BA400-Series Enclosures

Storage Devices
Installation Procedures

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Preface

This manual describes add-on installation procedures for the various storage
devices available for BA400-series system enclosures.

Structure of This Manual

Chapter 1 describes the installation of EF- and RZ-series integrated storage
elements.

Chapter 2 describes the installation of TLZ-series tape drives.

Chapter 3 describes the installation of RRD-series CD-ROM drives.

Chapter 4 describes the installation of RRD/TLZ07 dual ISE drives.

Chapter 5 describes the installation of TZ-series tape drives.

Appendix A contains a list of related documentation.

Intended Audience

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

1

EF- and RZ-Series Integrated Storage Elements

1.1 General

Figure 1–1 shows the EF-series integrated storage elements (ISE). Figure 1–2 shows the RZ-series ISEs in the 3.5-inch configuration. Note that the logic module is located on the right side for the RZ-series.

The two configurations vary as follows:

- EF-series ISEs are solid state disks.

- 3.5-inch RZ-series ISEs contain either one or two hard disk storage devices.

BA400-series ISEs contain hardware and a circuit module to allow the ISE to be plugged into the enclosure backplane.

--------------------- **Note** ---------------------

VAX 4000 systems do not support RZ-series ISEs unless an HSD05 or HSD10 option is installed.

Figure 1–1 EF-Series ISE (Front and Rear View)

Bracket Slides

Bracket Slides

Front View
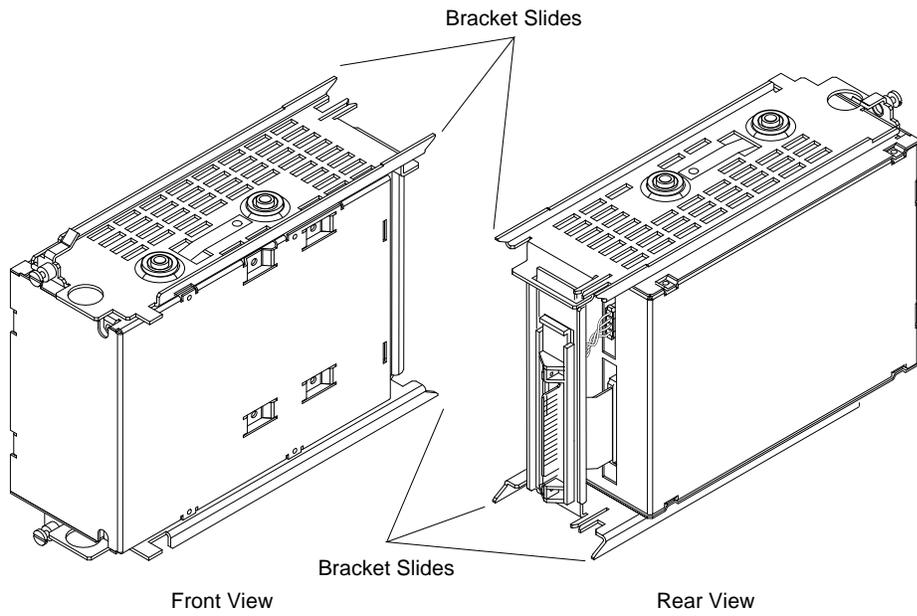
Rear View

MLO-009301

Figure 1–2   3.5-inch RZ-Series ISE (Rear View)

RZ-Series

From back of drive:
the screw hole is
offset to the right
for SCSI.

50-Pin Signal Cable

4-Pin Power Cable

MLO-011782
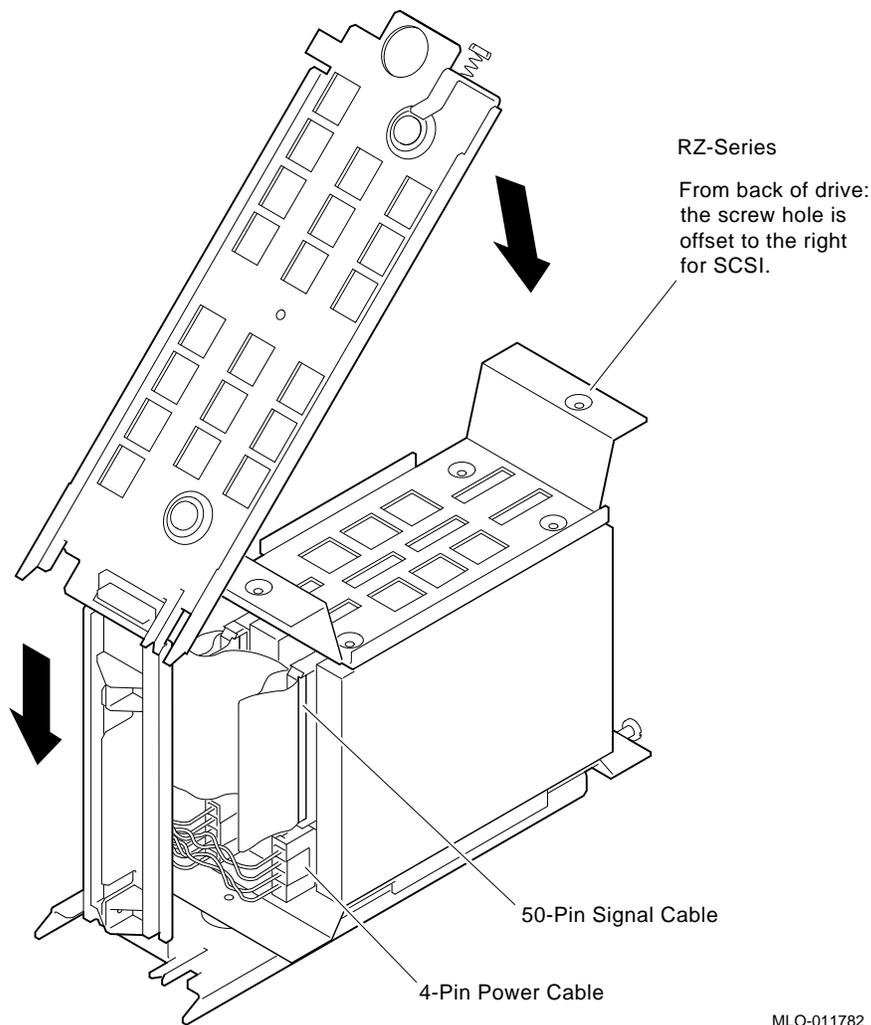
Figure 1–3 shows the front panel assembly that comes with the ISEs.

Figure 1–3   Front Panel Assembly

Phillips Screw

MLO-007236
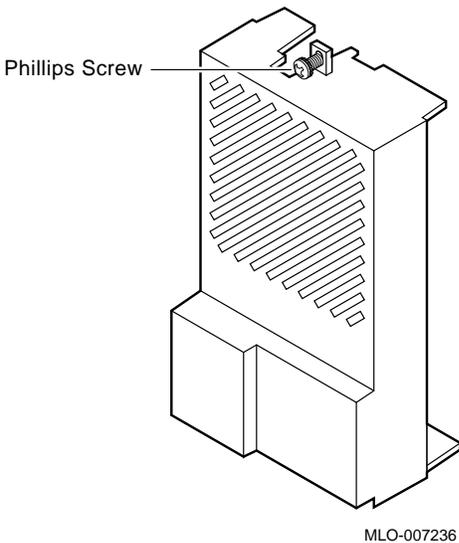
The term "Integrated Storage Element" (ISE) is used for any Digital Storage Systems Interconnect (DSSI) or Small Computer System Interface (SCSI) storage device. An ISE contains an on-board intelligent controller in addition to the drive and the control electronics.

The DSSI interface supports up to seven ISEs. DSSI interfaces can be embedded within a CPU module, such as the KA670 module. The DSSI interface can also be separate modules, such as the KFQSA, which is interfaced by a single cable to a DSSI connector in the host enclosure.

EF-series ISEs are DSSI-based solid state disk drives based on the Digital Storage Architecture (DSA).

RZ-series ISEs utilize the SCSI bus and interface. SCSI interfaces can be embedded within a CPU module, such as the KN220 module. The SCSI interface can also be separate modules, such as the HSD05 or HSD10, which are connected by a single cable to the system backplane in the host enclosure.

Note

Within a system enclosure it is possible to have up to seven disk
storage devices, provided there is no tape drive in the enclosure. There
can be three 3.5-inch dual storage devices and one 5.25-inch or one
3.5-inch single storage device.

For more detailed information about configuring EF- and RZ-series ISEs in
a BA400-series enclosure, refer to the appropriate enclosure maintenance
manual listed in Appendix A.

1.2 EF- and RZ-Series ISE Installation Preparation

EF- and RZ-series ISEs require that bus node ID jumpers be set on the drive before the ISE can be installed in a BA400-series enclosure.

When installing an EF- or RZ-series ISE, refer to the reference booklet or data sheet that is shipped with the ISE to set the proper bus node ID (DSSI/SCSI ID) jumpers. Also ensure that the TERM PWR and the TERM ENABLE jumpers are removed. Failure to remove the TERM ENABLE jumper will cause improper operation of the ISE.

_____ **Note** _____

Some of the ISEs have two sets of jumpers for setting the bus node ID. Refer to the reference booklet or data sheet that is shipped with the ISE to set the proper bus node ID on one set of jumpers only. Ensure that all of the jumpers are removed from the second set of device address (Node ID) jumper pins.

_____

In VAX 4000 systems, the SCSI termination and TERM PWR are provided by the controller module on one end of the bus and termination for the other end of the bus is provided by an external terminator.

_____ **Note** _____

Refer to Section 1.4.4 for bus node ID configuration guidelines.

_____

1.3 Installation Procedure

To install an EF- or RZ-series ISE in a BA400-series enclosure, perform the following procedures.

1.3.1 ISE Installation in an Empty Slot

_____ CAUTION _____

Static electricity can damage integrated circuits. Use the anti-static wrist strap and antistatic pad found in the static-protective field service kit (29-26246-00) when you work with the internal parts of a computer system.

Handle the ISE with care. Dropping or bumping the ISE can damage the disk surface. Carry or hold the ISE by the underside of the lower bracket to avoid damaging the drive module.

_____

1. After the system manager shuts down the operating system, set the lock to the bottom position to open both the top and bottom enclosure doors (Figure 1–9).

