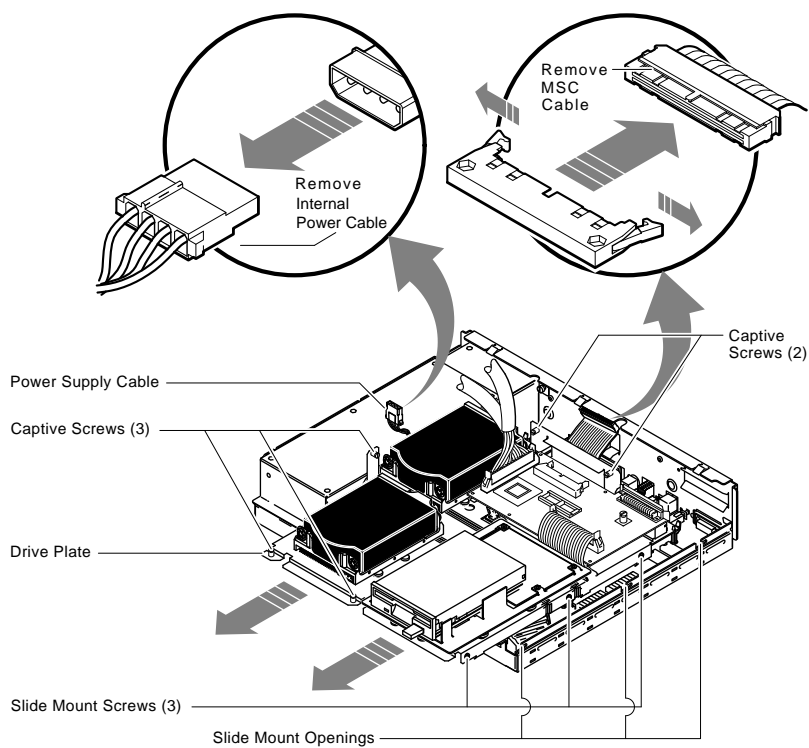
To install the new drive plate:

1. Connect the MSC cable to the new system module.



32 Upgrading a Model 30 (No Diskette)

2. Loosen the three slide mount screws on the side of the new drive plate.
3. Remove the SCSI terminator from the MSC module on the drive plate.
4. Position the drive plate on the system box, making sure that the MSC cable is not trapped under the drive plate.



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MA-X0863-89

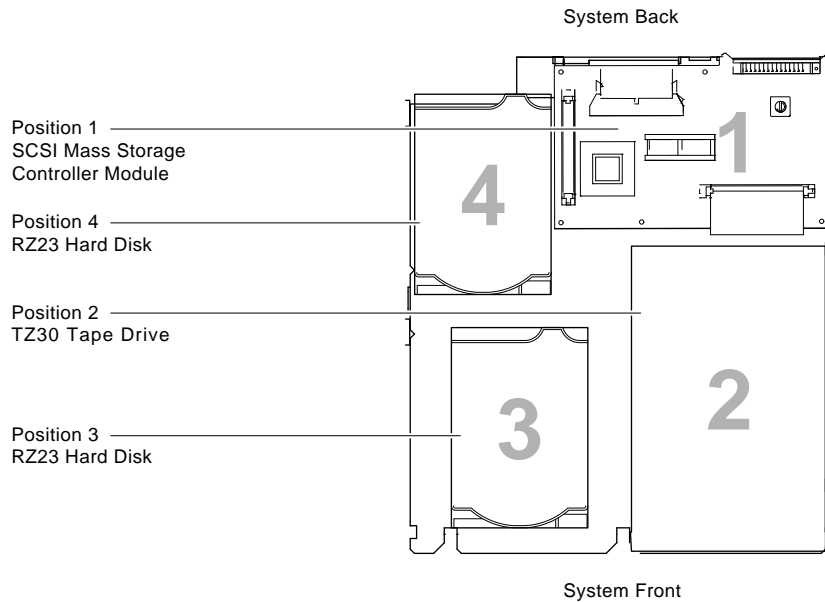
5. Tighten the five captive screws, then tighten the three slide mount screws.
6. Connect the MSC cable to the MSC module.



## 2.5 Configuring the Drives on the New Drive Plate

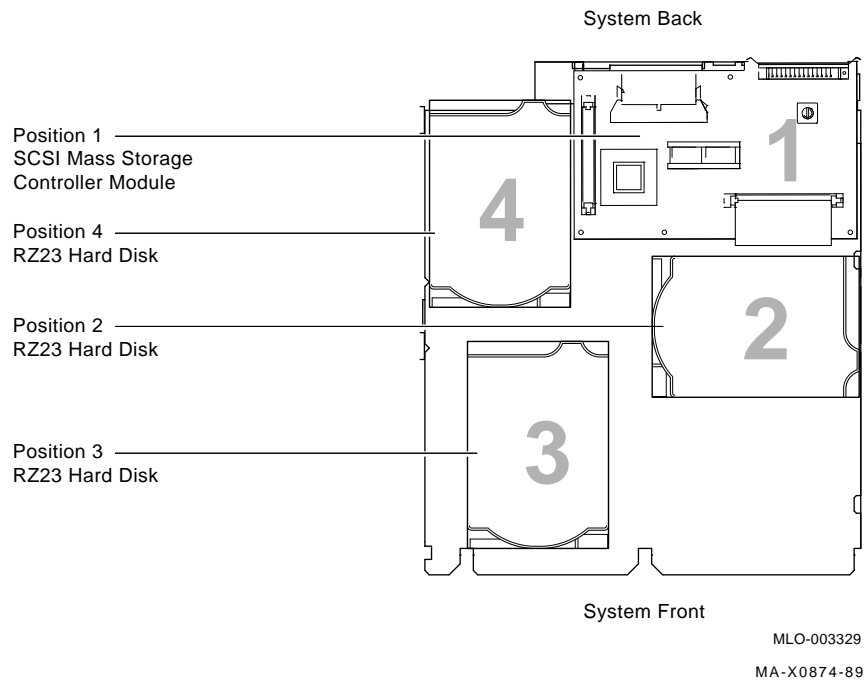
Determine where you will install the drives on the drive plate as follows:

If	Then
You are reinstalling one RZ22/RZ23 drive with the TZ30 tape drive	the RZ22/RZ23 should be in position 3 with the TZ30 in position 2.
You are reinstalling two RZ22/RZ23 drives with the TZ30 tape drive	the RZ22/RZ23s should be in position 3 and 4 with the TZ30 in position 2.
You are reinstalling three RZ22/RZ23 drives with <b>no</b> TZ30 tape drive	the RZ22/RZ23s should be in position 2, 3, and 4.



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## 2.6 Installing the RZ22/RZ23 Disk Drive(s)

To install the RZ22/RZ23 disk drive(s):

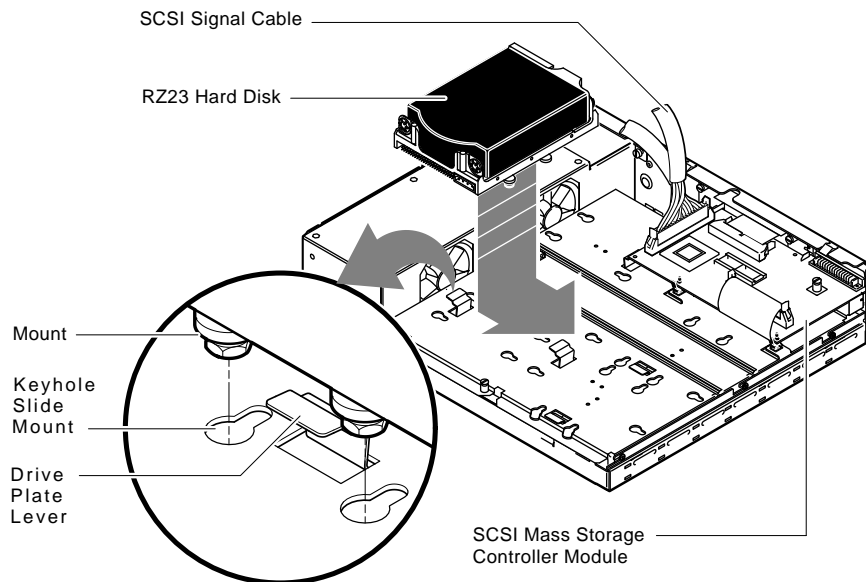
### Mount the Drives

1. Install four screw/grommets (PN 12-31734-01) on the bottom of the RZ22/RZ23 drive.

2. Insert the drive (with the power connector towards the front) on the four keyhole slide mount openings in its proper position on the drive plate.

**NOTE**

**If you are mounting a drive in position 4, you need to remove the MSC module for access to the drive's mounting holes.**



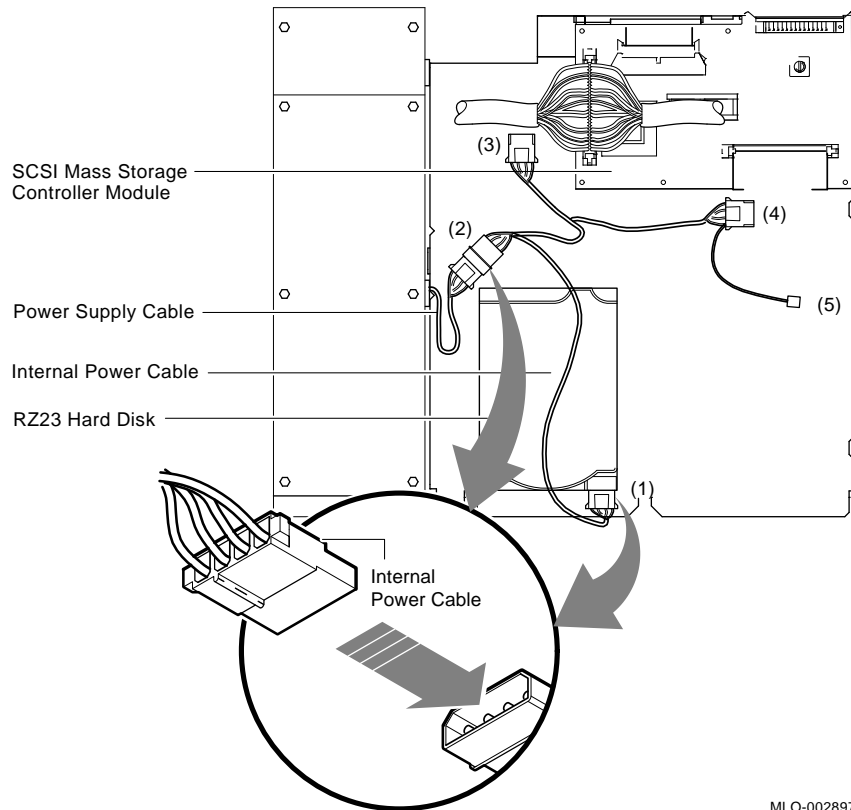
MLO-002896  
MA-X0860-89

3. Press the RZ23 hard disk down and slide it in the keyhole slide mount openings to lock it on the drive plate. The drive plate lever should pop up to lock the drive in place.
4. Repeat steps 1 through 3 for each drive that needs to be installed.

### Cable the Drives

The following figure shows the five connectors of the new power cable from the kit. The connectors are numbered for reference.

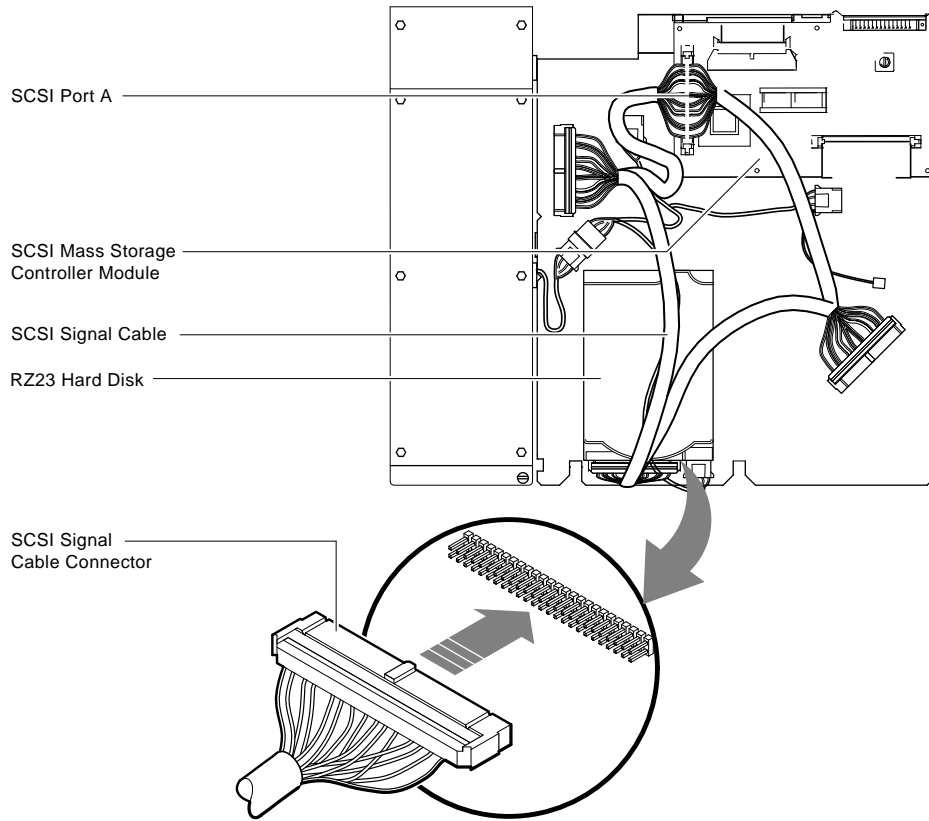
1. Connect the male connector ② to the power supply.



MLO-002897  
MA-X0861-89

2. Connect the other ends of the power cable to the RZ23 hard disk drives ①, ③, or ④ depending on the position of the drives.

3. If the larger (100 pin) end of the SCSI signal cable is not already connected to the SCSI port A on the MSC module, then connect it now.



MLO-002898  
MA-X0862-89

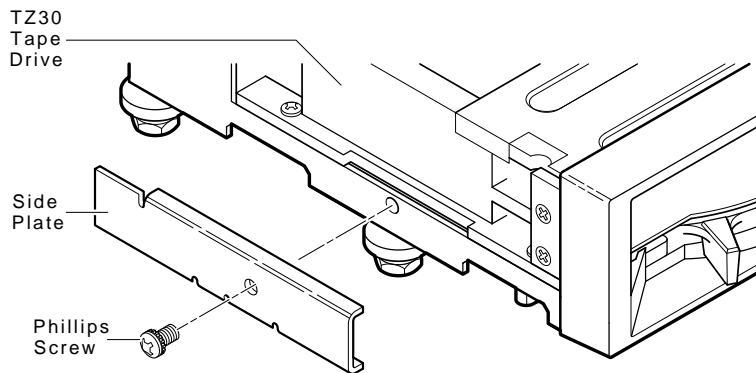
4. Connect the SCSI signal cable (PN 17-02439-01) to the RZ23 hard disk drives.

## 2.7 Installing the TZ30 Tape Drive

To install the TZ30 tape drive:

### Mount the Drive

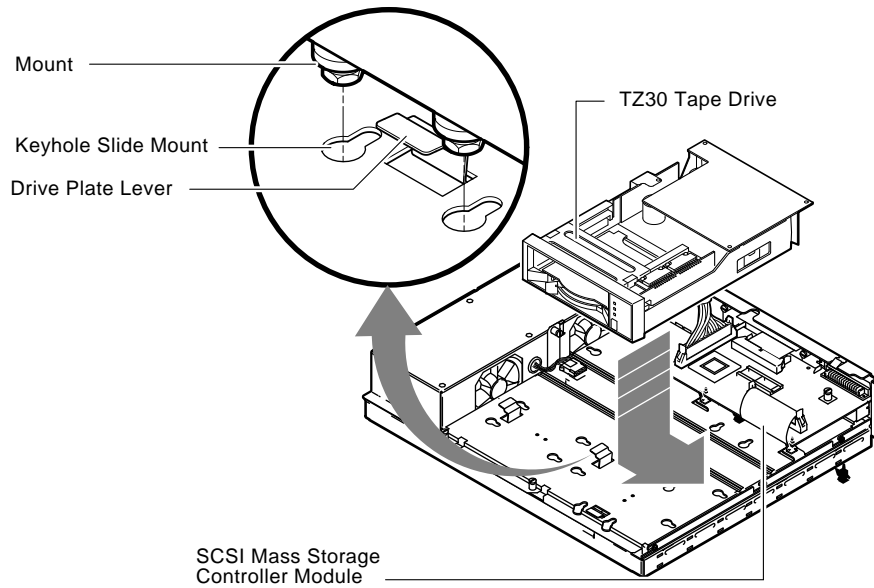
1. Install four metric screw/grommets (PN 12-31734-02) on the bottom of the TZ30 tape drive.
2. Install the TZ30 plate on the left side of the drive, using one of the two TZ30 plate mounting screws.



MLO-003477  
MA-X0934-89

3. Tuck the SCSI B port terminator cable under the MSC module. This cable terminates the SCSI B port and does not connect to any internal drives.

4. Insert the TZ30 tape drive on the four keyhole slide mount openings on the drive plate.



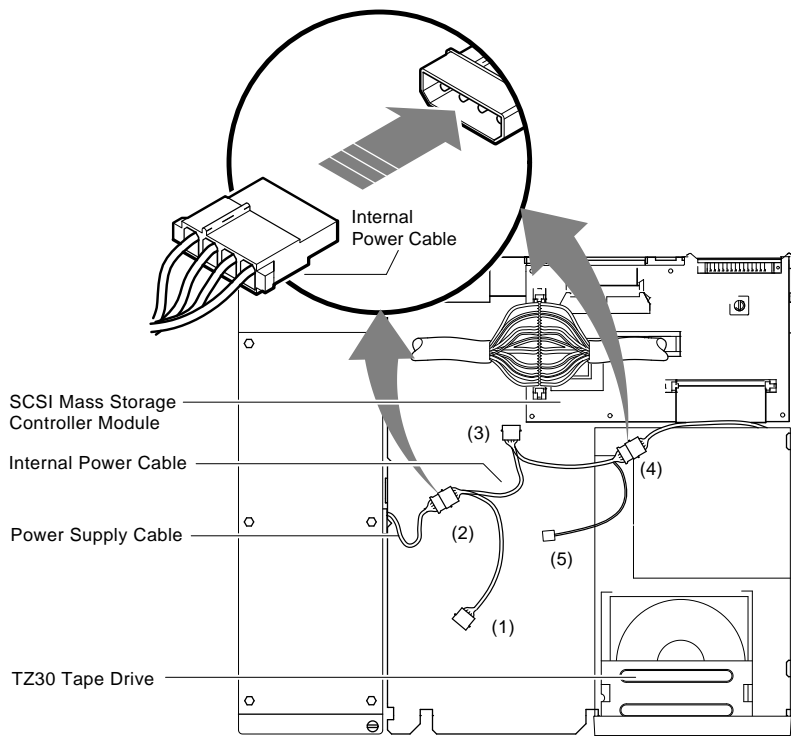
MLO-002891

MA-X0856-89

5. Press the TZ30 tape drive down and slide it in the keyhole slide mount openings to lock it on the drive plate. The drive plate lever should pop up to lock the drive in place.

### Cable the Drive

1. If you have not already connected the power cable's male connector ❷ to the power supply in the previous section, then connect it now.
2. Connect the number ❹ connector on the power cable to the TZ30 tape drive.

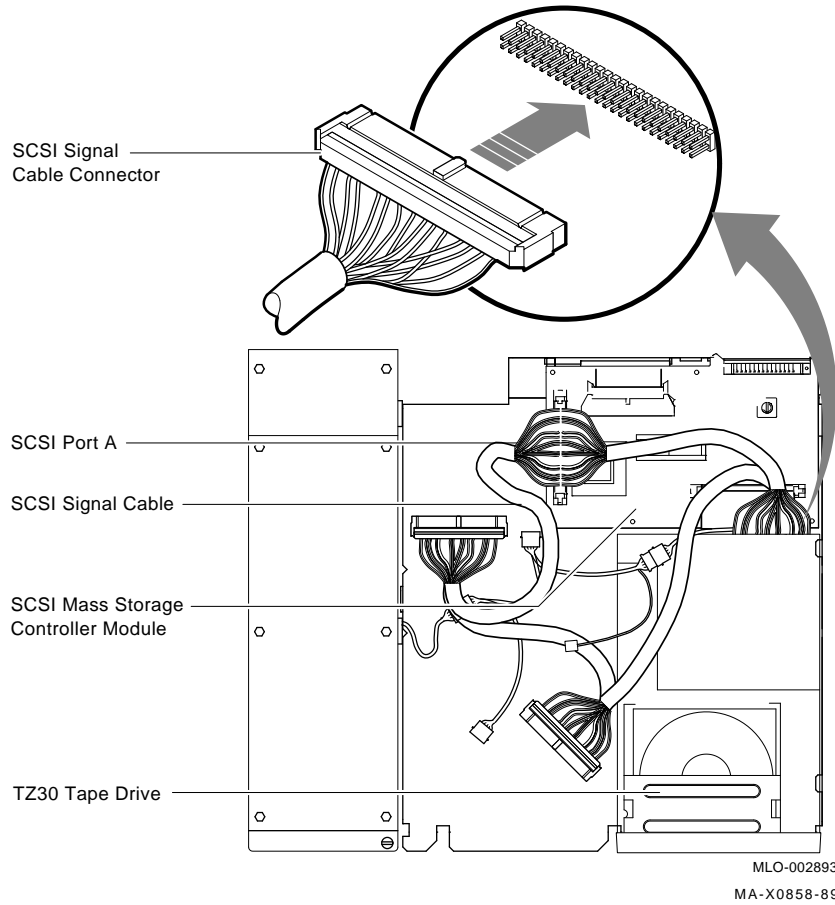


MLO-002892

MA-X0857-89



3. Connect the SCSI signal cable (PN 17-02439-01) to the TZ30 tape drive.

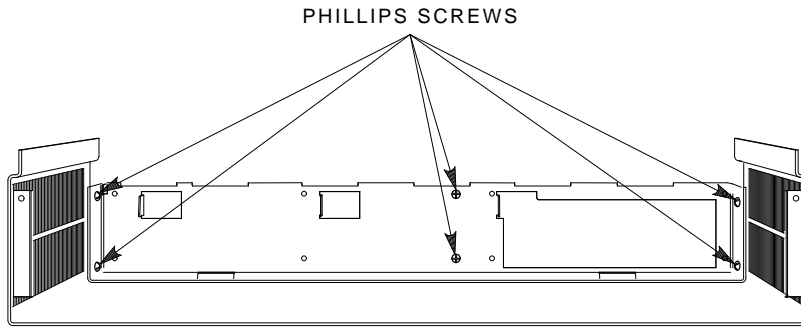


4. If the SCSI signal cable is not already connected to the SCSI port A on the MSC module, then connect it now.

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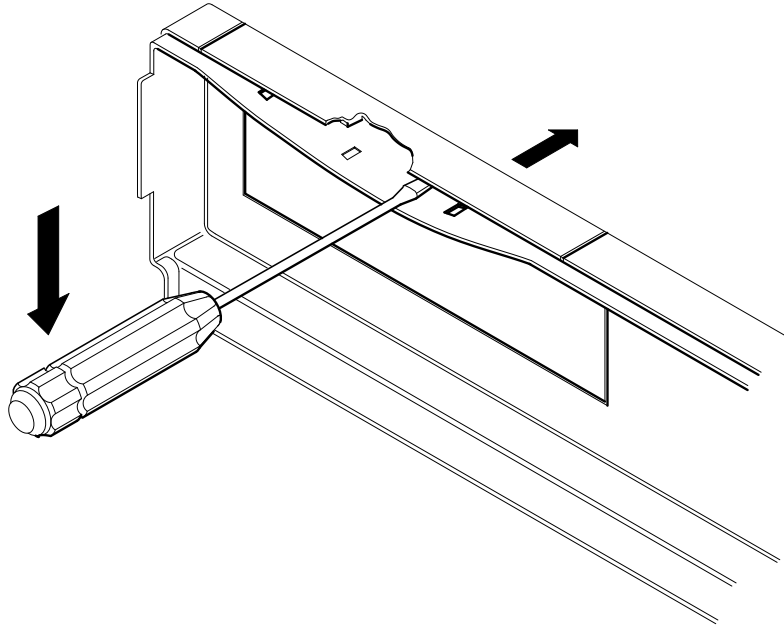
**Install the New Bezel Insert**

1. On the cover of the system box, remove the six screws and remove the front bezel from the cover.



MA-X0517-89

2. Separate the bezel insert from the front bezel.



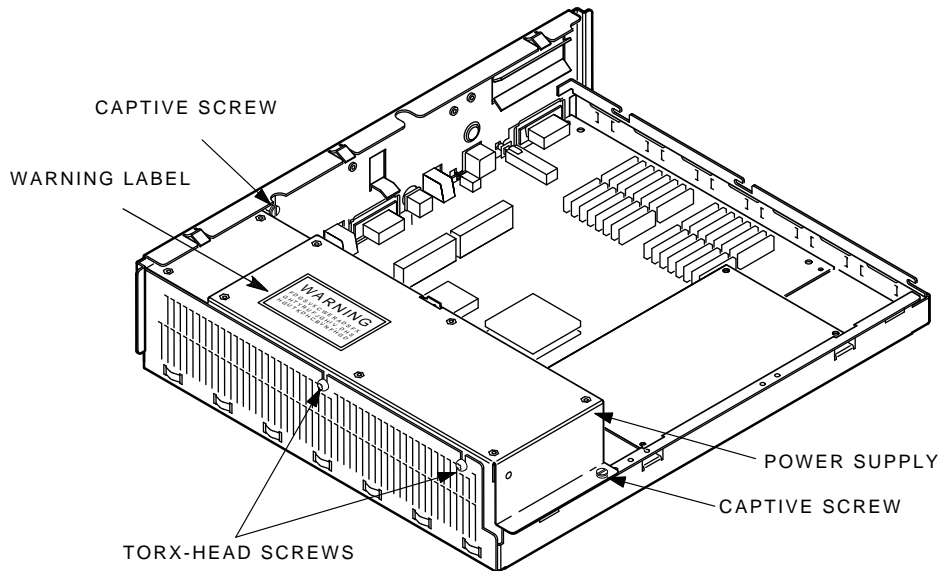
MA-X0518-89

3. Install the new bezel insert from the kit on the front bezel by reversing steps 1 and 2.
4. Remove the VAXstation 3100 medallion from the system box cover.
5. Install the new VAXstation 3100 M 38 medallion from the kit in the cover.
6. Reinstall the front bezel on the cover and reinstall the six screws.

## 2.8 Replacing the Power Supply Screws

To replace the power supply screws:

1. Remove the two phillips-head screws from the side of the power supply.
2. Install two of the three torx-head power supply safety screws (PN 12-30934-01) from the kit into the side of the power supply using the torx-head screwdriver.



MA-X0808-88A

3. Install the power supply warning label on the power supply.

## 2.9 Changing the Medallion

Perform the following steps to change the medallion if you have not already changed it.

1. On the cover of the system box, remove the six screws and remove the front bezel from the cover.
2. Remove the VAXstation 3100 medallion from the system box cover.
3. Install the new VAXstation 3100 M 38 medallion from the kit in the cover.
4. Reinstall the front bezel on the cover and reinstall the six screws.

## 2.10 Installing the Upgrade Label

Install the upgrade label from the kit beside the original label on the back of the system box.

## 2.11 Reinstalling the System Box Cover

To reinstall the system box cover:

1. Install the system box cover and tighten the two cover screws.
2. Refer to Chapter 1 of the maintenance guide. Run a self-test and the system exerciser to verify the status of the new system module.

## 2.12 Completing the Installation

The VAXstation 3100 replaced components as well as the excess materials (if any) from the upgrade kit are the property of Digital. You and the customer will need to fill out the upgrade forms in Appendix A and return them to the appropriate locations, as described in Appendix A.

# 3

## Upgrading a Model 30 (With Diskette)

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This chapter contains installation procedures for upgrading a VAXstation 3100 model 30 system that contains a diskette drive to a VAXstation 3100 model 38 system with a diskette drive.

### 3.1 PV11U-BA Kit Contents

The following table lists the contents and part numbers of the PV11U-BA kit:

---

<b>Kit Item</b>	<b>Part Number</b>
KA42-BA system module	54-19356-01
Owners manual, network guide, site planning	EK-VSM30-DK
VAXstation 3100 Upgrade Installation Guide	EK-345AA-IN
Upgrade label	36-15946-01
Power supply caution label	36-20124-01
Medallion, VAXstation 3100 M 38	
Three power supply safety screws*	12-30934-01
Drive plate, MSC module, 4 cables	70-26723-01
Thirteen screw/grommets*	12-31734-01
SCSI/FDI module	54-19288-01
Cable, 34 pin flat	17-02221-02
RX23 SCSI adapter module mounting bracket	74-39094-01
Six screws for mounting the SCSI adapter module*	90-09708-00
Five screws for mounting the RX23*	90-10981-01
Front panel window bezel	74-39607-01

---

\*One screw is extra.

<b>Kit Item</b>	<b>Part Number</b>
RX23 bezel	12-32364-01
RX23 eject button	12-32363-01

## 3.2 Preparing the System for Installation

To prepare the system for installation:

### Shut Down the System

1. Shut down the system software.
2. Run a self-test to verify the operation of the present configuration.

```
>>> TEST F 1
```

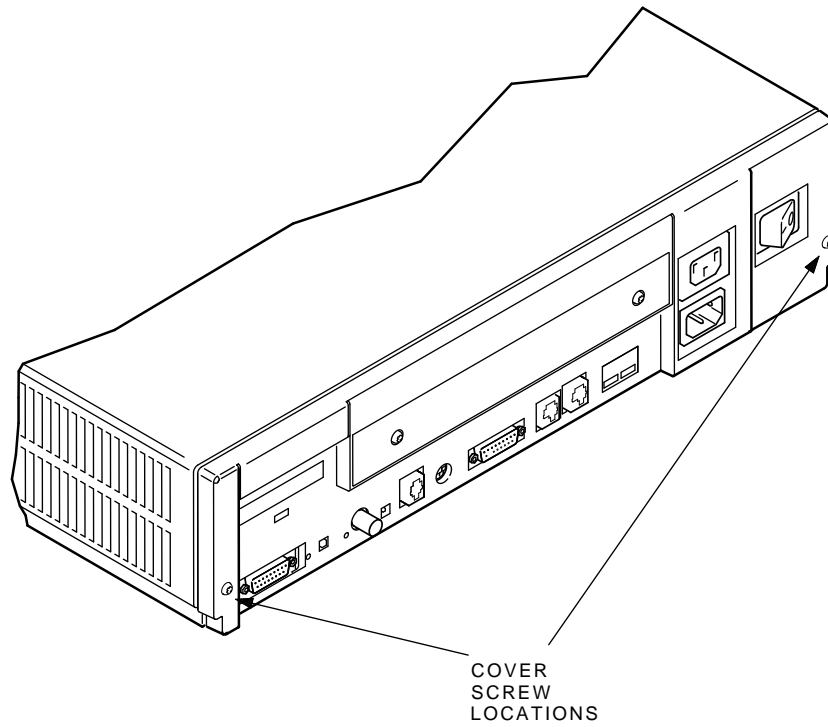
3. Turn the system power switch off.