2. Set the power switch to off (0).

Figure 1–4 Power Switch Location

Power Switch
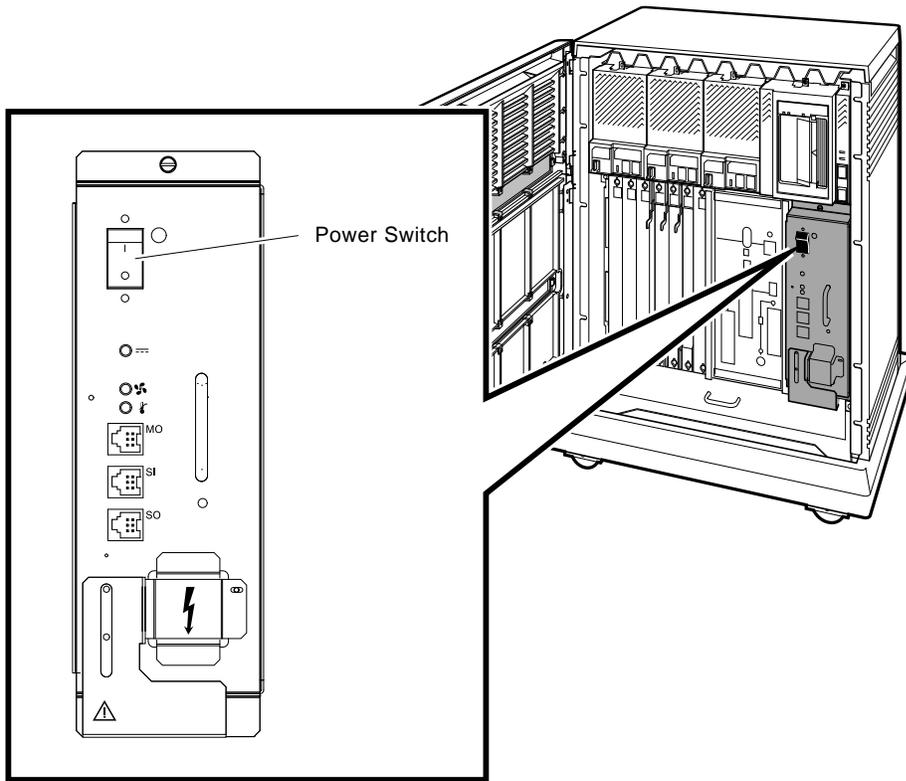
MLO-006627

3. Always install ISEs working from right to left (Figure 1–5).

Figure 1–5 BA440 Enclosure

Slot 3   Slot 2   Slot 1   Slot 0
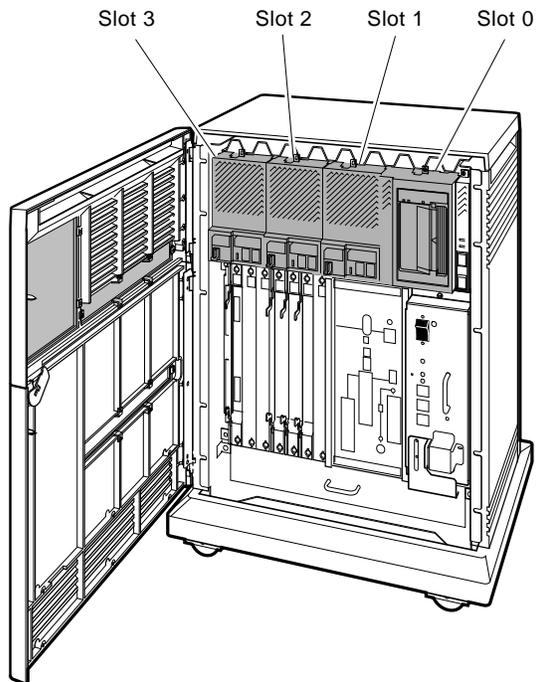
MLO-006528

_____ **NOTE** _____

The first (slot 0) mass storage cavity in the mass storage area is wider than the rest to accommodate a larger device, such as a tape drive. A small filler panel (70-27414-01) is used to fill the gap when an EF- or RZ-series ISE is installed in this first cavity.

4. Loosen the captive Phillips screw that secures the blank ISE front panel
    assembly (Figure 1–6), and remove the panel.

Figure 1–6   Blank Front Panel Assembly

Phillips Screw

MLO-007236
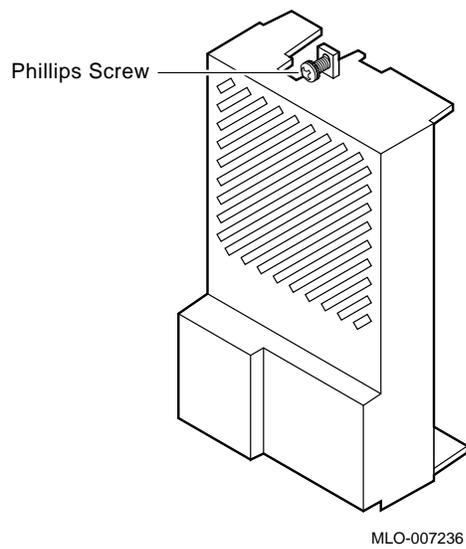
5. For 5.25-inch EF-series ISEs, remove the plastic skid plate from the right side (remove the four screws) of the device (Figure 1–7). Discard the skid plate.

Figure 1–7 Removing the Plastic Skid Plate from the EF-Series ISE

Skid Plate

Screws

Screws
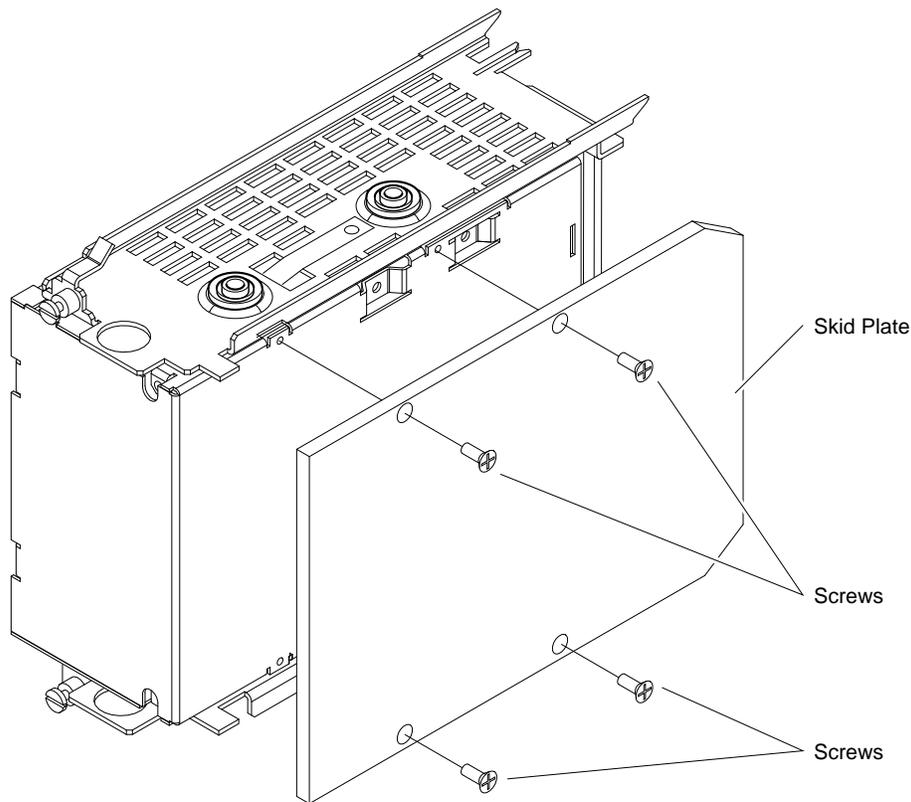
MLO-009302

6. For the EF-series ISEs, with the side that had the skid plate attached to it facing to the right, slide the ISE along the guide rails into the mass storage cavity (Figure 1–8A).

For 3.5-inch RZ-series ISEs: with the ISE controller module facing to the right, slide the ISE along the guide rails into the mass storage cavity (Figure 1–8A).

Figure 1–8 Installing the ISE in the Storage Cavity

Captive Screws

A

Phillips Screw

B

Guide Tabs

Finger Cutouts

Front Panel
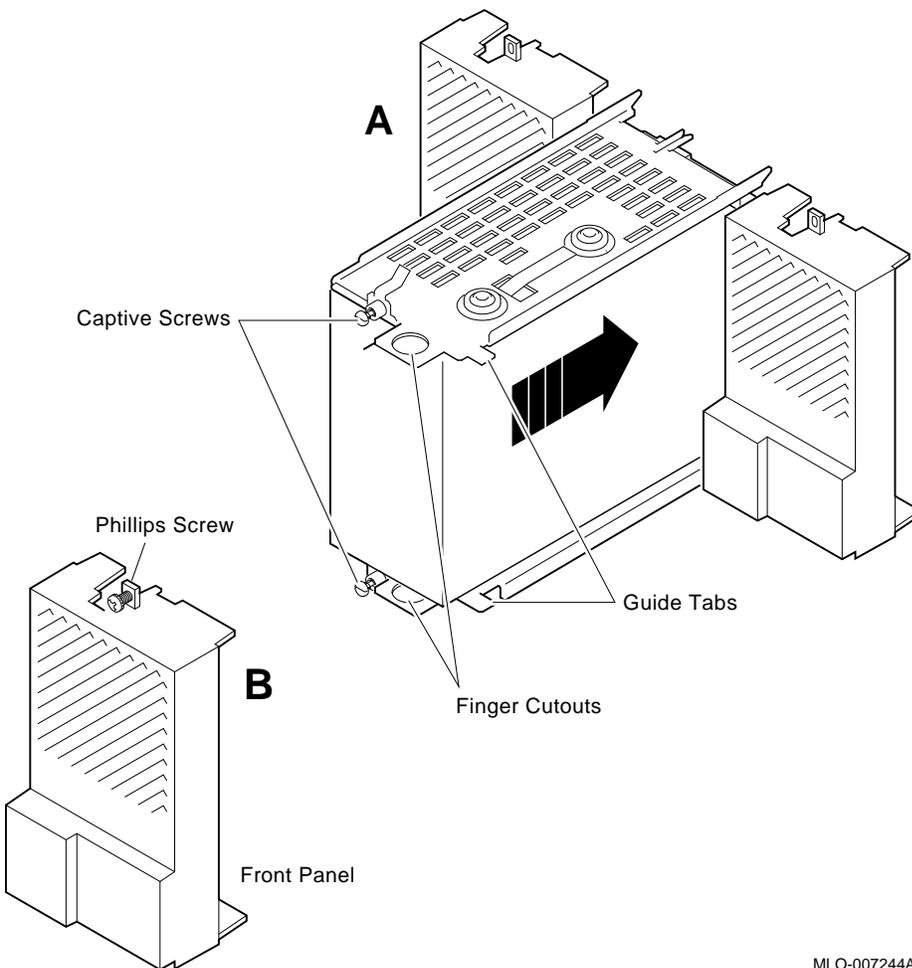
MLO-007244A

7. Refer to Figure 1–8A and install the ISE.

√   Using the tabs in front of upper and lower finger cutouts, firmly push
     the ISE brackets until the interface card at the rear of the storage
     device plugs into its backplane connector. The guide tabs on the upper
     and lower bracket should line up with the cutouts in the chassis.