### Open the System Box

#### **CAUTION**

**Wear a static wrist strap and use a static mat (PN 29-26242-00) when replacing FRUs.**

1. Unscrew the two cover screws.

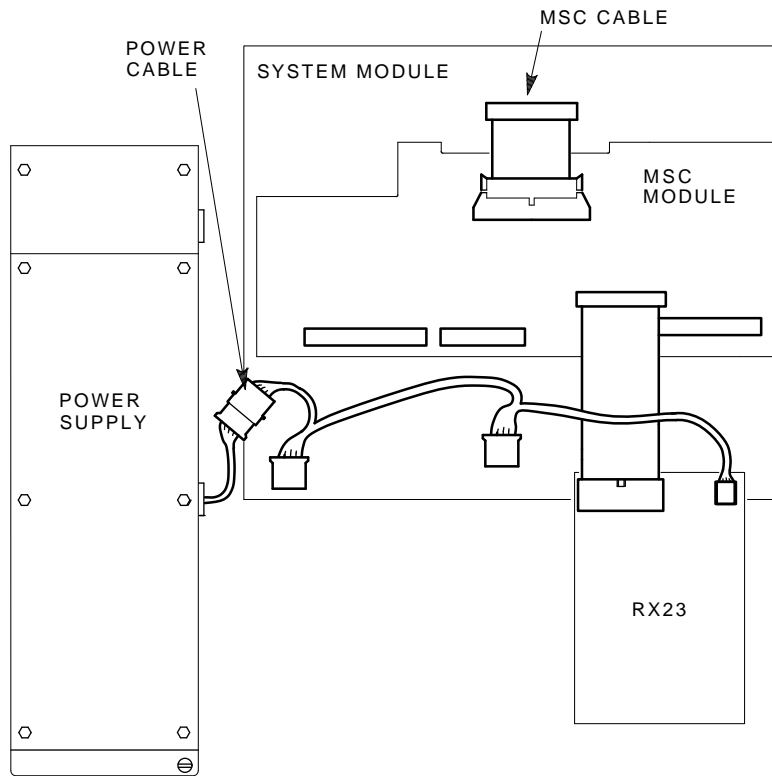


MA-X0796-88

2. Slide the cover forward and up off the system box.

**Remove the Drive Mounting Plate**

1. Disconnect the power cable from the power supply and disconnect the cable on the mass storage controller (MSC) module that goes to the system module.

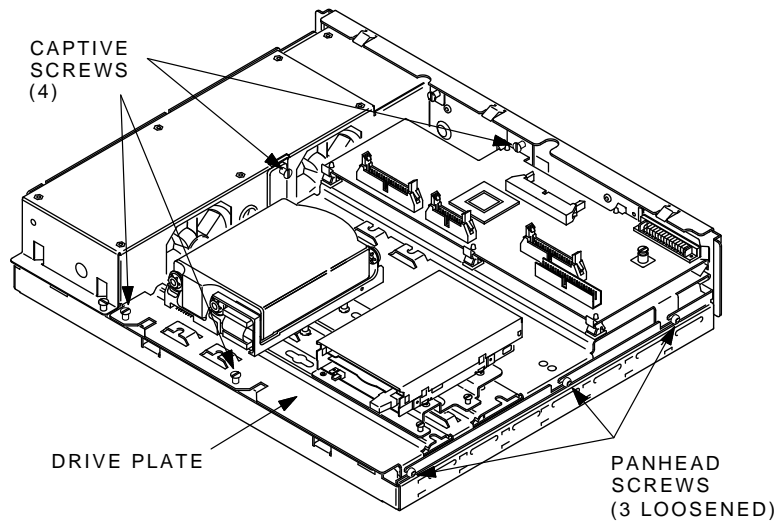


MA-X0526-89

2. Disconnect the external SCSI cable or the terminator from the SCSI port.



3. Unscrew the four captive screws, loosen the three panhead screws, and remove the drive mounting plate from the system box.



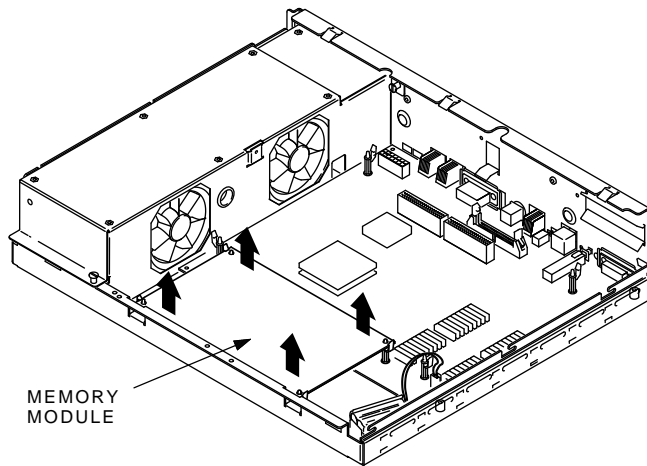
MA-X0858-88

#### Remove the Drives from the Drive Plate

1. Disconnect all cables from all of the drives on the old drive mounting plate and set them aside. They will **not** be reused.
2. Remove all of the drives from the old drive mounting plate. The mounting screws and their grommets will **not** be reused.

### Remove the Memory Module

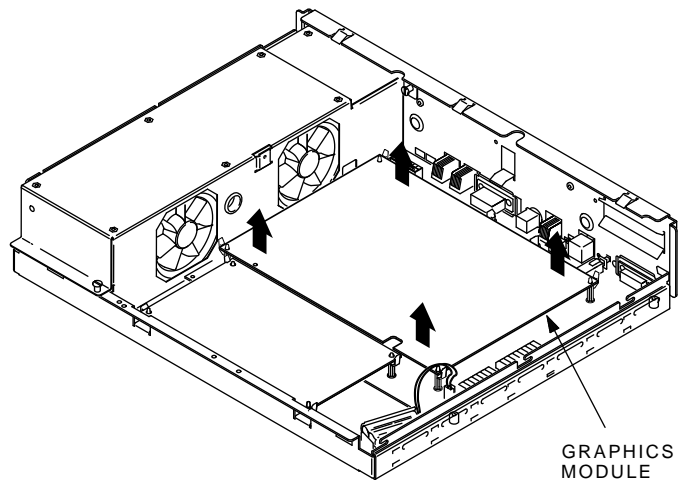
Remove the memory module from the four standoffs, then lift the memory module off the system module. Two connectors will disconnect as you lift the module.



MA-X0804-88

**Remove the Graphic Module (if present)**

Remove the graphic module from the four standoffs, then lift the graphic module off the system module. Two connectors will disconnect as you lift the module.



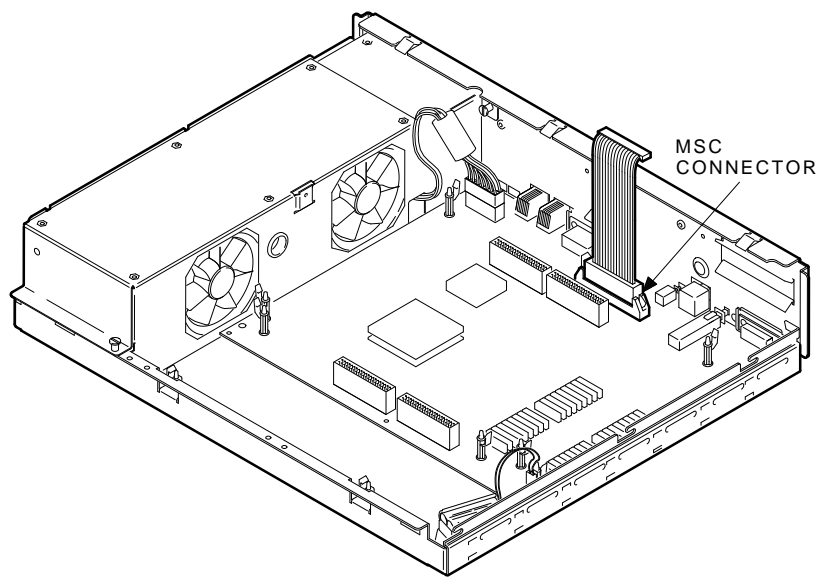
MA-X0803-88

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### Remove the System Module

To remove the system module:

1. Disconnect all cables from the back of the system box.
2. Disconnect the MSC cable from the system module.

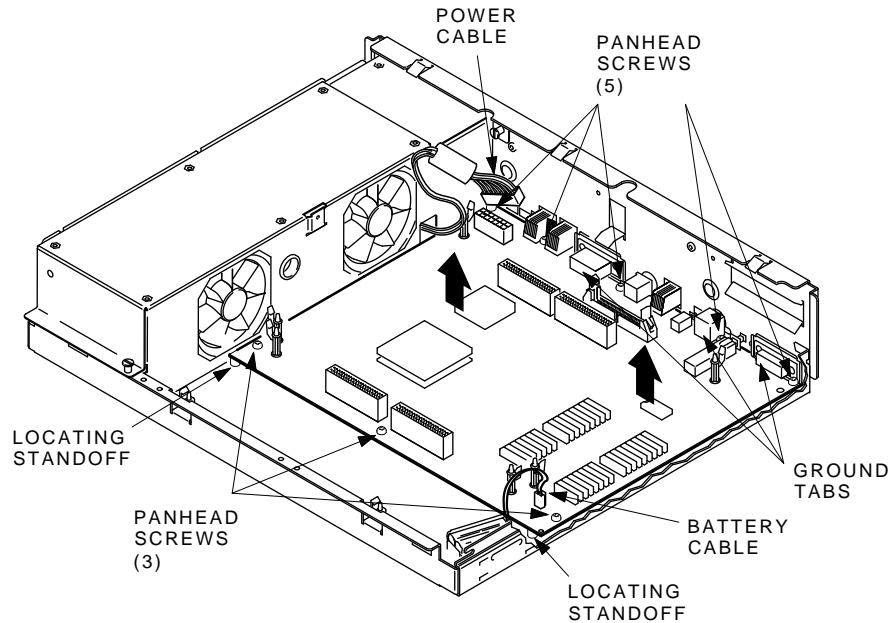


MA-X0514-89

**NOTE**

**Before disconnecting the power cable in the next step, be sure to release the connector latch on the back side of the power connector.**

3. Disconnect the power cable and the battery cable from the system module.



MA-X0805-88

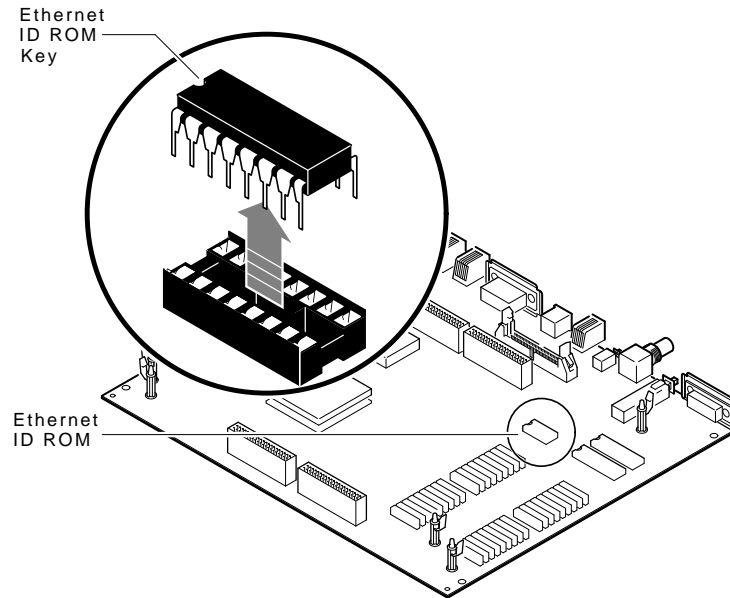
4. Remove the eight screws from the system module.
5. Remove the system module by carefully popping off the two front corners of the two locating standoffs.

**CAUTION**

**In the next step, you will swap the Ethernet ID ROMs on both the new system module and the old system module that you just removed. Be careful not to bend the pins on the ROM or not to mix up the ROM that goes on each system module.**

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6. Remove the Ethernet ID ROM from the system module you just removed. Set the ROM aside.



MLO-002918  
MA-X0872-89

7. Remove the Ethernet ID ROM from the new system module in the kit and reinstall it on the old system module.
8. Take the ID ROM that you just removed from the old system module and install it on the new system module.

### 3.3 Installing the Modules

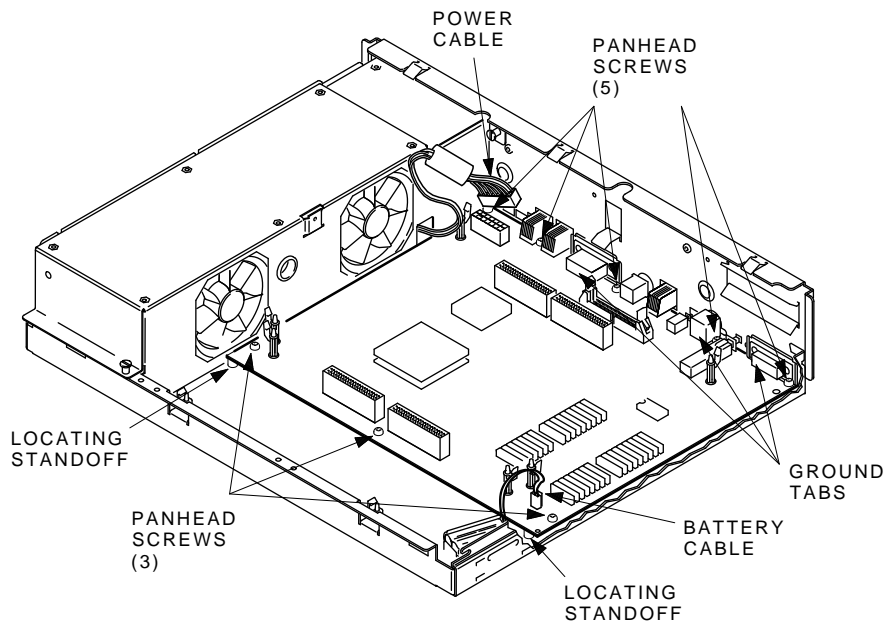
To install the modules:

#### Install the New System Module

**NOTE**

**When reinstalling the system module, install the connector end first through the openings in the rear of the box. Push the module back to load the connector ground tabs. Snap the module on both locating standoffs. All screw holes will then be aligned.**

1. Check the position of the S3 switch next to the LEDs on the back of the system module. Be sure S3 is in the down position (the down position enables the monitor to be the console and the up position enables a terminal connected to the printer port to be the console).
2. Install the connector end of the system module first through the openings in the rear of the box. Push the module back to load the connector ground tabs, then snap the module on both locating standoffs. All screw holes will then be aligned.
3. Install the eight screws on the system module.



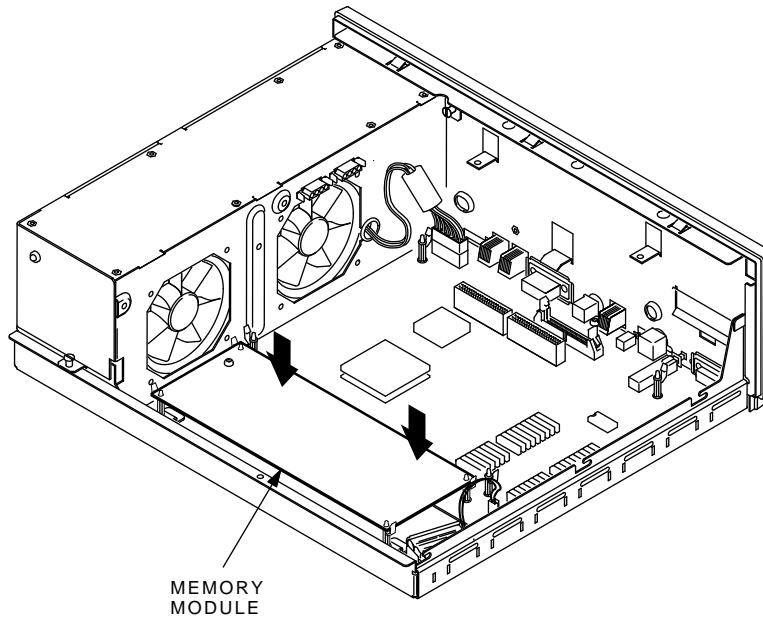
MA-X0805-88A

4. Connect the power cable and the battery cable to the system module.
5. Reconnect all cables to the back of the system box.

### Reinstall the Memory Module

Install the memory module(s) on the new system module as shown in the following two figures. The first figure is for 4 or 12 Mbyte (single) memory module installation; the second figure is for 8 or 16 Mbyte (dual) memory module installation. After the module(s) are installed, press down on top of the module's connectors to firmly seat the connectors.

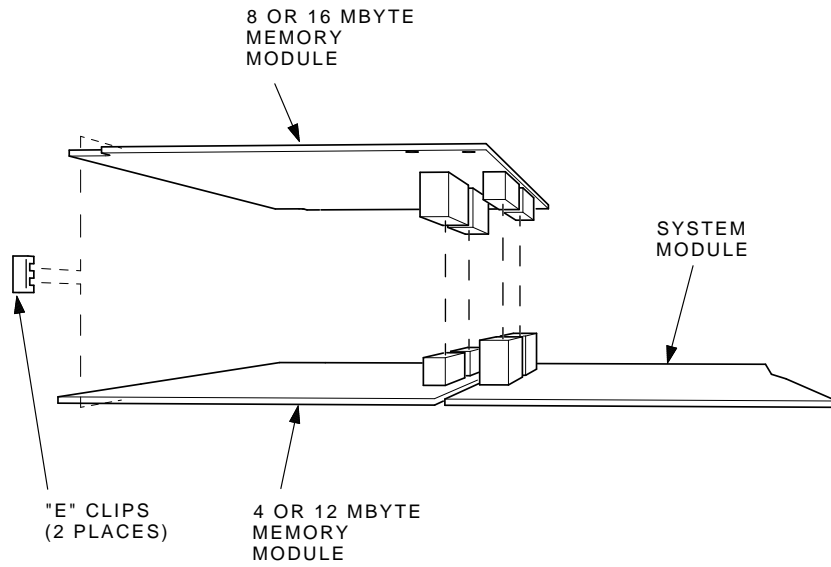
#### 4 or 12 Mbyte (single) Memory Module Installation



MA-X0848-88A



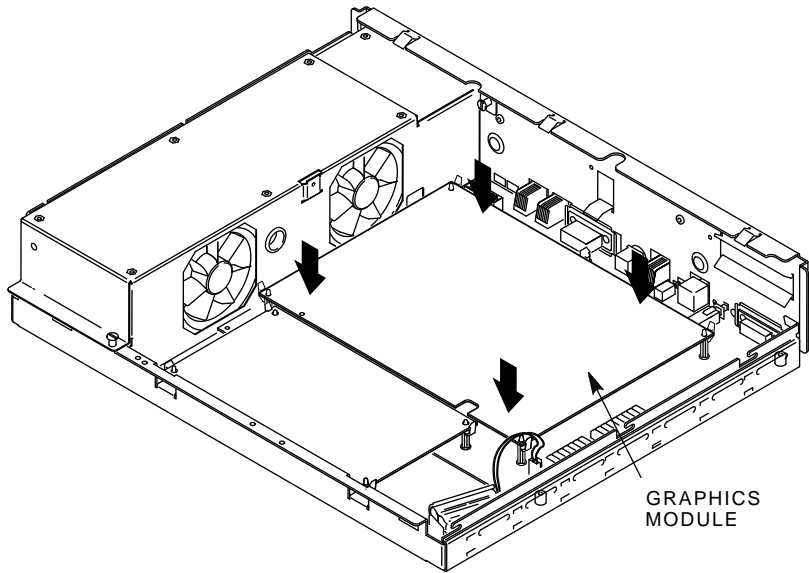
### 8 or 16 Mbyte (dual) Memory Module Installation



MA-X1174-88A

**Reinstall the Graphic Module (if present)**

Reinstall the graphics module on the new system module as shown in the following figure. After the module is installed, press down on top of the module's connectors to firmly seat the connectors.

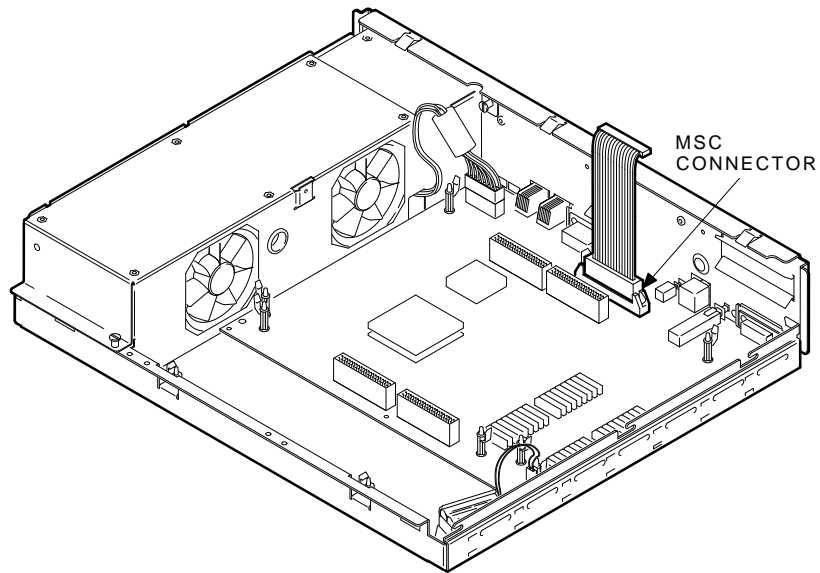


MA-X0803-88A

### 3.4 Installing the New Drive Plate

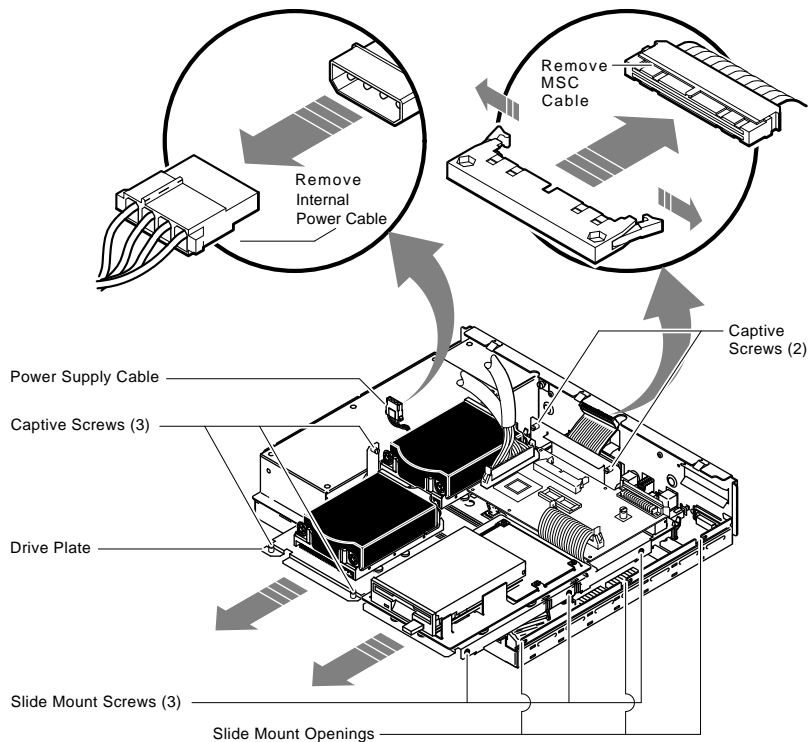
To install the new drive plate:

1. Connect the MSC cable to the new system module.



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2. Loosen the three slide mount screws on the side of the drive plate.
3. Remove the SCSI terminator from the MSC module on the drive plate.
4. Position the drive plate on the system box making sure that the MSC cable is not trapped under the drive plate.



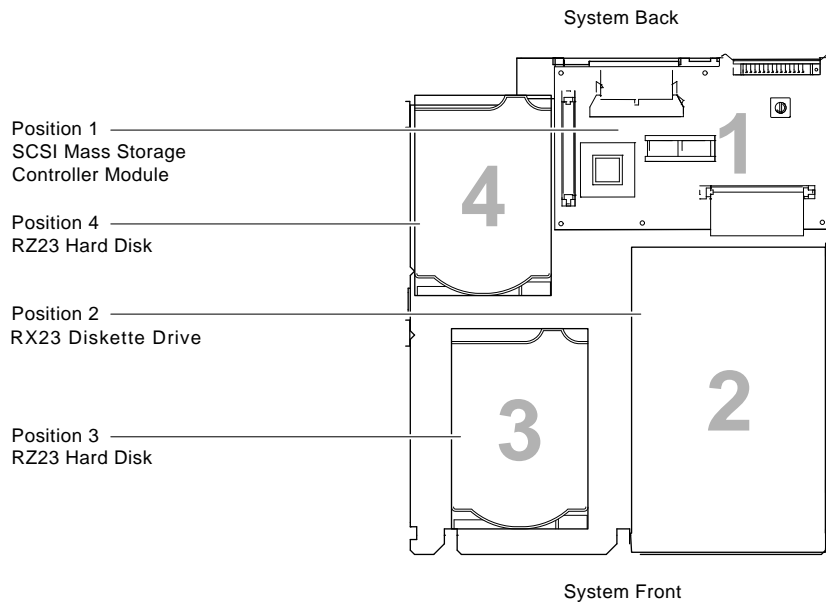
MLO-002905  
MA-X0863-89

5. Tighten the five captive screws, then tighten the three slide mount screws.
6. Connect the MSC cable to the MSC module.

### 3.5 Configuring the Drives on the New Drive Plate

Determine where you will install the drives on the drive plate as follows:

If	Then
You are reinstalling one RZ22/RZ23 drive with the RX23 diskette drive	the RZ22/RZ23 should be in position 3 with the RX23 in position 2.
You are reinstalling two RZ22/RZ23 drives with the RX23 diskette drive	the RZ22/RZ23s should be in position 3 and 4 with the RX23 in position 2.



MLO-002894  
MA-X0859-89A

### 3.6 Installing the RZ22/RZ23 Disk Drive(s)

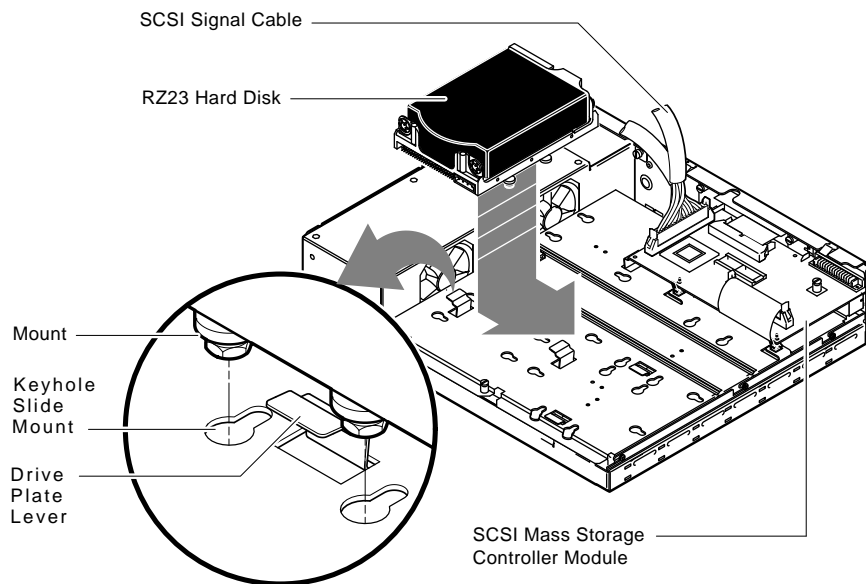
To install the RZ22/RZ23 disk drive(s):

#### Mount the Drives

1. Install four screw/grommets (PN 12-31734-01) on the bottom of the RZ22/RZ23 drive.
2. Insert the drive (with the power connector towards the front) on the four keyhole slide mount openings in its proper position on the drive plate.

#### NOTE

**If you are mounting a drive in position 4, you need to remove the MSC module for access to the drive's mounting holes.**



MLO-002896

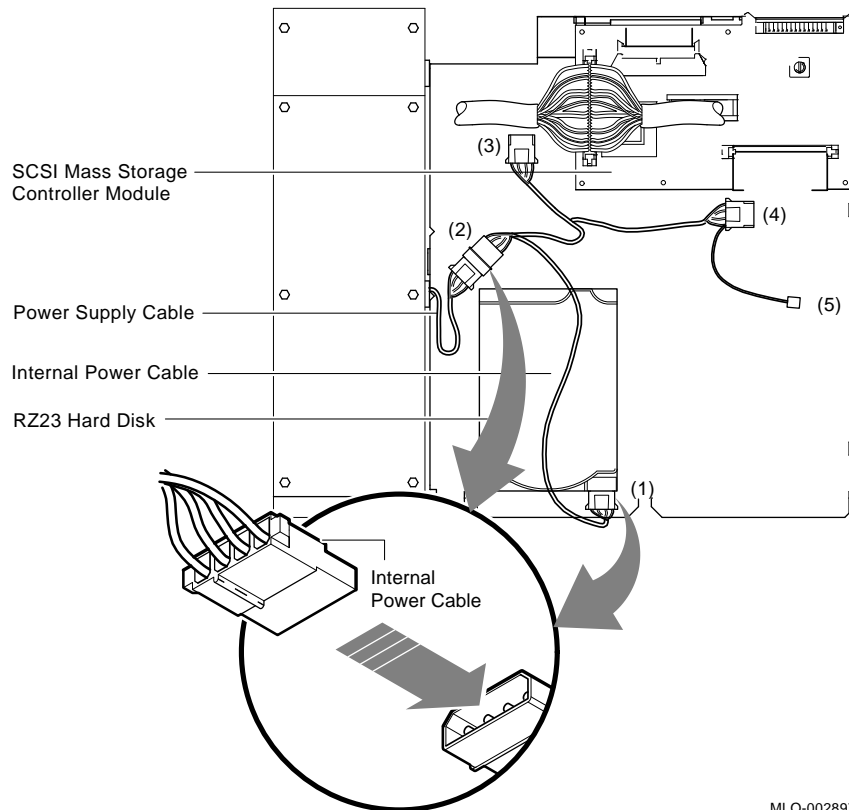
MA-X0860-89

3. Press the RZ23 hard disk down and slide it in the keyhole slide mount openings to lock it on the drive plate. The drive plate lever should pop up to lock the drive in place.
4. Repeat steps 1 through 3 for each drive that needs to be installed.

### Cable the Drives

The following figure shows the five connectors of the new power cable from the kit. The connectors are numbered for reference.