8. Tighten the two captive screws at the top and bottom of the bracket.

―――――――――――――――― **CAUTION** ――――――――――――――――

It is normal for there to be a small gap between the ISE mounting bracket tabs and the enclosure frame. Tighten the captive screws only until they are securely fastened (9 inch-pounds). Do not try to force the tabs to fit flush against the frame.

――

9. Attach the ISE front panel to the enclosure by first fitting the panel's lower tabs into position.

   √ Fit the panel into position and secure the panel with its single captive Phillips screw (Figure 1–8B).

1.4 Upgrading the ISE Storage Devices

The system's storage capacity can be increased by:

- Replacing an ISE with one that has a larger storage capacity
- Installing a second storage device on a 3.5-inch ISE

The following sections describe how to upgrade the ISE storage devices.

1.4.1 Removing ISEs

To upgrade a system, it may be necessary to remove an ISE. To remove an ISE, use the following procedures.

CAUTION

Static electricity can damage integrated circuits. Always use the antistatic wrist strap and antistatic pad found in the static-protective field service kit (29-26246-00) when working with the internal parts of a computer system.

Handle ISEs with care. Dropping or bumping the ISE can damage the disk surface. Carry or hold the ISE by the underside of the lower metal bracket to avoid damage to the drive module.

---

1. After the system manager shuts down the operating system, set the lock to the bottom position to open both the top and bottom enclosure doors (Figure 1–9).

2. Set the Power switch to off (0).

**Figure 1–9   Keylock Positions**

Key Lock

Top Key Position

Power Switch

Bottom Key Position
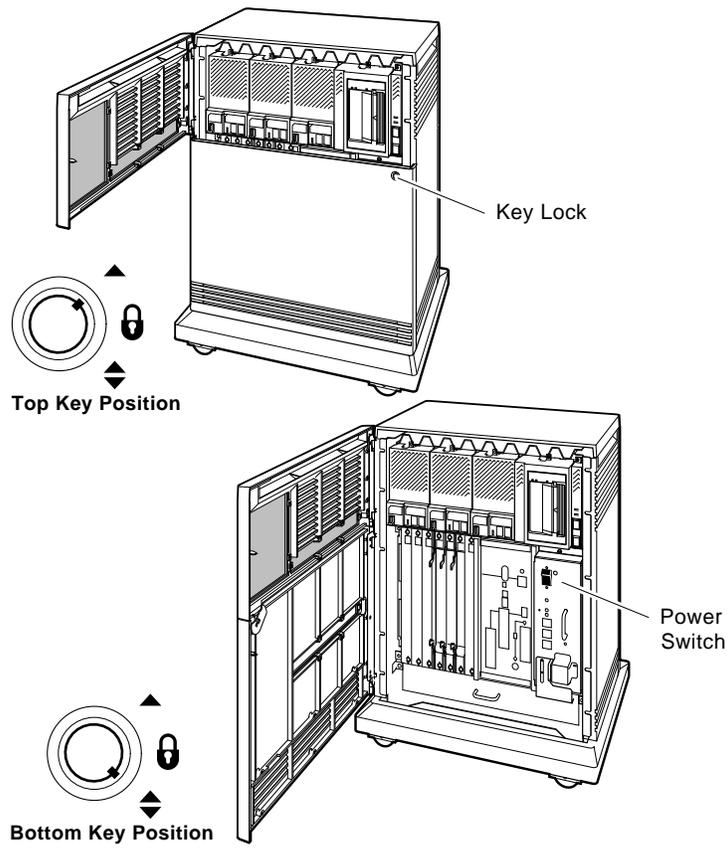
MLO-012859

3. Loosen the captive Phillips screw that secures the ISE front panel and remove the panel (Figure 1–10/Step 1).

4. Loosen the upper and lower captive screws that hold the ISE in place (Figure 1–10/Step 2).

5. Using the upper and lower finger cutouts on the ISE brackets, carefully pull the ISE out of its backplane connector and slide the drive out of the enclosure. Support the weight of the ISE at the underside of the lower bracket as the ISE clears the enclosure (Figure 1–10/Step 3).

———————————————— **CAUTION** ————————————————

Do not touch the drive module. The drive module contains sensitive electronic circuitry.

_____

If you are not upgrading a 3.5-inch ISE with a second storage device, go to Section 1.4.3.

Figure 1–10   Removing the ISE to Be Upgraded or Replaced

2
Captive Screws
(loosen)

1 Phillips Screw

4

Guide Tabs

3

Finger Cutouts
(pull)

Front Panel

MLO-007247A
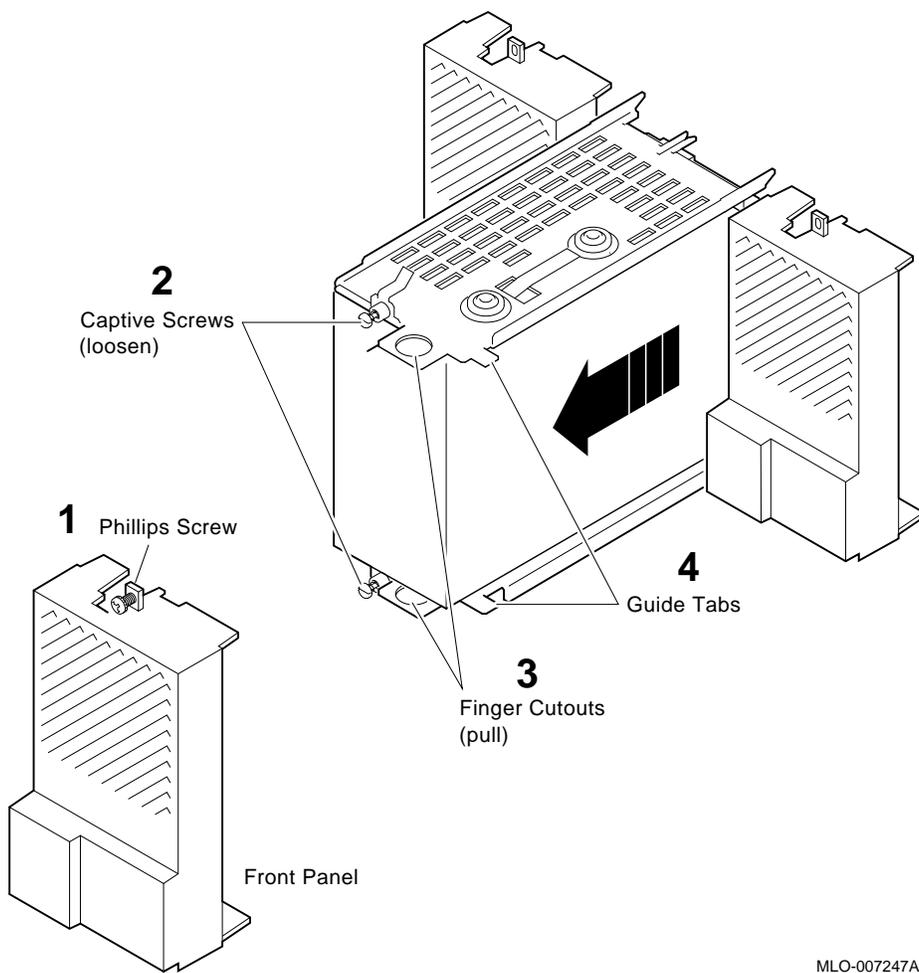
1.4.2 Installing a Second Storage Device in a 3.5-inch ISE

The upgrade kit for the 3.5-inch ISE contains the following:

- Storage device

- Mounting hardware—four Phillips screws

- *BA400-Series Enclosures Storage Devices Installation Procedures*

- Drive reference booklet or data sheet

The following sections describe how to install a second storage device in a 3.5-inch ISE.

1.4.2.1 Remove the Top Outside Bracket

Complete the following steps to remove the top outside bracket from the ISE.

_____ **Note** _____

Note the orientation of the mounting bracket before you take it apart (refer to Figure 1–2).

_____

1. Remove the two mounting screws on the top outside bracket and put them aside.

2. Push up the plastic flange of the interface card assembly, and lift the top outside bracket's rear slot over the plastic flange.

3. Unplug the power cable and the 50-pin signal cable from their connectors on the ISE controller module (Figure 1–11).

Figure 1–11 Removing the Top Outside Bracket from the ISE

Top Bracket

From back of drive: the screw hole is offset to the right for SCSI.

Tab

Flange

Interface Card Assembly

50-Pin Signal Cable

4-Pin Power Cable

MLO-011783
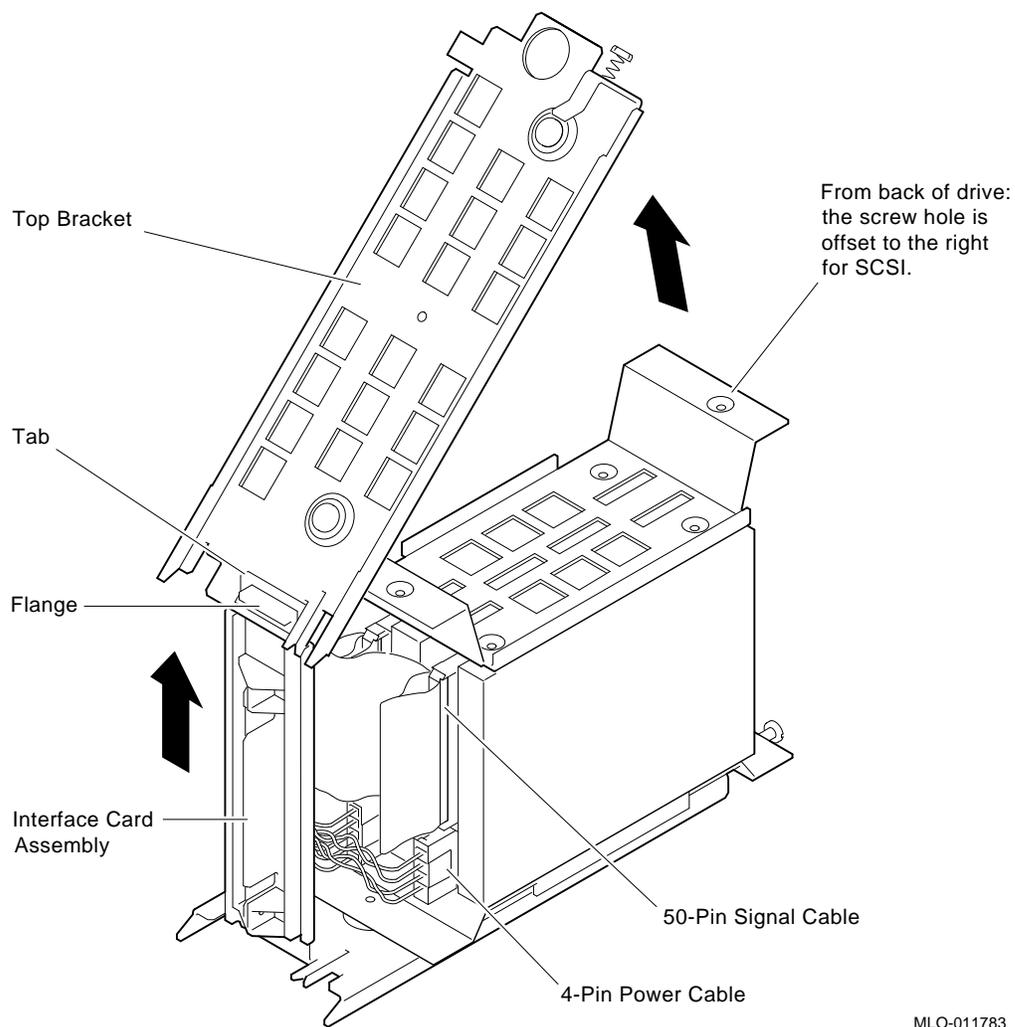
4. Gently turn the storage device upside down so that it rests on the top inside bracket.