1. Connect the male connector ② to the power supply.

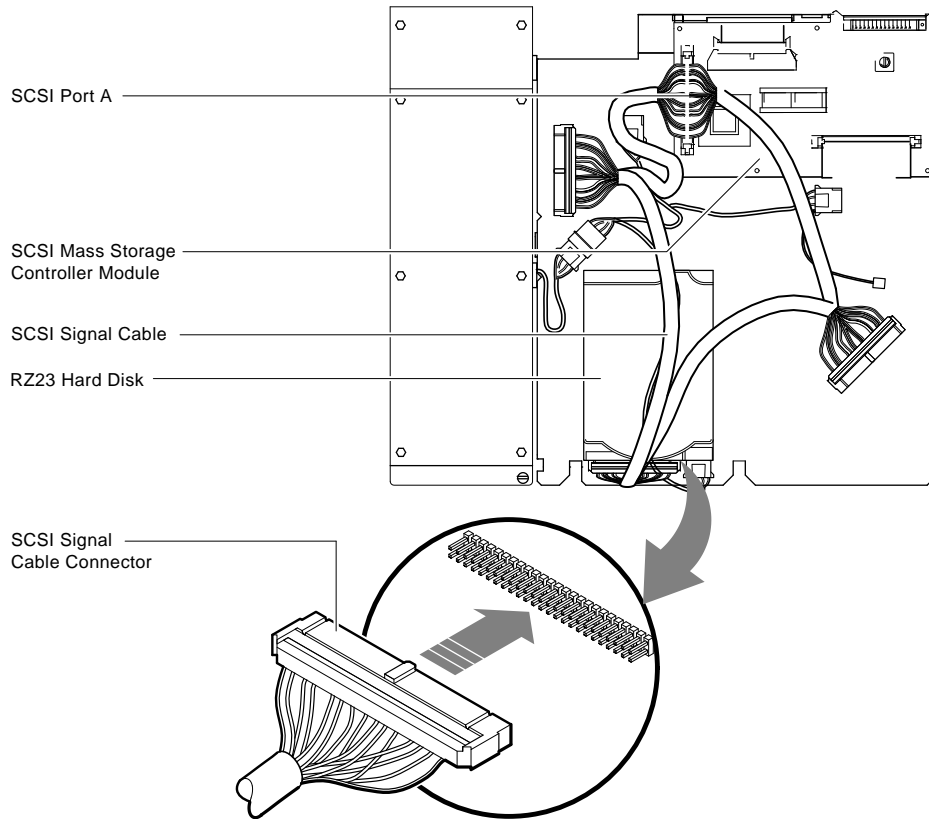


MLO-002897  
MA-X0861-89

2. Connect the other ends of the power cable to the RZ23 hard disk drives ① or ③, depending on the position of the drives.

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3. If the larger (100 pin) end of the SCSI signal cable is not already connected to the SCSI port A on the MSC module, then connect it now.



MLO-002898  
MA-X0862-89

4. Connect the SCSI signal cable (PN 17-02439-01) to the RZ23 hard disk drives.



### 3.7 Installing the RX23 Diskette Drive

To install the RX23 diskette drive:

#### Assemble the RX23 SCSI adapter assembly

1. Remove the old adapter bracket from the RX23 diskette drive.
2. Install the eject button on the RX23 drive.

#### NOTE

**Before performing the next step, check the serial number on the RX23 drive. If it is SH91300639 or lower, the component leads under the drive may need to be trimmed before installing the front bezel on the drive. Trim the leads so that the bezel does not make contact with these leads.**

3. Snap on the front bezel.
4. Mount the RX23 on the new SCSI adapter mounting bracket using four of the metric screws (PN 90-10981-01). See the following figure for reference.
5. Turn the SCSI adapter mounting bracket over and install the SCSI adapter module (component side down) using five of the screws (PN 90-09708-00).
6. Turn the SCSI adapter mounting bracket over again and connect the 34-pin cable (PN 17-02221-02) to the RX23 drive and to the SCSI adapter module.

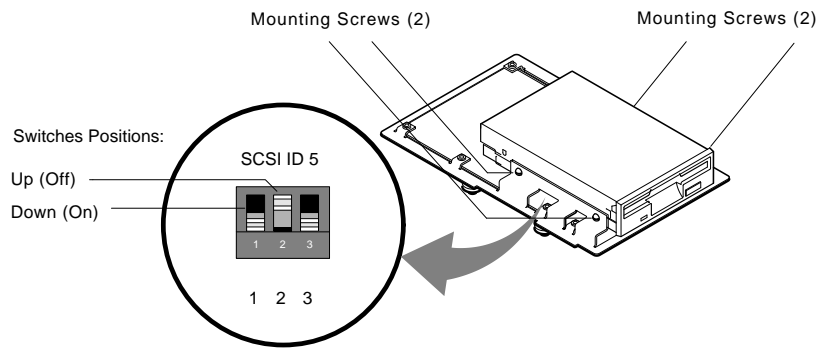
#### NOTE

**Once the RX23 drive and the SCSI adapter module is mounted on the mounting bracket, it becomes one FRU and cannot be ordered individually.**

#### Set the SCSI ID Switches

1. Locate the SCSI ID switches (1, 2, and 3) on the RX23 SCSI adapter assembly.

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MLO-002886  
MA-X0851-89

- Use a pen or small pointed object to move the switches up or down as necessary to set the switches to the following positions:

Switch 1 = down (on)  
Switch 2 = up (off)  
Switch 3 = down (on)

Table 3-1 lists all possible settings for the RX23 diskette drive.

**Table 3-1 RX23 SCSI ID Switch Settings**

SCSI ID	1	2	3
0	Off	Off	Off
1	On	Off	Off
2	Off	On	Off
3	On	On	Off
4	Off	Off	On
5 <sup>1</sup>	On	Off	On
6 <sup>2</sup>	Off	On	On
7 <sup>3</sup>	On	On	On

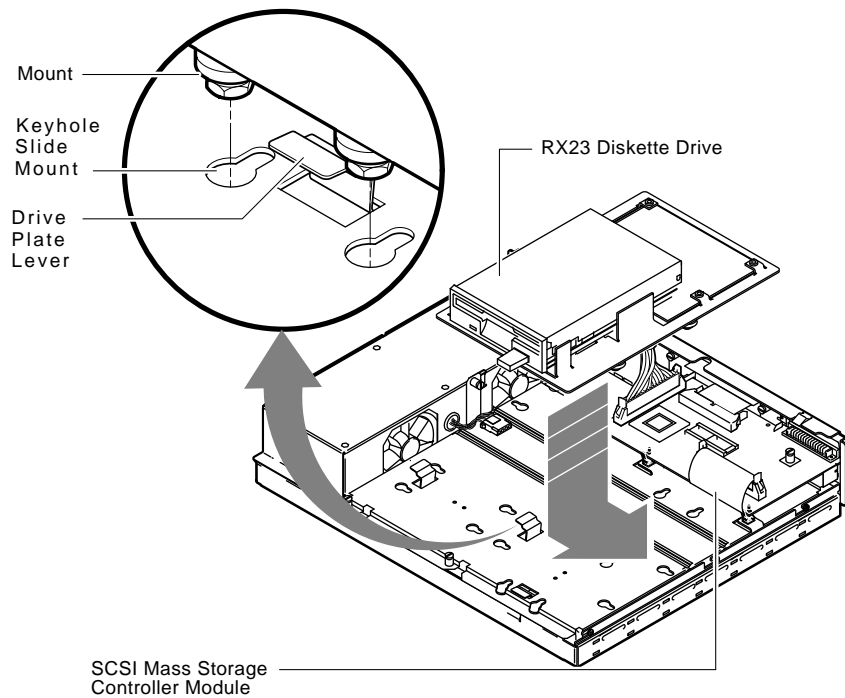
<sup>1</sup>Recommended ID for the RX23 diskette drive.

<sup>2</sup>Reserved ID for SCSI controller.

<sup>3</sup>Reserved for future use—do not use.

### Mount the RX23 SCSI Adapter Assembly

1. Install four screw/grommets on the bottom of the drive.
2. Tuck the SCSI B port terminator cable under the MSC module. This cable terminates the SCSI B port and does not connect to any internal drives.
3. Insert the assembly on the four keyhole slide mount openings on the drive plate.



MLO-002887

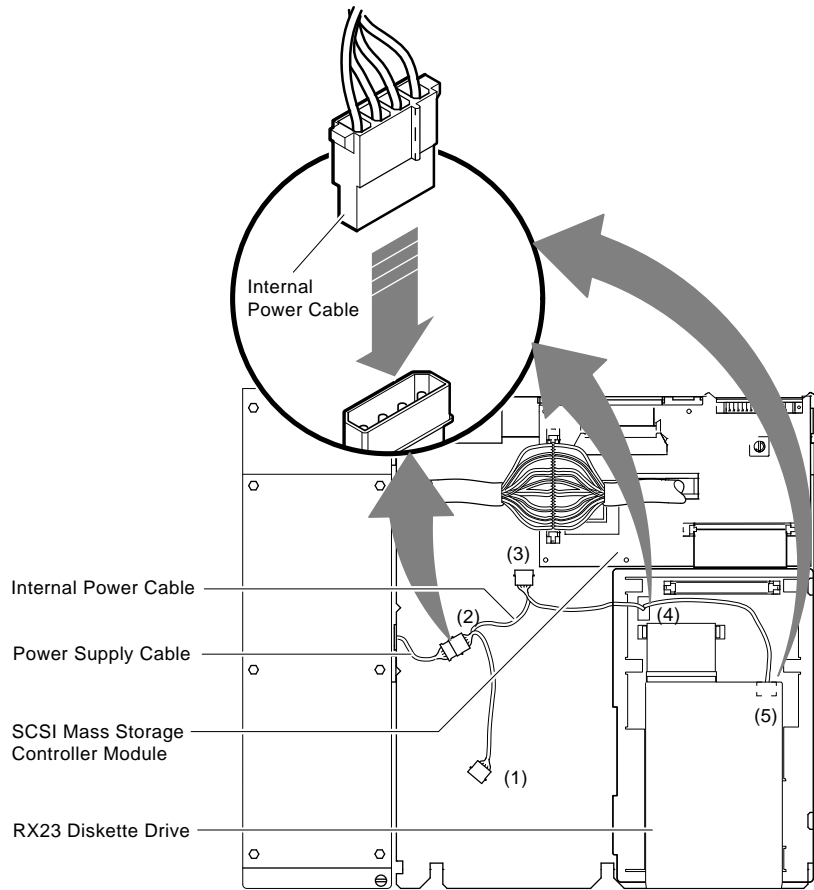
MA-X0852-89

4. Press the RX23 SCSI adapter assembly down and slide it in the slide mount openings to lock it on the drive plate. The drive plate lever should pop up to lock the assembly in place.

### Cable the RX23 SCSI Adapter Assembly

The following figure shows the cable connectors numbered for reference.

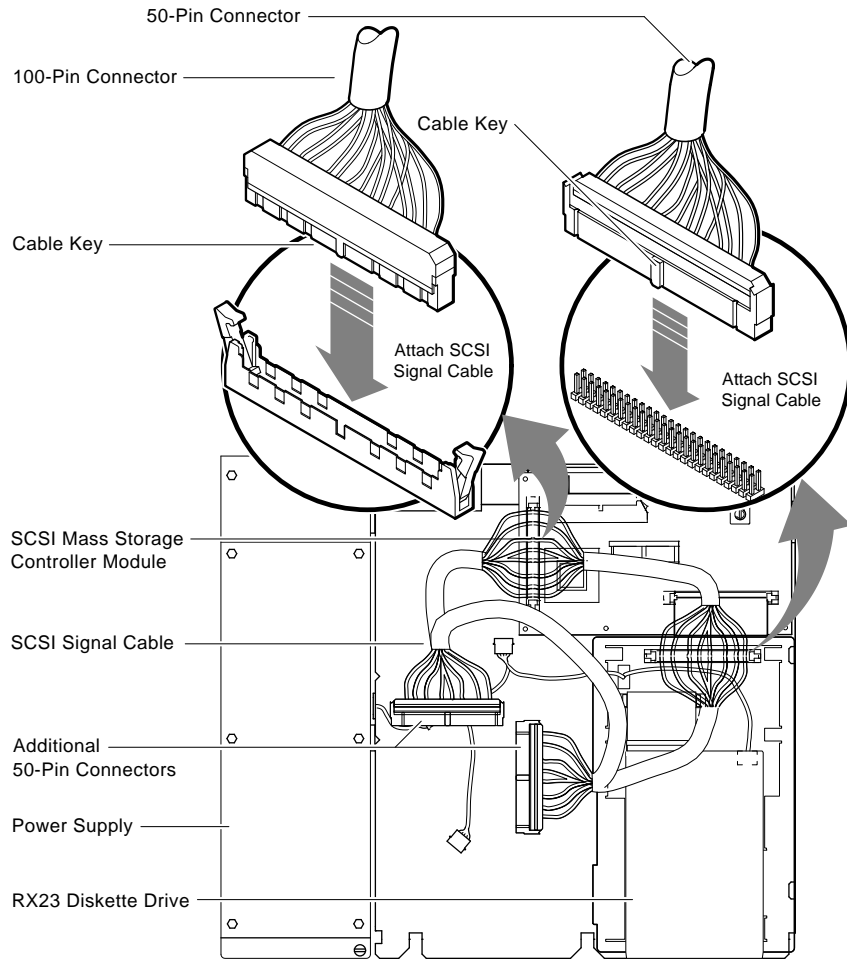
1. If you have not already connected the male connector to the power supply in the previous sections, then connect it now.
2. Connect the number ⑤ connector on the power cable to the RX23 diskette drive.



MLO-002888  
MA-X0853-89

3. Connect the number ④ connector on the power cable to the RX23 SCSI adapter module.

4. Connect the SCSI signal cable (PN 17-02439-01) to the RX23 SCSI adapter module.



MLO-002889

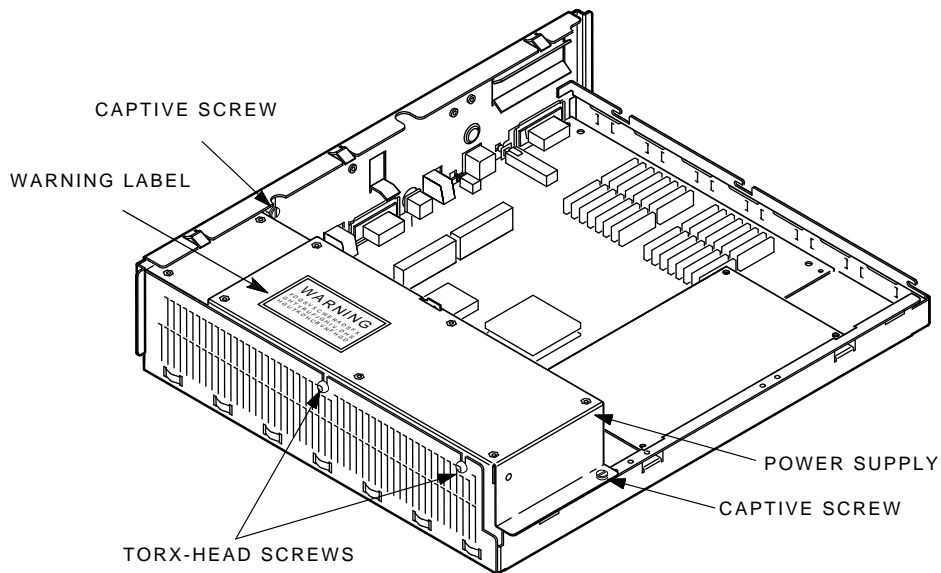
MA-X0854-89

5. If the SCSI signal cable is not already connected to the SCSI port A on the MSC module, then connect it now.

### 3.8 Replacing the Power Supply Screws

To replace the power supply screws:

1. Remove the two phillips-head screws from the side of the power supply.
2. Install two of the three torx-head power supply safety screws (PN 12-30934-01) from the kit into the side of the power supply using the torx-head screwdriver.