5. After removing both mounting screws on the bottom outside bracket, set the bracket and the screws aside.

1.4.2.2 Installing the New Storage Device

Note

Before installing an RZ-series ISE, ensure that the bus node ID
jumpers are properly set and that the TERM ENABLE jumper is
removed. Some of the ISEs have two sets of jumpers for setting the bus
node ID. Refer to the reference booklet or data sheet that is shipped
with the ISE to set the proper bus node ID on one set of jumpers only.
Ensure that all of the jumpers are removed from the second set of
device address (Node ID) jumper pins.

Complete the following procedures to install a new storage device:

1. Secure the bottom inside bracket and the top inside bracket to the storage
   device using the screws provided in the upgrade kit (Figure 1–12).

2. Reinstall the bottom outside bracket and then the top outside bracket.

3. Connect the power and signal (50-pin) cables to both drives.

Figure 1–12 Installing the Phillips Screws That Secure the Storage Device to the Inside Brackets
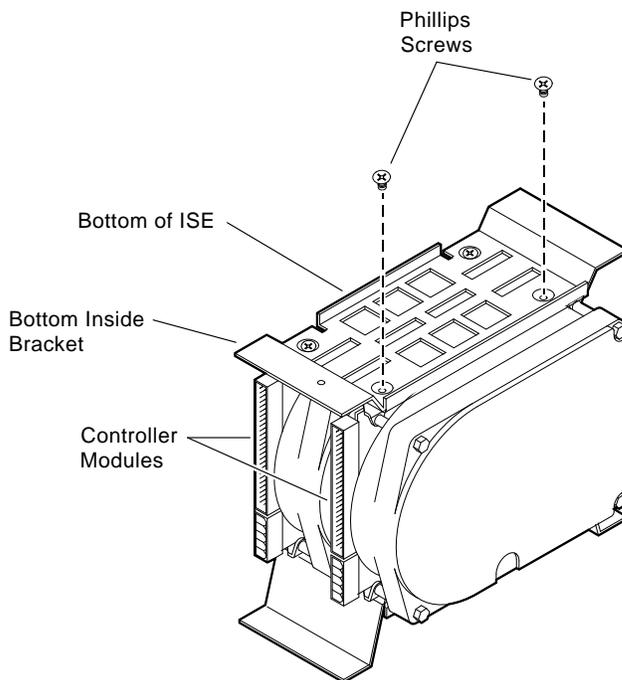
MLO-007246

Installation Notes

When you install the new drive, be sure to complete the following:

1. Align the new storage device in the same orientation as the original device.

2. When reinstalling the top outside bracket, lift the bracket's rear slot over the flange of the plastic interface card assembly, and then over the tab at the back of the bottom outside bracket. Both the tab and the flange must be inside the rear slot of the top outside bracket.

3. Make sure that the grounding foil is in place under the front mounting screw on the bottom outside bracket.

1.4.3 Installing Upgraded ISEs in the Mass Storage Cavity

To install a 5.25-inch ISE upgrade or an upgraded 3.5-inch ISE, complete the following procedure:

1. For the EF-series ISEs, with the side that had the skid plate attached to it facing to the right, slide the ISE along the guide rails into the mass storage cavity (Figure 1–13A).

   For 3.5-inch RZ-series ISEs: with the ISE controller module facing to the right, slide the ISE along the guide rails into the mass storage cavity (Figure 1–13A).

2. Refer to Figure 1–13A and install the ISE.

   √ Using the tabs in front of upper and lower finger cutouts, firmly push the ISE brackets until the interface card at the rear of the storage device plugs into its backplane connector. The guide tabs on the upper and lower bracket should line up with the cutouts in the chassis.

3. Tighten the two captive screws at the top and bottom of the bracket.

   _____ **CAUTION** _____

   It is normal for there to be a small gap between the ISE mounting bracket tabs and the enclosure frame. Tighten the captive screws only until they are securely fastened (9 inch pounds). Do not try to force the tabs to fit flush against the frame.

   _____

4. Attach the ISE front panel to the enclosure by first fitting the panel's lower tabs into position. Fit the panel into position and secure the panel with its single captive Phillips screw (Figure 1–13B).

Figure 1–13   Installing the ISE Upgrade in the Storage Cavity

Captive Screws

Phillips Screw

Guide Tabs

Finger Cutouts

A

B

Front Panel
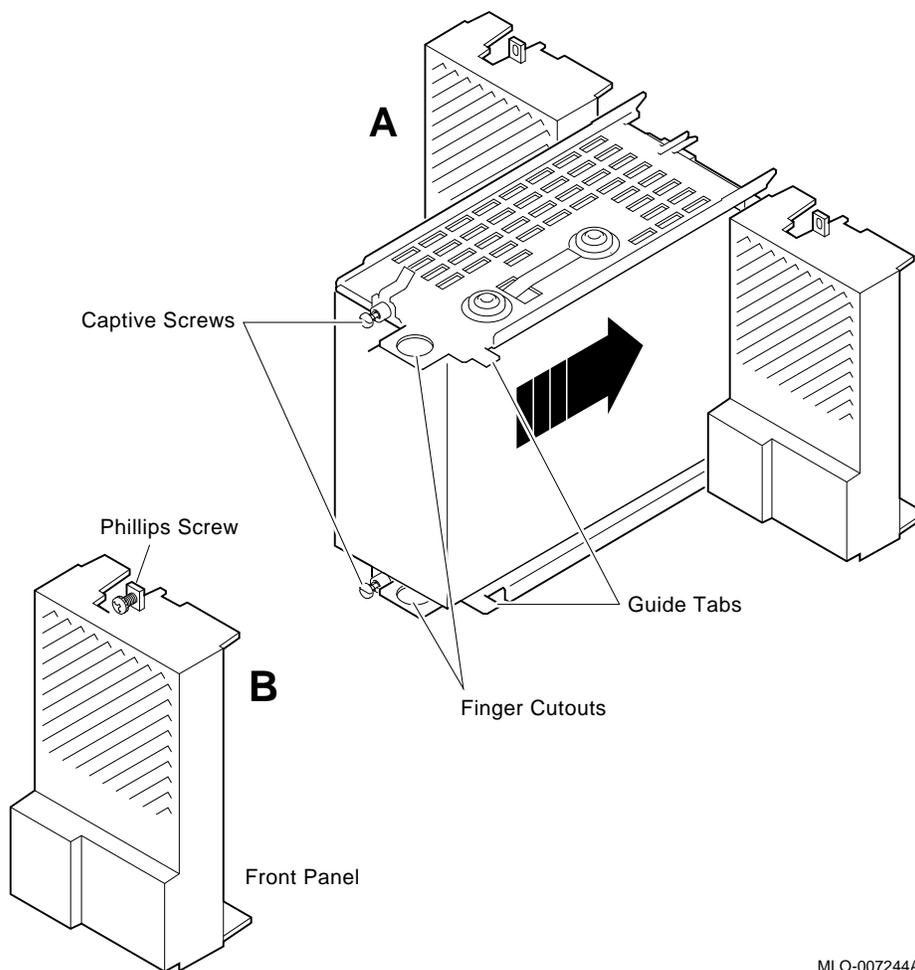
MLO-007244A

1.4.4 Bus Node ID Configuration Guidelines

The EF- and RZ-series ISEs require setting jumpers on the storage device for the bus node ID.

Use the following rules for assigning ID numbers to the EF- and RZ-series ISEs:

- For each DSSI bus or SCSI bus, do not duplicate bus node numbers for storage elements. You can have only one storage element on bus 0 identified as node 0, one storage element as node 1, and so on.

- By convention, the ISEs are numbered in increasing order from right to left, starting with 0.

1.5 Power-On Self-Test (POST)

Once the system is turned on, the EF-series and RZ-series ISEs go through a power-on self-test (POST).

1.5.1 EF-Series POST

POST for an EF-series ISE is executed whenever power is applied. The execution time for the test can be up to 15 seconds.

On the EF-series, POST performs the following:

- Tests the control module.

- Tests the memory modules.

- Checks the configuration of the hard disk.

POST detects the following types of error conditions:

- *Controller errors*—Caused by the hardware associated with the controller function of the drive module. These errors are fatal to the operation of the ISE since the controller cannot establish a logical connection to the host.

- *Device errors*—Caused by the hardware associated with the device control function of the drive module. These errors are not fatal since the ISE can establish a logical connection and report the error to the host.

If the ISE passes POST, continue to Section 1.6.

1.5.2 RZ-Series POST

POST for an RZ-series ISE is executed during power-up or from a host-initiated command. The execution time for the test should be less than two seconds. If the unit passes POST, it waits for a software command such as SHOW DEVICES. If POST fails, the device will not come on line and will not be listed in the device listing when the SHOW DEVICES command is issued.

1.6 Setting the DSSI ISE Parameters

Once installed and powered up, the DSSI ISE parameters must be set. This is done through the use of the local program PARAMS. The following procedures should be used when performing an ISE installation. If further information on the use of PARAMS is desired, refer to the appropriate integrated storage element user's guide (see Appendix A) for a complete description of the PARAMS utility.

1.6.1 Accessing PARAMS

PARAMS can be accessed in one of three ways, depending on the system you are using.

- Through OpenVMS, using the SET HOST command

- From the console, using the SET HOST command

- Through MDM, using the Device Resident Programs menu

1.6.1.1 Using OpenVMS

To access PARAMS on a system running OpenVMS Version 5.3 or higher, the command is:

```
$ SET HOST/DUP/SERVER=MSCP$DUP/TASK=PARAMS nodename
```

where "nodename" is the node name of the ISE.

NOTE

To find the node name, enter SHOW DEVICES or SHOW CLUSTER at the $ prompt.

To produce a file in your directory of what appears on the screen, append the qualifier/log=filename.ext (where filename.ext is what you want to name the file) to the above command.