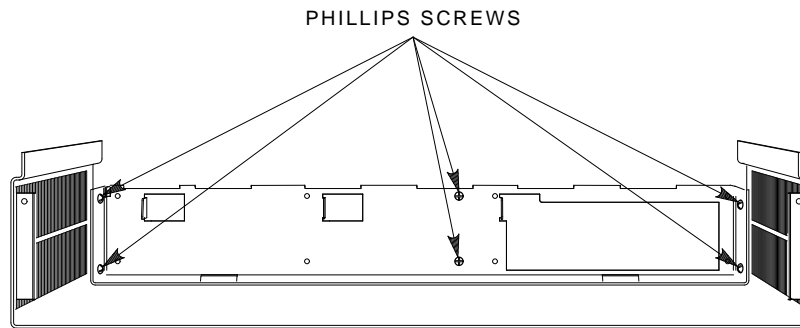
MA-X0808-88A

3. Install the power supply warning label on the power supply.

### 3.9 Installing the New Bezel Window

To install the new bezel window:

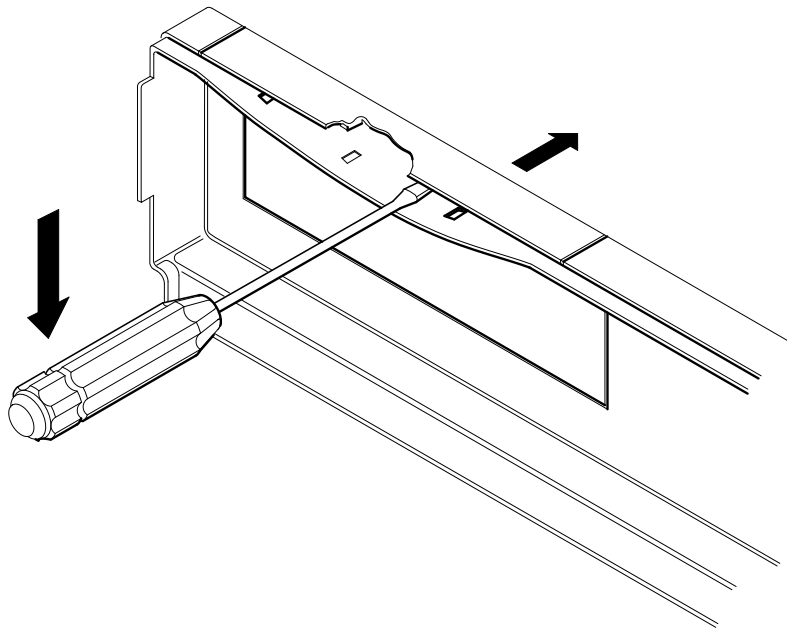
1. On the cover of the system box, remove the six screws and remove the front bezel from the cover.



MA-X0517-89

2. Separate the old RX23 bezel insert from the front bezel.

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MA-X0518-89

3. Install the new bezel window from the kit on the front bezel by reversing the previous steps 1 and 2.
4. Remove the VAXstation 3100 medallion from the system box cover.
5. Install the new VAXstation 3100 M 38 medallion from the kit in the cover.
6. Reinstall the front bezel on the cover and reinstall the six screws.



### **3.10 Installing the Upgrade Label**

Install the upgrade label from the kit on the back of the system box. Be sure not to cover over any existing labels.

### **3.11 Reinstalling the System Box Cover**

To reinstall the system box cover:

1. Install the system box cover and tighten the two cover screws.
2. Refer to Chapter 1 of the maintenance guide. Run a self-test and the system exerciser to verify the status of the new system module.

### **3.12 Completing the Installation**

The VAXstation 3100 replaced components as well as the excess materials (if any) from the upgrade kit are the property of Digital. You and the customer will need to fill out the upgrade forms in Appendix A and return them to the appropriate locations, as described in Appendix A.

# 4

## Upgrading the Model 40

---

This chapter contains installation procedures for upgrading a VAXstation 3100 model 40 system to a VAXstation 3100 model 48 system.

### 4.1 PV15U-AA Kit Contents

The following table lists the contents and part numbers of the PV15U-AA kit:

<b>Kit Item</b>	<b>Part Number</b>
KA42-BA system module	54-19356-01
SCSI/SCSI controller	54-17445-05
Owners manual	EK-VSM40-DK
VAXstation 3100 Upgrade Installation Guide	EK-345AA-IN
Medallion, VAXstation 3100 M 48	
Upgrade label	36-15946-01

## 4.2 Preparing the System for Installation

To prepare the system for installation:

### Shut Down the System

1. Shut down the system software.
2. Run a self-test to verify the operation of the present configuration.

```
>>> TEST F 1
```

3. Turn the system power switch off.

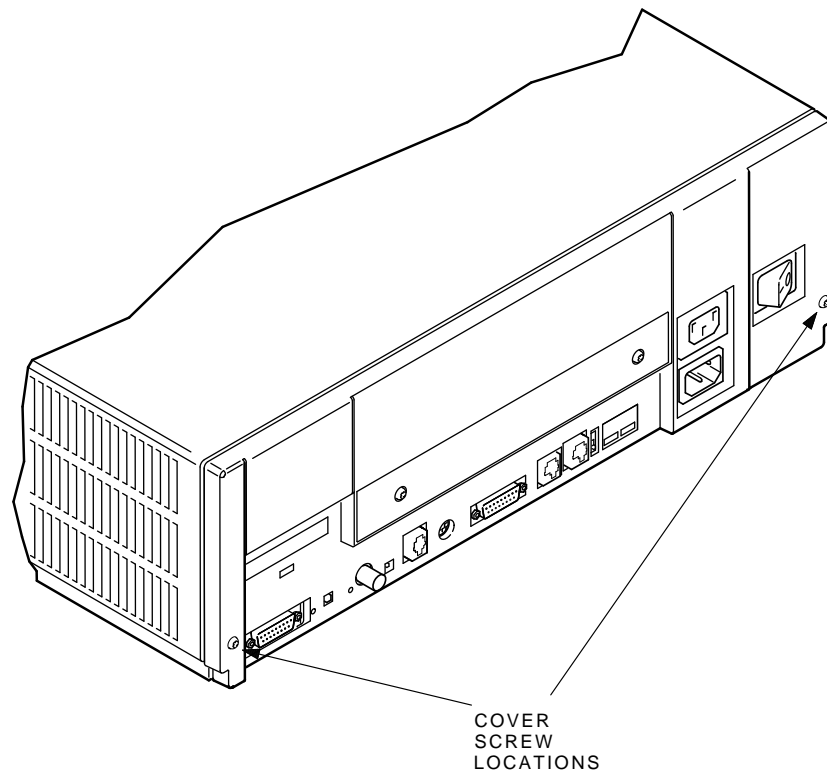
### Open the System Box

#### **CAUTION**

**Wear a static wrist strap and use a static mat (PN 29-26242-00) when replacing FRUs.**

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1. Unscrew the two cover screws.



MA-X0813-88

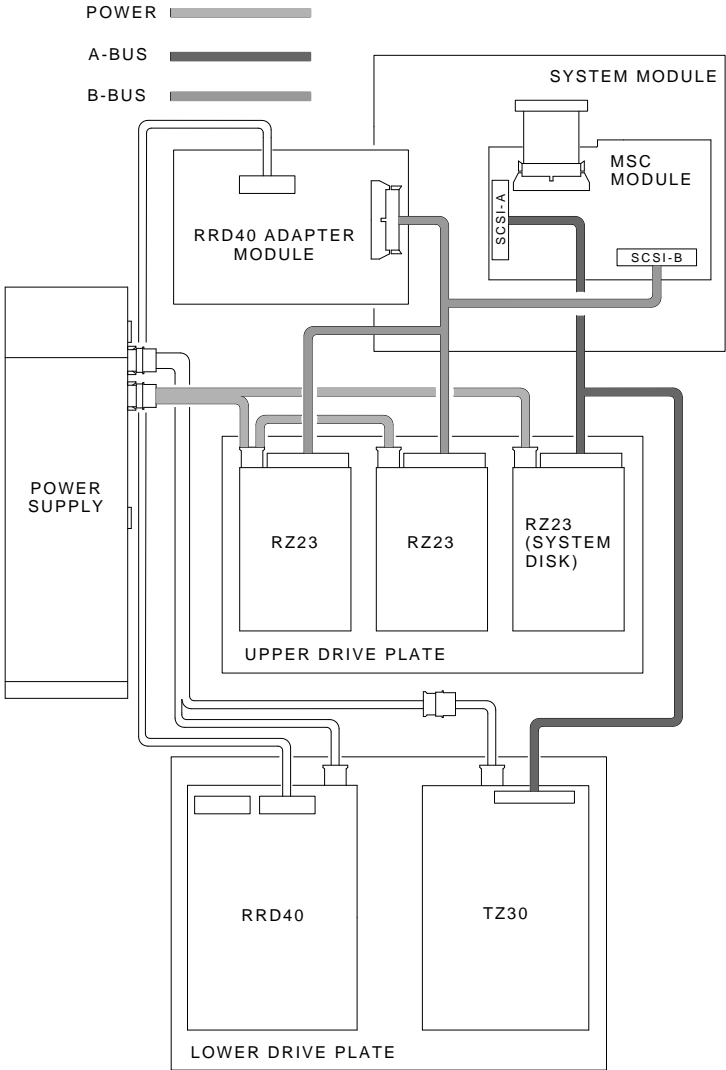
2. Slide the cover forward and up off the system box.

#### Remove the Upper Drive Plate

##### CAUTION

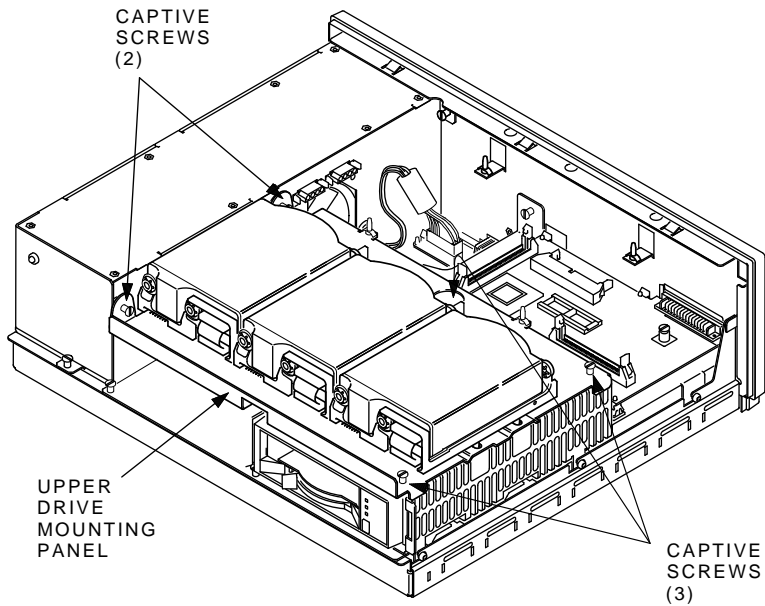
**You must note which cables connect to which drive when disconnecting them from the system. Write the type of drive and its position on a piece of tape and wrap the tape around the connector before disconnecting it. This will help you when reinstalling the drives.**

- 1. Disconnect the power cables and the SCSI bus cables from the drives on the upper drive plate.



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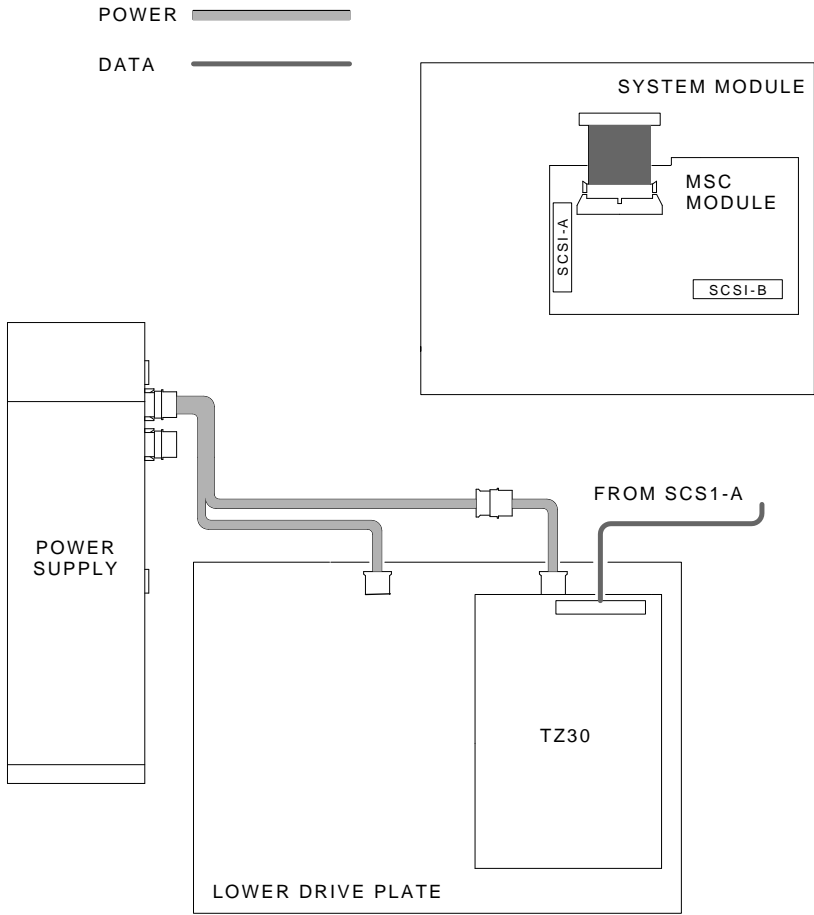
2. Remove the RRD40 adapter module from the four standoffs (if installed).
3. Unscrew the five screws on the upper drive mounting panel and lift the top panel from the lower panel.



MA-X0536-89

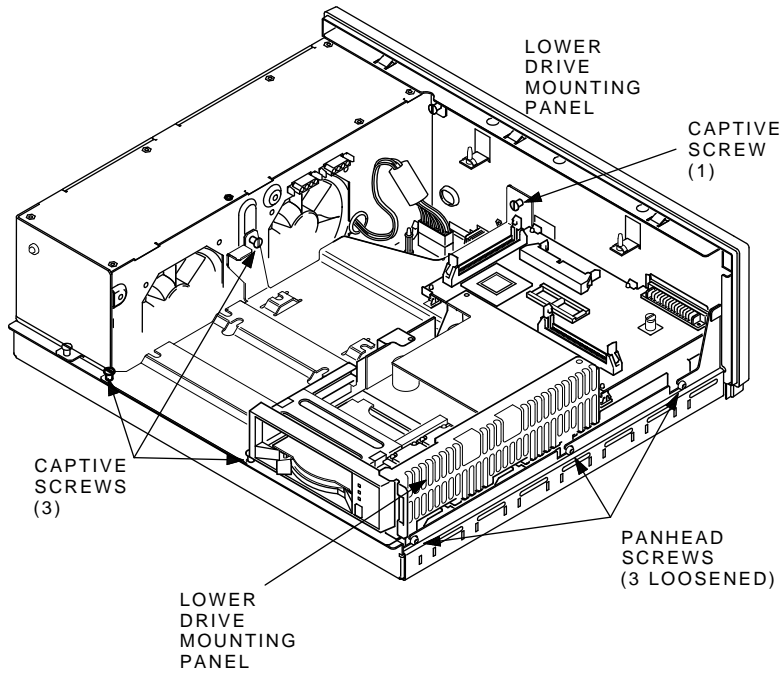
**Remove the Lower Drive Plate**

- 1. Disconnect the power cable from the TZ30 tape drive (if installed) and disconnect the mass storage controller (MSC) cable.



80 Upgrading the Model 40

2. Unscrew the seven screws.



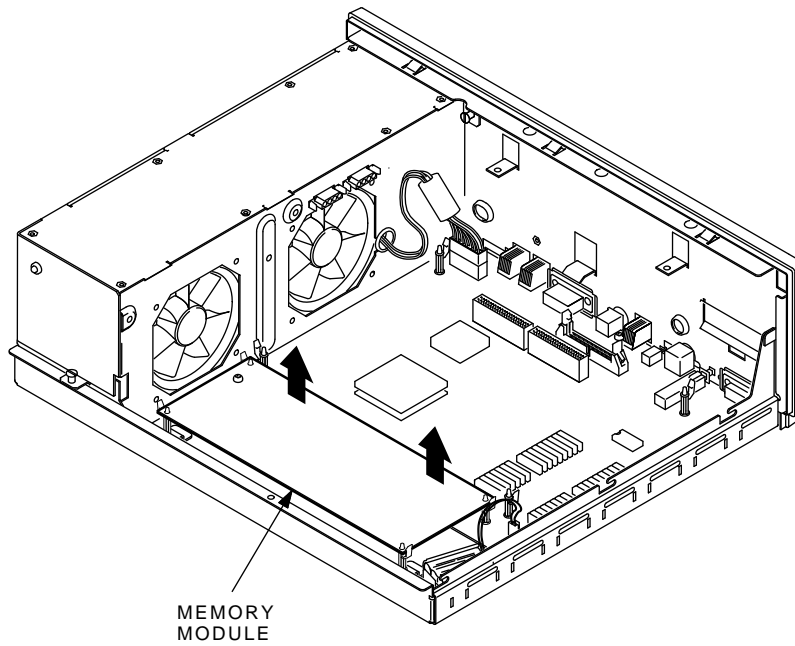
MA-X0538-89

3. Slide the plate forward, then lift the plate from the system box.



### Remove the Memory Module

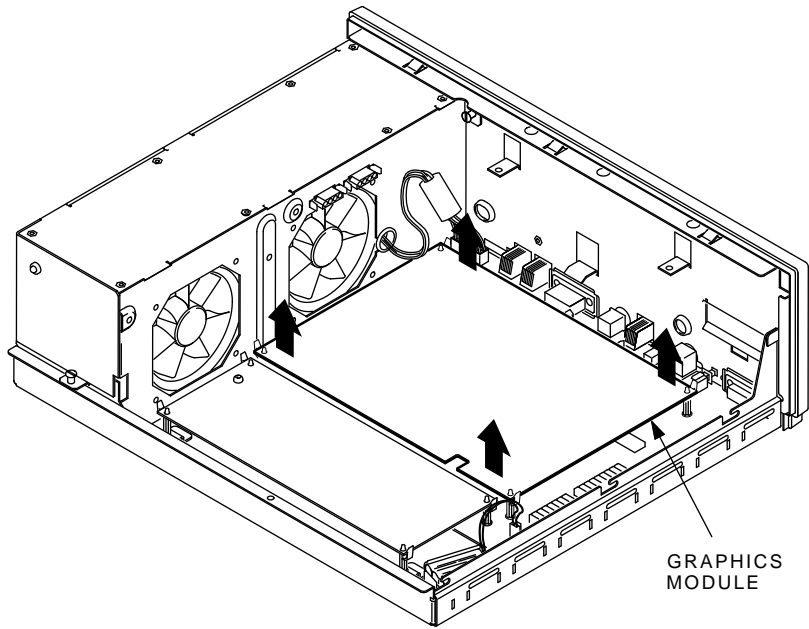
Remove the memory module from the four standoffs, then lift the memory module off the system module. Two connectors will disconnect as you lift the module.



MA-X0848-88

**Remove the Graphic Module (if present)**

Remove the graphic module from the four standoffs, then lift the graphic module off the system module. Two connectors will disconnect as you lift the module.



MA-X0847-88

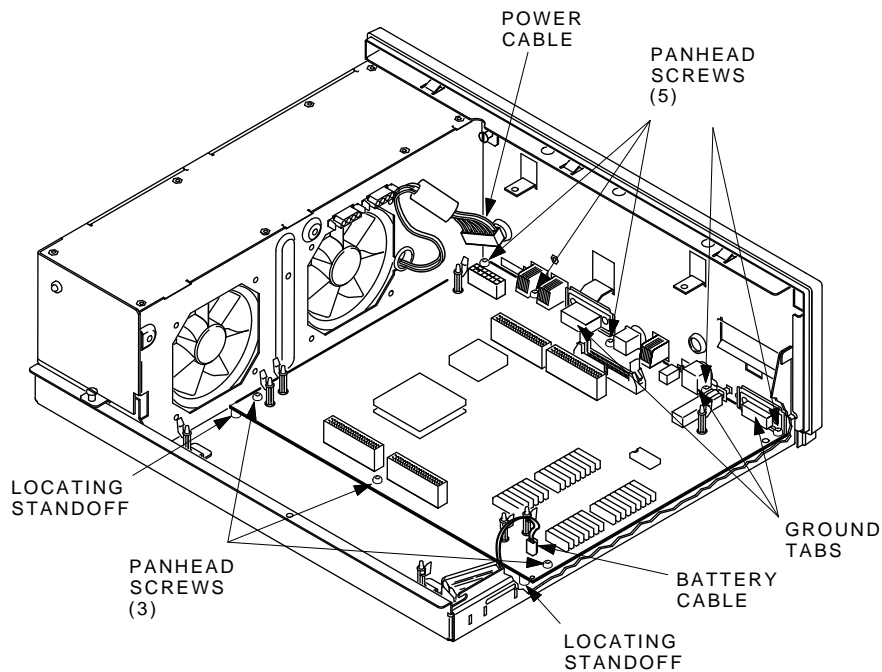
### Remove the System Module

1. Disconnect all cables from the back of the system box.
2. Disconnect the MSC cable from the system module.

#### NOTE

**Before disconnecting the power cable in the next step, be sure to release the connector latch on the back side of the power connector.**

3. Disconnect the power cable and the battery cable from the system module.



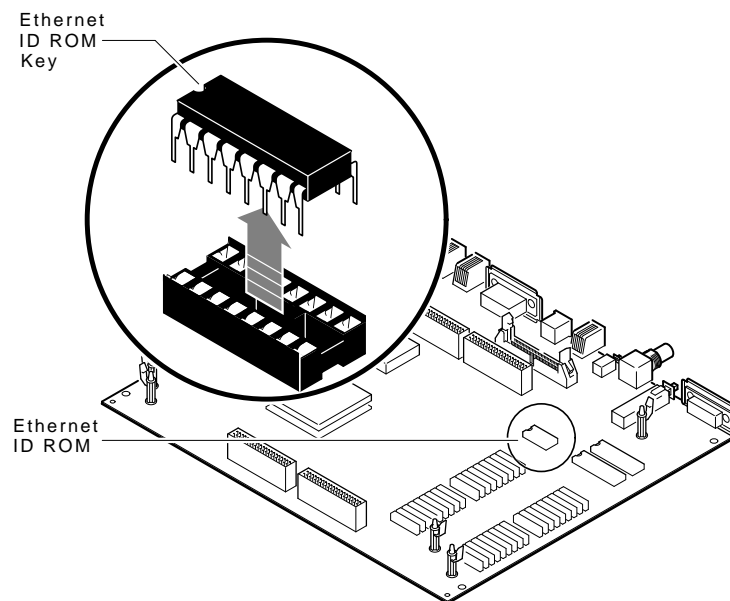
MA-X0849-88A

4. Remove the system module by carefully popping off the two front corners of the two locating standoffs.

**CAUTION**

**In the next step, be careful not to bend the pins on the Ethernet ID ROM.**

5. Remove the Ethernet ID ROM from the system module you removed. Check the position of pin 1 (notched) on the ROM. Install the ID ROM on the new system module in the kit.



MLO-002918  
MA-X0872-89

### 4.3 Installing the Modules

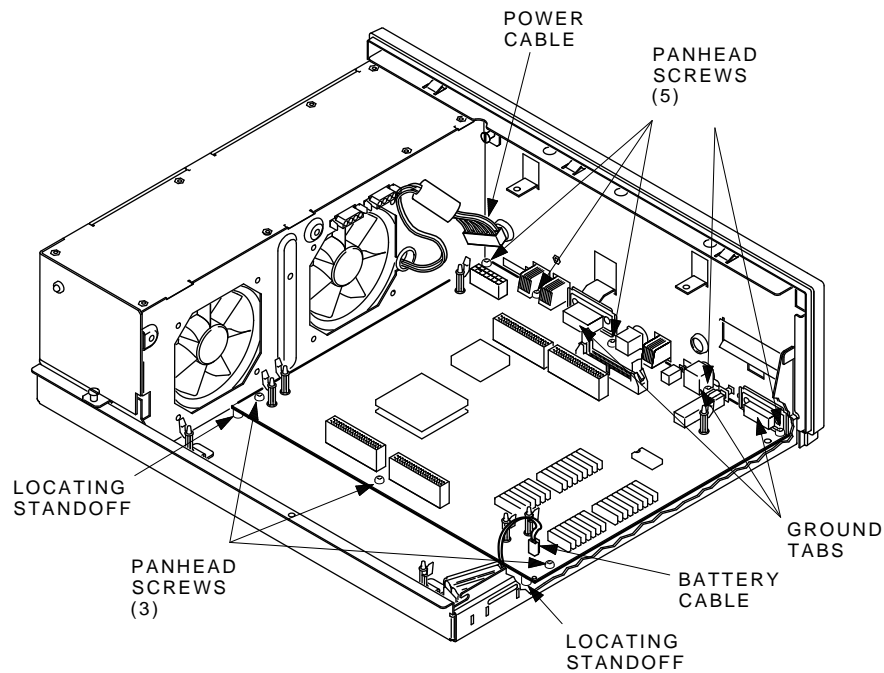
To install the modules:

#### Install the New System Module

**NOTE**

**When reinstalling the system module, install the connector end first through the openings in the rear of the box. Push the module back to load the connector ground tabs. Snap the module on both locating standoffs. All screw holes will then be aligned.**

1. Check the position of the S3 switch next to the LEDs on the back of the system module. Be sure S3 is in the down position (the down position enables the monitor to be the console and the up position enables a terminal connected to the printer port to be the console).
2. Install the connector end of the system module first through the openings in the rear of the box. Push the module back to load the connector ground tabs, then snap the module on both locating standoffs. All screw holes will then be aligned.
3. Install the eight screws on the system module.



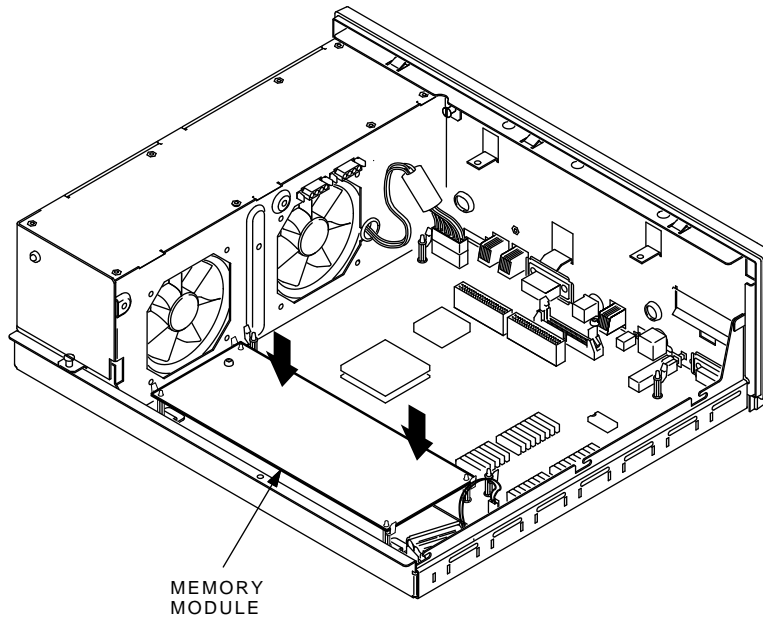
MA-X0849-88A

4. Connect the power cable and the battery cable to the system module.
5. Reconnect all cables to the back of the system box.

### Reinstall the Memory Module

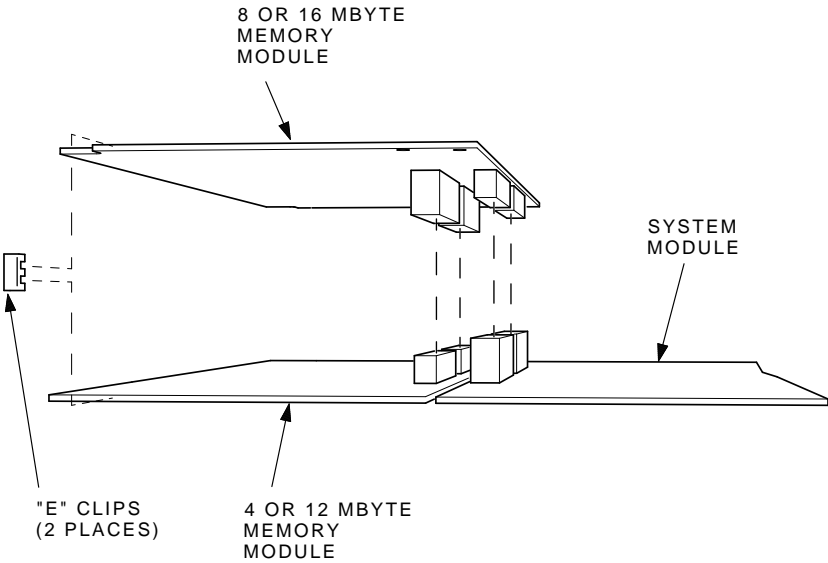
Install the memory module(s) on the new system module as shown in the following two figures. The first figure is for 4 or 12 Mbyte (single) memory module installation; the second figure is for 8 or 16 Mbyte (dual) memory module installation. After the module(s) are installed, press down on top of the module's connectors to firmly seat the connectors.

#### 4 or 12 Mbyte Memory Module Installation



MA-X0848-88A

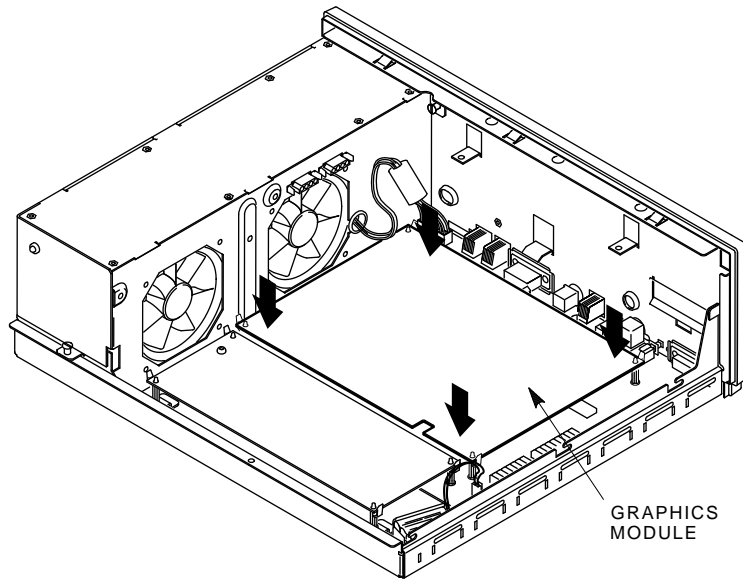
**8 or 16 Mbyte Memory Module Installation**



MA-X1174-88A

**Reinstall the Graphics Module (if present)**

Reinstall the graphics module on the new system module. After the module is installed, press down on top of the module's connectors to firmly seat the connectors.