Once you are in PARAMS, control is turned over to the utility. All interaction is through the use of commands and responses.

To exit PARAMS, enter EXIT at the PARAMS> prompt, or press one of the following key combinations: CTRL/C , CTRL/Y , or CTRL/Z .

1.6.1.2 Using Console Commands

From console mode you can access the Diagnostic and Utility Program (DUP) to examine and set parameters. The command syntax depends upon whether your system uses an embedded adapter such as the KA670 module, or a Q–bus adapter (the KFQSA module).

Embedded Adapters

To access PARAMS from a system with an embedded adapter, enter:

```
>>> SET HOST/DUP/DSSI/BUS:<BUS_NUMBER>
<NODE_NUMBER> PARAMS
```

where

<BUS_NUMBER> is the DSSI bus number (0 or 1) and <NODE_NUMBER> is the bus node ID (0–7) for the device on the bus.

NOTE

To find the DSSI bus number and node number, enter SHOW DSSI at the console (>>>) prompt.

KFQSA Storage Adapter

To access PARAMS from a system with a Q–bus adapter, enter:

```
>>> SET HOST/DUP/UQSSP/DISK <controller_number> PARAMS
```

where

<controller_number> is the controller number (provided by the SHOW UQSSP display) for the device on the bus.

After you have completed setting and examining DSSI device parameters, enter the WRITE command at the PARAMS> prompt to save the device parameters you have changed using the SET command. The changes are recorded to nonvolatile memory.

If you have changed the allocation class or node name of a device, the DUP driver utility will ask you to initialize the controller. Answer Yes (Y) to allow the changes to be recorded and to exit the DUP driver utility.

If you have not changed the allocation class or node name, enter the EXIT command at the PARAMS> prompt to exit the DUP driver utility for the specified device.

1.6.1.3 Using MDM

If neither OpenVMS nor console commands are available on your system, you can access PARAMS through MDM using the following procedure:

1. Boot MDM.

2. Enter the date and time.

3. Select the menus in the following order:

   - Service menu

   - Device menu

   - KFQSAA-KFQSA subsystem menu

   - Device Utilities menu

   - Device Resident Programs menu

   When you select the Device Resident Programs menu, the following is displayed:

   ```
   RUNNING A UTILITY SERVICE TEST

   To halt the test at any time and return to the previous menu,
   type CTRL/C .

   KFQSAA started.
   KFQSAA pass 1 test number 3 started.
   Copyright 1988 Digital Equipment Corporation
   Completed.
   EXIT                     DRVEXR                   DRVTST
   HISTRY                   ERASE                    PARAMS
   DIRECT                   DKUTIL                   PRFMON
   VERIFY

   Please choose a local program or press Return to continue.
   ```

4. Enter PARAMS and press Return .

5. Once you are in PARAMS, control is turned over to the utility. All interaction is through the use of commands and responses.

6. To exit PARAMS, enter EXIT at the PARAMS> prompt, or press one of the following: CTRL/C , CTRL/Y , or CTRL/Z .

7. To exit MDM, press the Break key.

1.6.2 Setting the ISE Allocation Class

All DSSI ISEs are shipped with the allocation class set to 0. To determine what the allocation class should be set to, access a different ISE on the system and set the one you are installing to the same allocation class.

In multihost systems, you must assign the same allocation class to all host systems and all connected ISEs. This allocation class must be different from that of other systems or other hierarchical storage controllers (HSCs) in a cluster.

Use the following procedure to set the allocation class:

1. Determine what the allocation class should be set to by reading it from another ISE that is already working on the system. Use one of the procedures outlined in Section 1.6.1 to access PARAMS on the ISE from which you want to read this information.

2. At the PARAMS> prompt, enter SHOW ALLCLASS. The system displays the following:

   ```
   Parameter     Current       Default      Type    Radix
   ---------     -----------   -----------  ------  -------
   ALLCLASS            1             0       Byte    Dec   B

   PARAMS>
   ```

3. Make a note of the allocation class. In the example above, the allocation class has been set to 1. Exit PARAMS and return to the root prompt (OpenVMS, console, or MDM).

4. Access PARAMS on the newly installed ISE, using one of the procedures outlined in Section 1.6.1.

5. Enter SHOW ALLCLASS. The system responds with:

```
Parameter     Current       Default      Type     Radix
---------     -----------   -----------  ------   -------
ALLCLASS          0             0        Byte     Dec   B

PARAMS>
```

6. Enter SET ALLCLASS 1 (for our example). You want to set the ISE to the same allocation class as all the other ISEs on the DSSI bus.

7. Enter SHOW ALLCLASS to check the new allocation class.

   The system responds with:

```
Parameter     Current       Default      Type     Radix
---------     -----------   -----------  ------   -------
ALLCLASS          1             0        Byte     Dec   B

PARAMS>
```

8. Enter WRITE. The system responds with:

```
Changes require controller initialization, ok? [Y/ (N)]
```

9. Enter **Y** to save the new allocation class value.

1.6.3 Setting the MSCP Unit Number

The ISE is set at the factory to read the DSSI node ID as the MSCP unit number. Unit numbers for all DSSI devices connected to a system's associated DSSI buses must be unique. When more than one bus is being used, and your system is using a nonzero allocation class, you need to assign new unit numbers for devices on all but one of the DSSI buses.

When assigning a different unit number, you must also set the FORCEUNI parameter to 0. This allows the unit number you have set to be used. The factory setting for FORCEUNI is 1, forcing the DSSI node ID to be used as the MSCP unit number.

The following example shows how to change the MSCP unit number:

```
PARAMS> sh unitnum
Parameter   Current       Default       Type      Radix
---------  ------------  -------------  ---------  -----
UNITNUM            5                0     Word      Dec   U

PARAMS> set unitnum 21

PARAMS> sh unitnum
Parameter   Current       Default       Type      Radix
---------  ------------  -------------  ---------  -----
UNITNUM           21                0     Word      Dec   U

PARAMS> sh forceuni
Parameter   Current       Default       Type      Radix
---------  ------------  -------------  ---------  -----
FORCEUNI           1                1   Boolean     0/1   U

PARAMS> set forceuni 0

PARAMS> sh forceuni
Parameter   Current       Default       Type      Radix
---------  ------------  -------------  ---------  -----
FORCEUNI           0                1   Boolean     0/1   U

PARAMS> write
```

1.6.4 Setting the ISE Node Name

Setting the ISE node name is an optional step. All DSSI ISEs come with a computer-generated node name. The user may wish to set this node name to a more recognizable character string.

The following example changes the node name from the default (R1EJAA) to the new string "SUSAN." When entering ASCII strings, you may use single quotes, double quotes, or no quotes at all.

```
PARAMS> show node
Parameter     Current        Default     Type     Radix
---------   -------------   ------------  -------  -----
NODENAME        R1EJAA         RF31      String  ASCII   B

PARAMS> set node "susan"
PARAMS> show node
Parameter     Current        Default     Type     Radix
---------   -------------   ------------  -------  -----
NODENAME        SUSAN          RF31      String  ASCII   B

PARAMS> write
```

NOTE

Using the WRITE command will make any changes permanent.

1.7 Testing the ISE

CAUTION

Running DRVTST may erase all user data on the ISE, and should only be used when installing a new ISE.

Once the ISE parameters are set, test the drive by using DRVTST, the local program. DRVTST is accessed in the same way as PARAMS, using one of the procedures outlined in Section 1.6.1. In this case, instead of specifying PARAMS, specify DRVTST.

DRVTST is a comprehensive hardware test. Once invoked, it will prompt you to specify whether the test should be a read/write test or a read-only test. After you specify the type of test, it will run for 5 minutes. After 5 minutes, DRVTST will indicate either that the test passed, or that a failure occurred.

Once the ISE has passed DRVTST, the installation is complete. If further information on the use of DRVTST is desired, refer to the appropriate integrated storage element user's guide (see Appendix A) for a complete description of the DRVTST local program.

1.7.1 DRVTST Example

The following example shows how to run DRVTST. In this example, DRVTST is accessed through OpenVMS on an ISE with a node name R1EJAA.

```
$ SET HOST/DUP/SERVER=MSCP$DUP/TASK=DRVTST R1EJAA
```

The program displays the following:

```
Copyright © 19nn Digital Equipment Corporation
Write/read anywhere on the medium? [1=Yes/(0=No)]
```

You must respond to the query for the program to continue. By answering yes (1), you select a read-write test, and DRVTST prompts you with another query.

In this case, type 1 Return , selecting a read-write test. DRVTST then displays the following:

```
User data will be corrupted. Proceed? [1=Yes/(0=No)]
```

This query gives you the chance to reconsider. If you answer no (0), then your response to the first query is overridden, and a read-only test is executed. If you answer yes (1), DRVTST begins executing a read-write test of the ISE.

In this case, type 1 Return . During the test, the program displays the following message:

```
  5 minutes to complete.
```

_____ **NOTE** _____

You may abort the test at any time by pressing one of the following key combinations: CTRL/C , CTRL/Y , or CTRL/Z . If you abort the test, the informational message Operation aborted by user will be displayed.

_____

If DRVTST is executed successfully, the following message is displayed:

```
Test passed.
```

1.7.2 Error Messages

If an error condition is found during the execution of DRVTST, an error message is displayed. Two types of errors are reported: soft errors, which are corrected during the operation of the ISE, and fatal errors, which prevent the ISE from functioning.

The following table indicates the error messages you may see and what they mean.

Table 1–1   DVTST Error Messages

Message	Description
Soft read error on head xx track yyyy. Soft write error on head xx track yyyy. Soft compare error on head xx track yyyy.	These are soft error messages which indicate that an operation succeeded, but that the error recovery firmware was invoked. These messages may indicate a forced-error flag or correctable ECC error, or that the read/write head was temporarily off-track. These are corrected during normal operation.
xxxx - Unit diagnostics failed.	This is a fatal error. xxxx is the MSCP error code.
xxxx - Unit read/write test failed.	This is a fatal error. xxxx is the MSCP error code.

Make note of any soft error messages that are displayed for possible future reference. If you encounter a fatal error, do not complete the installation.

1.8 Setting the SCSI ISE Parameters

Refer to the *HSD05 DSSI-to-SCSI Bus Adapter Operation Information for BA400-Based VAX 4000 Systems* manual (EK-HSDC5-IN) or the *HSD10 DSSI-to-SCSI Bus Adapter Operation Information for VAX 4000 Systems* manual (EK-HSD10-OP) for the procedures to set the SCSI ISE parameters.

1.8.1 Problem Resolution

Should you encounter problems during installation, refer to the appropriate system troubleshooting and diagnostics manual.

2
TLZ-Series Tape Drives

2.1 General

This chapter describes how to install the TLZ-series tape drive. For more detailed information about installing add-on storage devices into a BA400-series enclosure, refer to the appropriate enclosure maintenance guide (see Appendix A).

2.2 TLZ07 Tape Drive

The TLZ07 is a 5.25-inch half-height cassette tape drive that provides high capacity, off-line data storage. The TLZ07 interfaces to the system by means of a Small Computer System Interface (SCSI). The following table lists the storage capacity for each type of 4 mm data cassette.

Tape Type	With No Compression	With Compression
TLZ04-CA (60 m)[1]	1.3 GB	2.6 GB
TLZ06-CA (90 m)[2]	2.0 GB	4.0 GB[3]
TLZ07-CA (120 m)	4.0 GB	8.0 GB[3]

[1]The TLZ07 is compatible with TLZ04 (60 m) cassette tapes in the noncompressed mode only.

[2]The TLZ07 is compatible with the TLZ06 using 60 m and 90 m tapes only.

[3]The compression measurements are typical for a 2-to-1 data compression ratio, but the actual ratio is dependent on the data.

_____ **Note** _____

VAX 4000 systems do not support embedded TLZ07 tape drives unless an HSD05 or HSD10 option is installed.

2.3 TLZ07 Installation Preparation

TLZ07 tape drives require that bus node ID jumpers or DIP switches be set on the drive before the ISE is installed in a BA400-series enclosure. The TLZ07 tape drive has both jumpers and DIP switches that can be used to set the bus node ID, but only one or the other must be used.

When installing a TLZ07 tape drive, refer to the reference booklet or data sheet that is shipped with the drive to set the proper bus node ID (SCSI ID) jumpers or DIP switches. Also ensure that the TERM PWR and the TERM ENABLE jumpers are removed and that the TERM PWR and the TERM ENABLE DIP switches are set to 0. Failure to remove the TERM ENABLE jumper or set the TERM ENABLE DIP switch to 0 (termination disabled) will cause improper operation of the drive.

_____ **Note** _____

If the DIP switches are used to set the bus node ID, ensure that all of the bus node ID jumpers are removed. If the jumpers are used to set the bus node ID, ensure that all of the bus node ID DIP switches are set to 0.

_____

In VAX 4000 systems, the SCSI termination and TERM PWR are provided by the controller module on one end of the bus and termination for the other end of the bus is provided by an external terminator.

_____ **Note** _____

Refer to Section 1.4.4 for bus node ID configuration guidelines.

_____

2.4 TLZ07 Installation Procedure

Use the following procedure to install the TLZ07 tape drive into a BA400-series enclosure. Have the system manager shut down the operating system before installing the tape drive.

CAUTION

Static electricity can damage integrated circuits. Use the antistatic wrist strap and antistatic pad found in the static-protective field service kit (29-26246-00) when you work with the internal parts of a computer system.

---

1. Open the top and bottom enclosure doors.

2. Power off the system and unplug the power cord from the wall outlet.

3. Loosen the captive Phillips screw (at the top) and remove the drive front panel and filler panel located in mass storage slot 0.

Figure 2–1   Opening the Enclosure Doors

Key Lock

Top Key Position

Slot 0

Power
Switch

Bottom Key Position
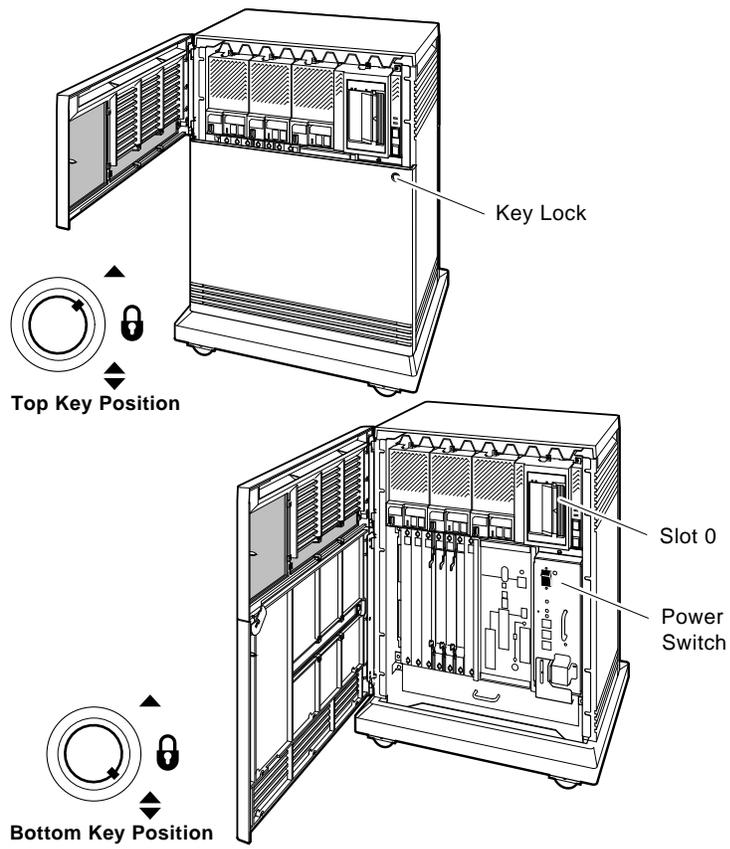
MLO-012856

4. With the tape drive left side down (LEDs at the bottom), slide the drive into mass storage slot 0.

   √ Using the tabs in front of the upper and lower finger cutouts, firmly push the drive bracket into the enclosure until the interface card at the rear of the drive plugs into its backplane connector.

5. Refer to Figure 2–2 to complete the drive installation.

   a. Tighten the captive screws at the top and bottom of the bracket (**1**).

   ―――――――――――――― **CAUTION** ――――――――――――――

   It is normal for there to be a small gap between the mounting bracket tabs and the enclosure frame. Tighten the captive screw only until it is securely fastened (9 inch pounds). Do not try to force the tabs to fit flush against the frame.

   ――――――――――――――――――――――――――――――――

   b. Attach the drive front panel to the enclosure by first fitting the panel's lower tabs into position (**2**).

   c. Secure the front panel with its single captive Phillips screw (**3**).

Figure 2–2 Installing the TLZ07 Drive

1
Tighten
screw.

3
Tighten
screw.

2
Insert
bezel.
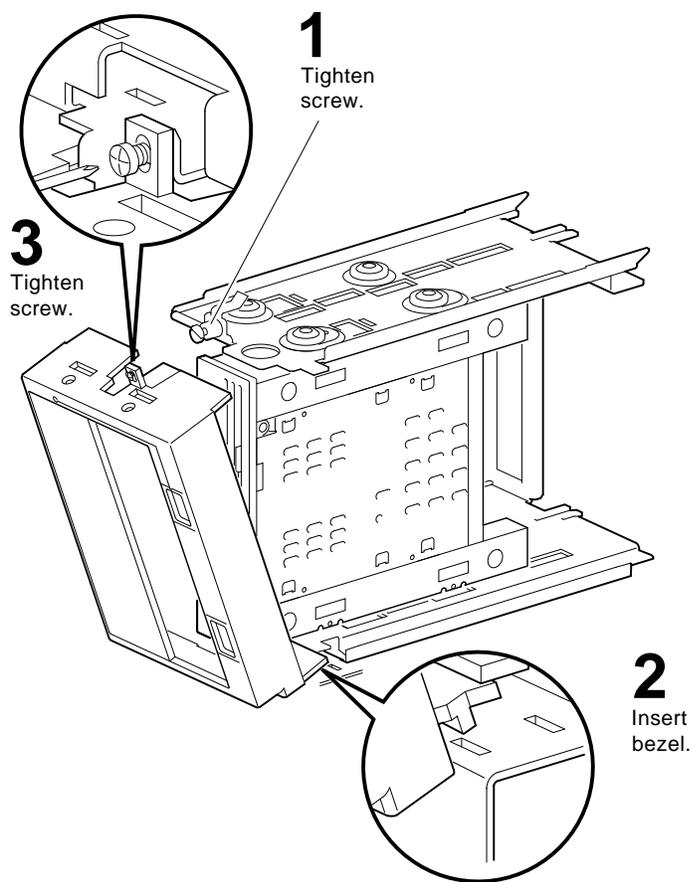
MLO-011787

2.5 Completing the TLZ07 Installation

This section explains how to verify successful installation of the TLZ07 drive by performing the power-on self-test (POST), and then assigning a device name to the drive.

2.5.1 TLZ07 Power-On Self-Test

Use the following procedure to execute the POST:

1. Power on the system.

    - If there is no cassette in the drive:

        The Cassette and Write-Protect indicators flash for approximately 1 to 5 seconds and then shut off.

    - If there is a cassette in the drive:

        The Cassette and Write-Protect indicators flash for approximately 5 seconds, then the Write-Protect indicator indicates write-protect status and the Cassette indicator continues to flash at a slower rate until the cassette is loaded. After the cassette is loaded, the Casette indicator remains on.

After completing a successful execution of the POST, have the system manager restart the operating system and assign a device name to the TLZ07 drive.

Unsuccessful POST

The POST failed if the Cassette and Write-Protect indicators flash continuously for more than 30 seconds.

√ Attempt to clear the failure by powering off the system and then re-executing the POST.

√ If the failure continues, refer to the appropriate system troubleshooting and diagnostics manual (Appendix A).

2.6 Setting the ISE Parameters

For TLZ-series tape drives the SCSI ISE parameters are set in the same manner as the RZ-series ISEs. Refer to the *HSD05 DSSI-to-SCSI Bus Adapter Operation Information for BA400-Based VAX 4000 Systems* manual (EK–HSDC5–IN) or the *HSD10 DSSI-to-SCSI Bus Adapter Operation Information for VAX 4000 Systems* manual (EK–HSD10–OP) for this procedure.

3

RRD-Series CD–ROM Drive

3.1 General

RRD-Series CD–ROM drives are compact disc, read-only memory (ROM),
Small Computer System Interface (SCSI) devices. These drives read data
from industry standard 600-MB discs. To meet the requirements of a wide
variety of applications, the RRD-series of CD–ROM drives support all CD–
ROM standards including CD–ROM-XA (CD–ROM-eXtended Architecture),
Multisession Photo CD, and MPC (Multimedia Products Council) 1 and 2, and
is CD-I ready.

3.2 RRD-Series CD–ROM Drive Installation Preparation

RRD-series CD–ROM drives require that bus node ID jumpers be set on the
drive before the ISE is installed in a BA400-series enclosure.

When installing an RRD-series CD–ROM drive, refer to the reference booklet
or data sheet that is shipped with the drive to set the proper bus node ID
(SCSI ID) jumpers. Also ensure that the TERM PWR and the TERM ENABLE
jumpers are removed. Failure to remove the TERM ENABLE jumper will
cause improper operation of the drive.

In VAX 4000 systems, the SCSI termination and TERM PWR are provided by
the controller module on one end of the bus and termination for the other end
of the bus is provided by an external terminator.

_____ **Note** _____

Refer to Section 1.4.4 for bus node ID configuration guidelines.