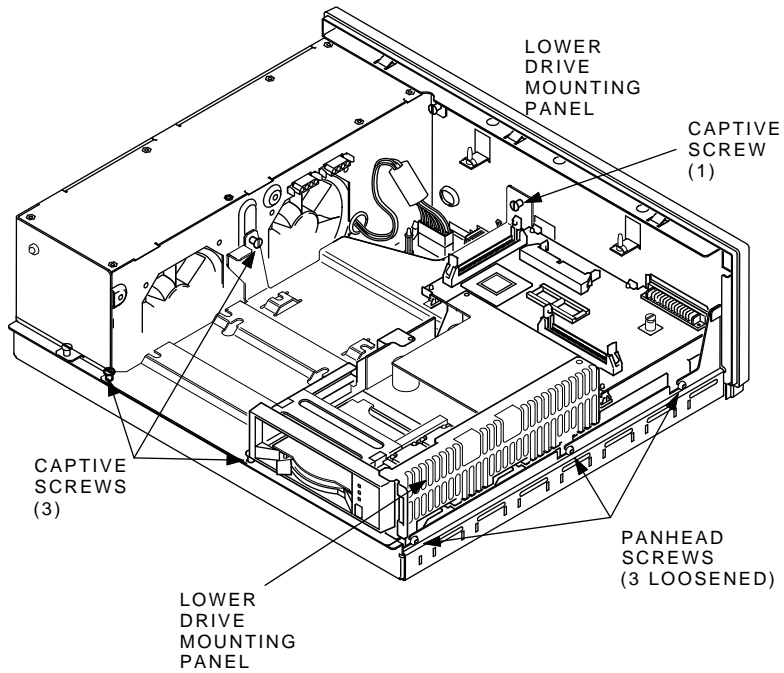


MA-X0847-88A



### Reinstall the Lower Drive Plate

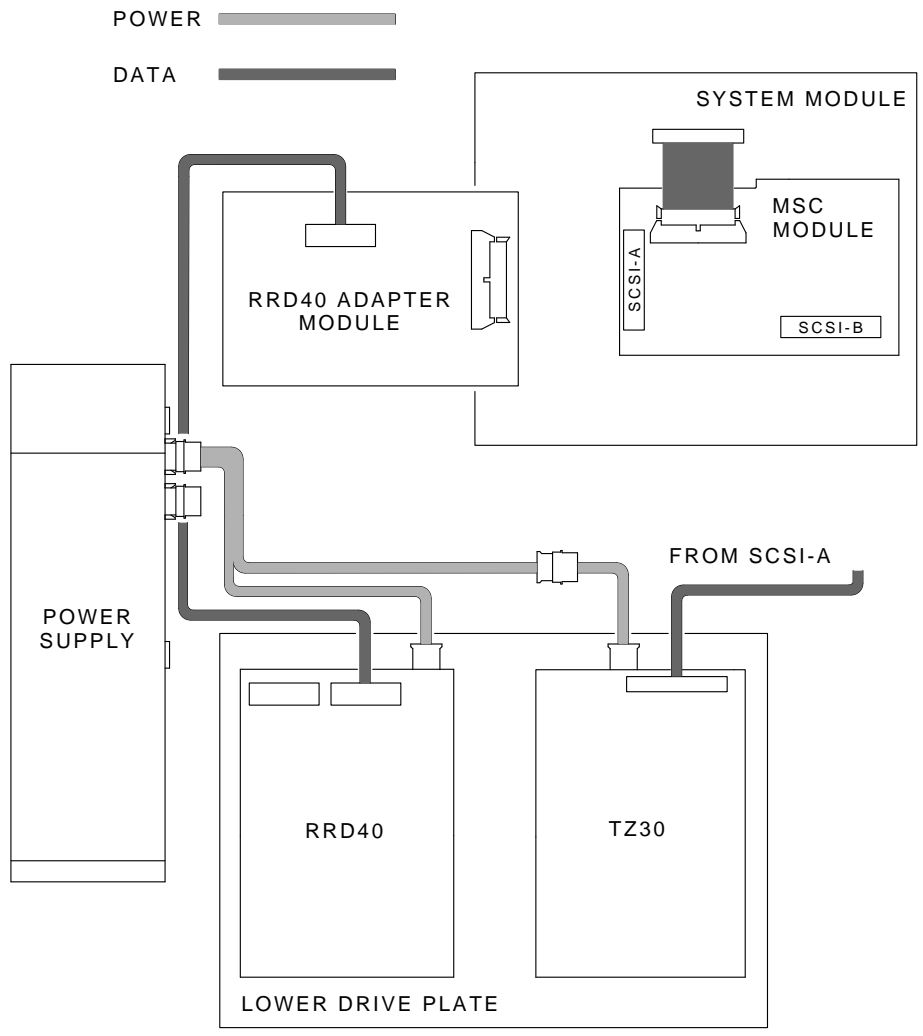
1. Connect the MSC cable to the new system module.
2. Position the lower drive mounting plate and tighten the seven screws.



MA-X0538-89

3. Connect the data cable from the RRD40 adapter module to the RRD40 compact disk drive.

4. Connect the SCSI bus cables and the power cables to the TZ30 (if installed) and connect the power cable to the RRD40 compact disk drive.

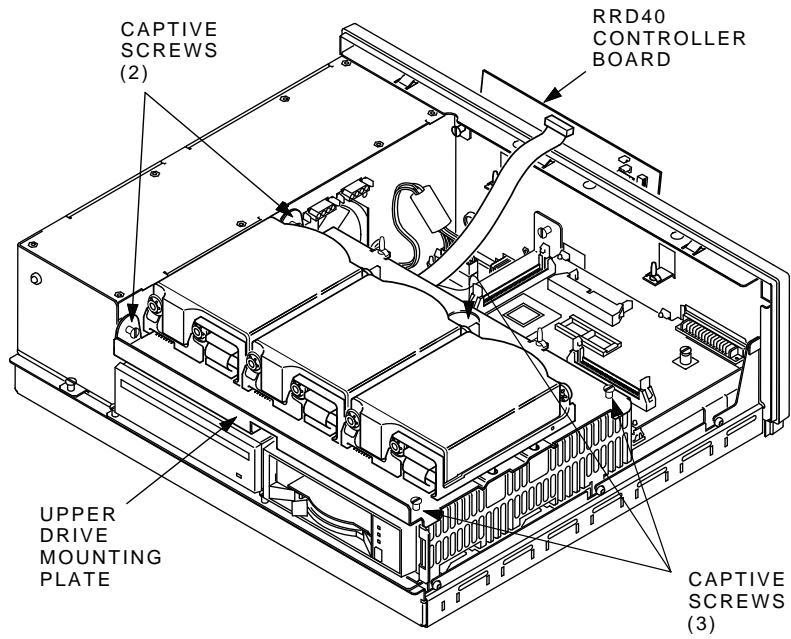


MA-X0815-88

5. Connect the MSC cable to the MSC module.

### Reinstall the Upper Drive Plate

1. Position the upper mounting drive plate on the system box and tighten the five screws.

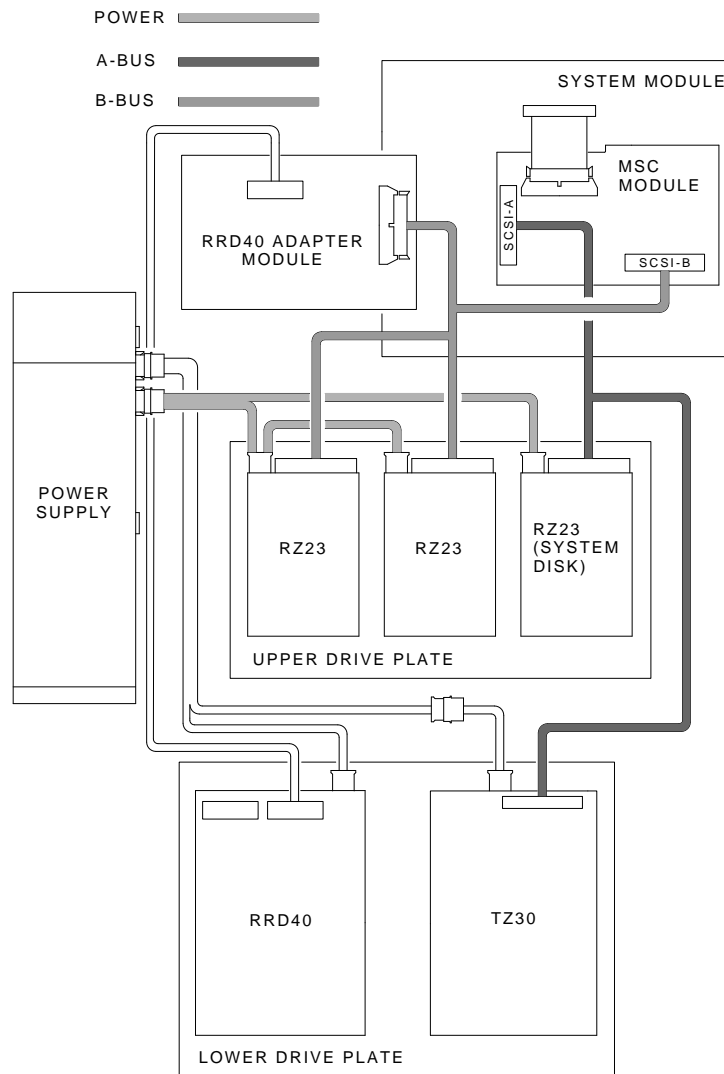


MA-X0859-88

2. Mount the RRD40 adapter module on the four standoffs.

### Reconnect the Upper Drive Plate Cables

Connect the SCSI bus cables and the power cables to any and all RZ23s and connect the SCSI bus to the RRD40 adapter module.



## 4.4 Replacing the MSC Module

To replace the MSC module:

### Remove the MSC Module

1. Remove the RRD40 adapter module from the four standoffs.
2. Disconnect the SCSI cables from both SCSI port A and B.
3. Disconnect the MSC cable from the MSC module.
4. Unscrew the captive screw on the MSC module.
5. Remove the MSC module from the drive plate.

### Install the New MSC Module

1. Snap the MSC module in place on the drive plate.
2. Tighten the captive screw on the MSC module.
3. Reconnect the SCSI port A and B cables to the MSC module.
4. Mount the RRD40 adapter module on the four standoffs.

## 4.5 Changing the Medallion

To change the medallion:

1. Remove the VAXstation 3100 medallion from the system box cover.
2. Install the new VAXstation 3100 M 48 medallion from the kit in the cover.

## **4.6 Installing the Upgrade Label**

Install the upgrade label from the kit on the back of the system box. Be sure not to cover over any existing labels.

## **4.7 Reinstalling the System Box Cover**

To reinstall the system box cover:

1. Install the system box cover and tighten the two cover screws.
2. Refer to Chapter 1 of the maintenance guide. Run a self-test and the system exerciser on the new drive to verify its status.

## **4.8 Completing the Installation**

The VAXstation 3100 replaced components as well as the excess materials (if any) from the upgrade kit are the property of Digital. You and the customer will need to fill out the upgrade forms in Appendix A and return them to the appropriate locations, as described in Appendix A.

# A

## Upgrade and Return Forms

---

The Customer Service Engineer who performs the upgrade must complete two of the three types of forms in this Appendix. The third form must be completed by both the customer and the Customer Service Engineer as described below.

- The Customer Service Engineer must return the Customer Service Upgrade Worksheet to the local contracts administrator.
- The Customer Service Engineer must return one copy of the Customer Service Installation Receipt to the local CAS group and give one copy to the customer.
- The Customer Service Engineer must work together with the customer to insure that the hardware is packaged properly for the return and that the proper return forms in this appendix are filled out.
  - a. Have the customer return one copy of the Returns Material Checklist with all modules and hardware that must be returned.
  - b. Have the customer contact CAS to verify the RA number and to notify CAS that equipment is ready to be returned.

CAS will then contact US Area Distribution to arrange for pick-up by a courier service. The return status will be monitored by Sales and CAS on a regular basis. Sales/DOM will authorize enforcement of additional charge in the event of a non-return (usually if equipment is not returned within 60 days).

### Labor Activity Reporting

Use the labor code UPG31 for all labor activity reporting on all four of the upgrade kits.

---

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/HARDWARE REMOVED:    MODULES/HARDWARE REPLACED:

- |           |           |
|-----------|-----------|
| 1. _____  | 1. _____  |
| 2. _____  | 2. _____  |
| 3. _____  | 3. _____  |
| 4. _____  | 4. _____  |
| 5. _____  | 5. _____  |
| 6. _____  | 6. _____  |
| 7. _____  | 7. _____  |
| 8. _____  | 8. _____  |
| 9. _____  | 9. _____  |
| 10. _____ | 10. _____ |
| 11. _____ | 11. _____ |
| 12. _____ | 12. _____ |
| 13. _____ | 13. _____ |
| 14. _____ | 14. _____ |
| 15. _____ | 15. _____ |
-





98 Upgrade and Return Forms

---

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: VAXstation 3100 Model 30 \_\_\_\_\_ VAXstation 3100 Model 40 \_\_\_\_\_  
(check one)

DATE INSTALLATION PERFORMED: \_\_\_\_\_

MODULES PACKAGED FOR RETURN: (fill in appropriate lines)

MODULE	SERIAL NUMBER
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
_____	_____

(Customer Signature)

(Customer Service Signature)



100 Upgrade and Return Forms

---

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: VAXstation 3100 Model 30 \_\_\_\_\_ VAXstation 3100 Model 40 \_\_\_\_\_  
(check one)

DATE INSTALLATION PERFORMED: \_\_\_\_\_

MODULES PACKAGED FOR RETURN: (fill in appropriate lines)

MODULE	SERIAL NUMBER
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
_____	_____

(Customer Signature)

(Customer Service Signature)



102 Upgrade and Return Forms

---

RETURNS MATERIAL CHECKLIST

---

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

DATE \_\_\_\_\_

RETURN AUTHORIZATION NUMBER: \_\_\_\_\_

CUSTOMER DEC NUMBER: \_\_\_\_\_

CUSTOMER (COMPANY) NAME: \_\_\_\_\_

CUSTOMER ADDRESS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

CUSTOMER CONTACT: \_\_\_\_\_

CUSTOMER TELEPHONE NUMBER: \_\_\_\_\_

Include This Form With the Modules/Hardware Returned

---

MODULES/HARDWARE BEING RETURNED

1. \_\_\_\_\_ 9. \_\_\_\_\_

2. \_\_\_\_\_ 10. \_\_\_\_\_

3. \_\_\_\_\_ 11. \_\_\_\_\_

4. \_\_\_\_\_ 12. \_\_\_\_\_

5. \_\_\_\_\_ 13. \_\_\_\_\_

6. \_\_\_\_\_ 14. \_\_\_\_\_

7. \_\_\_\_\_ 15. \_\_\_\_\_

8. \_\_\_\_\_ 16. \_\_\_\_\_



104 Upgrade and Return Forms

---

RETURNS MATERIAL CHECKLIST

---

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

DATE \_\_\_\_\_

RETURN AUTHORIZATION NUMBER: \_\_\_\_\_

CUSTOMER DEC NUMBER: \_\_\_\_\_

CUSTOMER (COMPANY) NAME: \_\_\_\_\_

CUSTOMER ADDRESS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

CUSTOMER CONTACT: \_\_\_\_\_

CUSTOMER TELEPHONE NUMBER: \_\_\_\_\_

Include This Form With the Modules/Hardware Returned

---

MODULES/HARDWARE BEING RETURNED

1. \_\_\_\_\_ 9. \_\_\_\_\_

2. \_\_\_\_\_ 10. \_\_\_\_\_

3. \_\_\_\_\_ 11. \_\_\_\_\_

4. \_\_\_\_\_ 12. \_\_\_\_\_

5. \_\_\_\_\_ 13. \_\_\_\_\_

6. \_\_\_\_\_ 14. \_\_\_\_\_

7. \_\_\_\_\_ 15. \_\_\_\_\_

8. \_\_\_\_\_ 16. \_\_\_\_\_





106 Upgrade and Return Forms

---

RETURNS MATERIAL CHECKLIST

---

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

DATE \_\_\_\_\_

RETURN AUTHORIZATION NUMBER: \_\_\_\_\_

CUSTOMER DEC NUMBER: \_\_\_\_\_

CUSTOMER (COMPANY) NAME: \_\_\_\_\_

CUSTOMER ADDRESS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

CUSTOMER CONTACT: \_\_\_\_\_

CUSTOMER TELEPHONE NUMBER: \_\_\_\_\_

Include This Form With the Modules/Hardware Returned

---

MODULES/HARDWARE BEING RETURNED

1. \_\_\_\_\_ 9. \_\_\_\_\_

2. \_\_\_\_\_ 10. \_\_\_\_\_

3. \_\_\_\_\_ 11. \_\_\_\_\_

4. \_\_\_\_\_ 12. \_\_\_\_\_

5. \_\_\_\_\_ 13. \_\_\_\_\_

6. \_\_\_\_\_ 14. \_\_\_\_\_

7. \_\_\_\_\_ 15. \_\_\_\_\_

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