_____

3.3 Installation Procedure

Use the following procedure to install the RRD-series CD–ROM drives into the BA400-series enclosure. Have the system manager shut down the operating system before installing the CD–ROM drive.

_____ **CAUTION** _____

Static electricity can damage integrated circuits. Use the antistatic wrist strap and antistatic pad found in the static-protective field service kit (29-26246-00) when you work with the internal parts of a computer system.

_____

1. Open the top and bottom enclosure doors.

2. Power off the system and unplug the power cord from the wall outlet.

3. Loosen the captive Phillips screw (at the top) and remove the front panel from the first available storage slot.

_____ **Note** _____

The first mass storage cavity in the mass storage area (slot 0) is wider than the rest to accommodate a large device, such as a tape drive. A small filler panel (70-27414-01) is used to fill the gap when an RRD-series ISE is installed in this first cavity.

_____

Figure 3–1   Opening the Enclosure Doors

Key Lock

Top Key Position

Slot 3
Slot 2
Slot 1

Power
Switch

Bottom Key Position
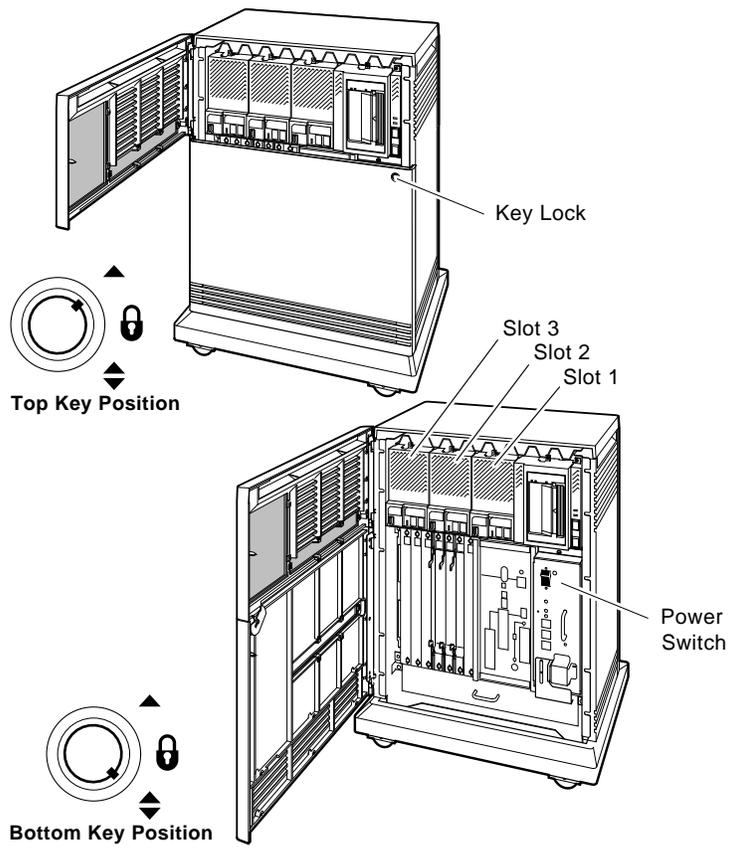
MLO-012857

4. Refer to Figure 3–2 to install the CD–ROM drive into the mass storage slot:

   √ Using the tabs in front of the upper and lower finger cutouts, firmly push the drive brackets until the interface card at the rear of the drive plugs into its backplane connector (**A**).

5. Tighten the captive screws at the top and bottom of the bracket (**A**).

   ———————————————— **CAUTION** ————————————————

   It is normal for there to be a small gap between the mounting bracket guide tabs and the enclosure frame. Tighten the captive screw only until it is securely fastened (9 inch pounds). Do not try to force the tabs to fit flush against the frame.

   ——

6. Attach the ISE front panel to the enclosure by first fitting the panel's lower tabs into position.

   √ Fit the panel into position and secure the panel with its single captive Phillips screw (**B**).

7. If you do not have a KZQSA installed, go to Section 3.4 to complete the installation.

   If you do have a KZQSA installed, continue with the next step.

Figure 3–2 Inserting the RRD CD–ROM drive

A

Captive Screw

Finger Cutouts

Phillips Screw

B

Guide Tabs
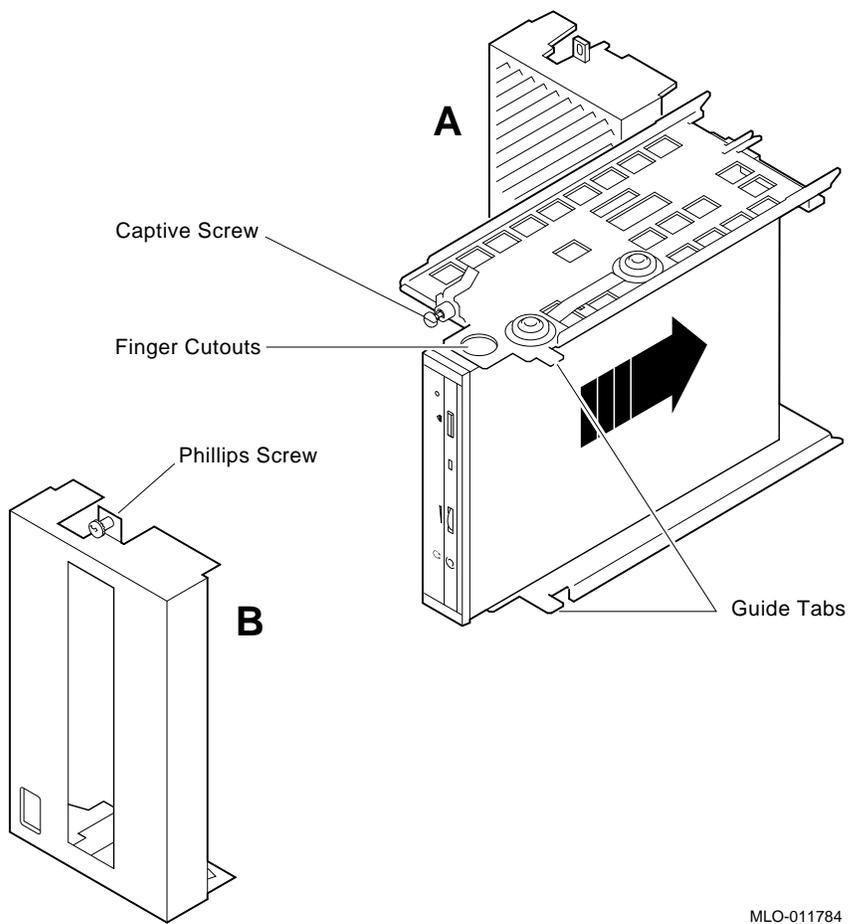
MLO-011784

8. Locate the KZQSA IN connector on the I/O bulkhead.

Figure 3–3 KZQSA IN Connector
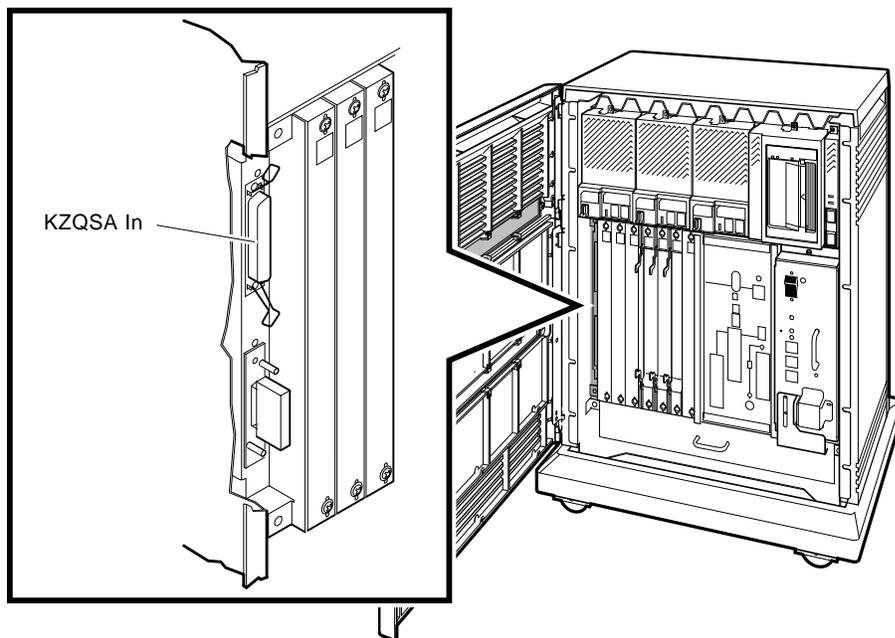
KZQSA In

MLO-007150

9. Remove the protective cover from the KZQSA IN connector.

Figure 3–4 Removing the Connector Cover

Protective Cover

MLO-007168
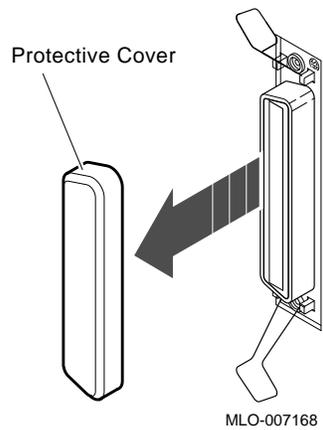
10. Locate the KZQSA internal cable labeled BC06P–2F that ships with the RRD drive.

Figure 3–5 KZQSA Cable

MLO-007151
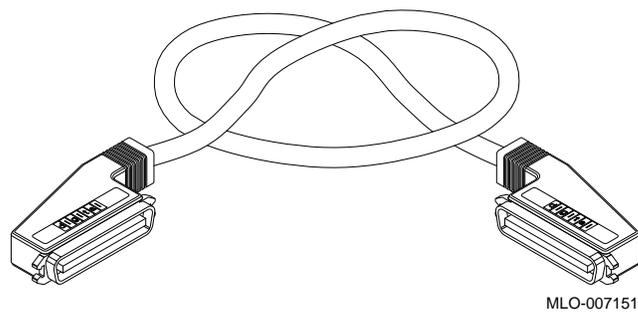
11. Connect one end of the cable to the KZQSA IN connector.

√ Press the bail latches onto the cable connector to lock it in place.

Figure 3–6 Connecting to KZQSA IN
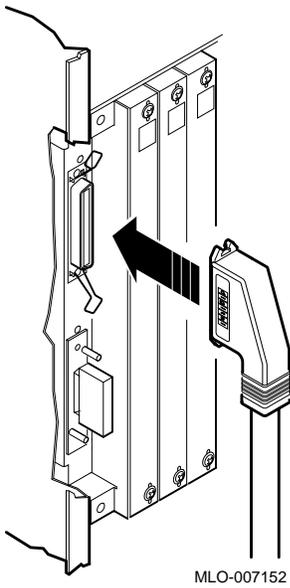
MLO-007152

12. Locate the KZQSA module identified by the KZQSA-SA indentification label on the module cover.

Figure 3–7   KZQSA Label


KZQSA
-SA

M5976
-SA
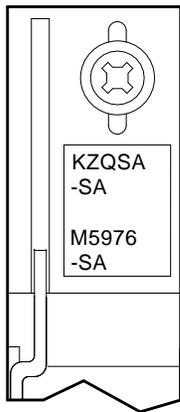
MLO-007153

13. Remove the terminator from the upper connector on the module.

Figure 3–8   KZQSA Module Connector
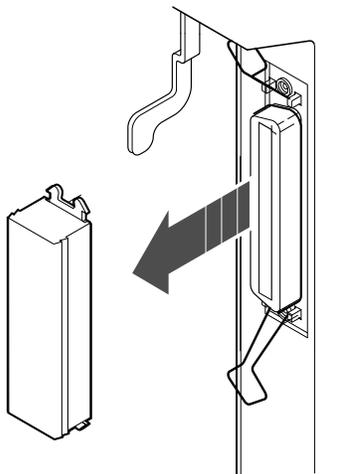
MLO-007179

14. Connect the other end of the cable to the KZQSA module connector.

   √ Press the bail latches onto the cable connector to lock it in place.

Figure 3–9 Connecting to KZQSA IN

Bail
Latch

Feed Cable Under System
and Up Through Opening.
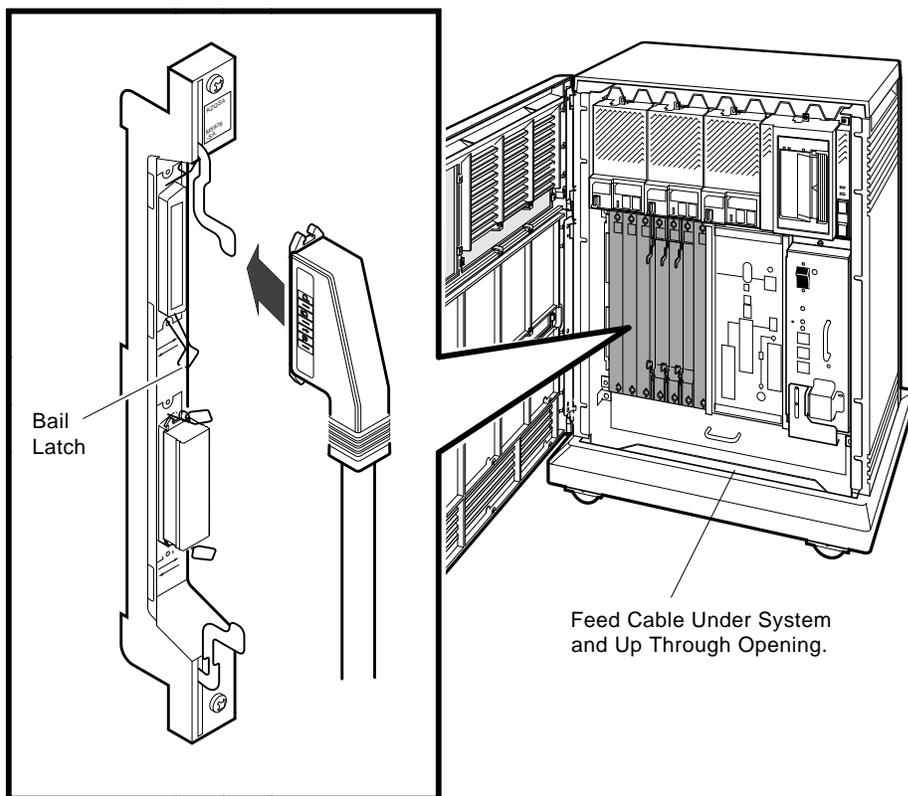
MLO-007154

3.4 Completing the Installation

This section explains how to verify successful installation of the RRD CD–ROM drive by performing the power-on self-test (POST).

3.4.1 RRD CD–ROM Power-On Self-Test

Use the following procedure to execute the POST:

1. Power on the system.

   • The Busy indicator flashes for approximately 10 to 20 seconds.

Successful POST

After successful completion of the POST, the Busy indicator shuts off.

Have the system manager restart the operating system and assign a device name to the CD–ROM drive.

Unsuccessful POST

If the Busy indicator remains on continuously then the POST failed.

√ Attempt to clear the failure by powering off the system and then re-executing the POST.

√ Check to be sure the CD is not loaded upside-down.

√ Check and reseat all ISE cable connections.

√ If the failure continues, refer to the appropriate system troubleshooting and diagnostics manual (Appendix A).

3.5 Setting the ISE Parameters

For RRD-series CD–ROM drives configured on an HSD05 or HSD10, the SCSI ISE parameters are set in the same manner as the RZ-series ISEs. Refer to the *HSD05 DSSI-to-SCSI Bus Adapter Operation Information for BA400-Based VAX 4000 Systems* manual (EK–HSDC5–IN) or the *HSD10 DSSI-to-SCSI Bus Adapter Operation Information for VAX 4000 Systems* manual (EK–HSD10–OP) for this procedure.

4

RRD/TLZ07 Dual ISE Drives

4.1 General

This chapter describes how to install the RRD/TLZ07 Dual ISE in the BA400-series enclosure. The RRD/TLZ07 Dual ISE contains a multi-purpose CD–ROM drive and a 5.25-inch cassette tape drive.

_____ Note _____

VAX 4000 systems do not support the RRD/TLZ07 Dual ISE unless an HSD05 or HSD10 option is installed.

_____

4.2 RRD/TLZ07 DUAL ISE Installation Preparation

RRD-series CD–ROM drives require that bus node ID jumpers be set on the drive before the ISE is installed in a BA400-series enclosure.

When installing an RRD-series CD–ROM drive, refer to the reference booklet or data sheet that is shipped with the drive to set the proper bus node ID (SCSI ID) jumpers. Also ensure that the TERM PWR and the TERM ENABLE jumpers are removed. Failure to remove the TERM ENABLE jumper will cause improper operation of the drive.

TLZ07 tape drives require that bus node ID jumpers or DIP switches be set on the drive before the ISE is installed in a BA400-series enclosure. The TLZ07 tape drive has both jumpers and DIP switches that can be used to set the bus node ID, but only one or the other must be used.

When installing a TLZ07 tape drive, refer to the reference booklet or data sheet that is shipped with the drive to set the proper bus node ID (SCSI ID) jumpers or DIP switches. Also ensure that the TERM PWR and the TERM ENABLE jumpers are removed and that the TERM PWR and the TERM ENABLE DIP switches are set to 0. Failure to remove the TERM ENABLE jumper or set the TERM ENABLE DIP switch to 0 will cause improper operation of the drive.

Note

If the DIP switches on the TLZ07 drive are used to set the bus node ID, ensure that all of the bus node ID jumpers are removed. If the jumpers are used to set the bus node ID on the TLZ07 drive, ensure that all of the bus node ID DIP switches are set to 0.

In VAX 4000 systems, the SCSI termination and TERM PWR are provided by the controller module on one end of the bus and termination for the other end of the bus is provided by an external terminator.

Note

Refer to Section 1.4.4 for bus node ID configuration guidelines.

4.3 Installation Procedure

Use the following procedure to install the dual ISE drives into a BA400-series enclosure. Have the system manager shut down the operating system before installing the ISE.

CAUTION

Static electricity can damage integrated circuits. Use the antistatic wrist strap and antistatic pad found in the static-protective field service kit (29-26246-00) when you work with the internal parts of a computer system.

---

1. Open the top and bottom enclosure doors.

2. Power off the system and unplug the power cord from the wall outlet.

3. Loosen the captive Phillips screw (at the top) and remove the drive front panel and filler panel located in mass storage slot 0.

Note

The RRD/TLZ07 Dual ISE can be installed in slot 0 only.

Figure 4–1 Opening the Enclosure Doors

Key Lock

Top Key Position

Slot 0

Power Switch

Bottom Key Position
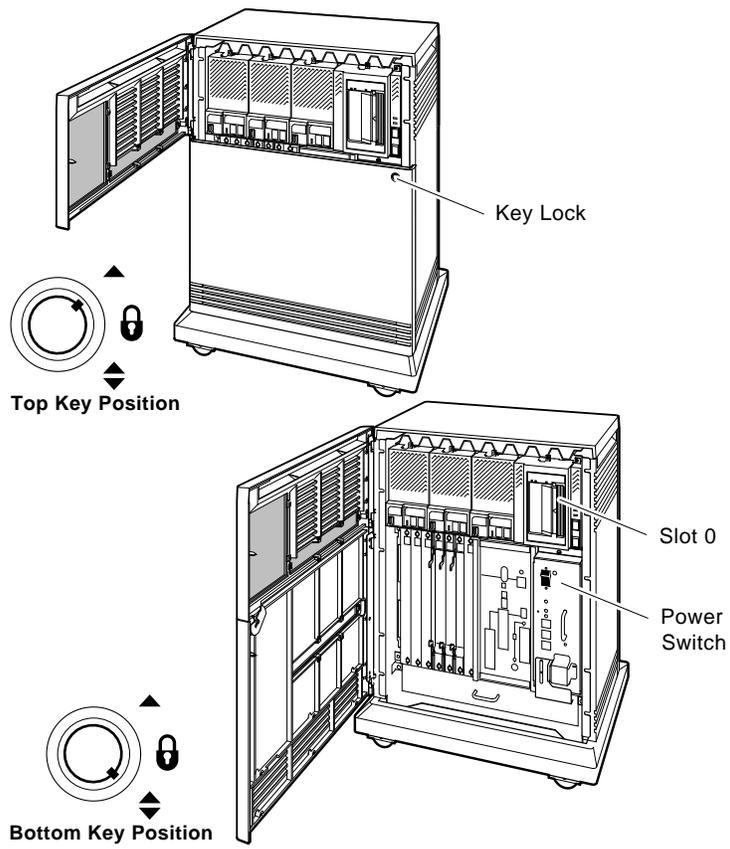
MLO-012856

4. Remove the center (plastic) card guides from the top and bottom storage divider in slot 0 (the guides are a pressure fit and lift right out).

5. With the tape drive left side down (LEDs at the bottom), slide the drive into mass storage slot 0.

   √ Using the tabs in front of the upper and lower finger cutouts, firmly push the drive bracket into the enclousure until the interface card at the rear of the drive plugs into its backplane connector.

6. Refer to Figure 4–2 to complete the installation of the drives.

   a. Tighten the captive screws at the top and bottom of the bracket (**1**).

   _____ **CAUTION** _____

   It is normal for there to be a small gap between the mounting bracket tabs and the enclosure frame. Tighten the captive screws only until they are securely fastened (9 inch pounds). Do not try to force the tabs to fit flush against the frame.

   _____

   b. Attach the drive front to the enclosure by first fitting the panel's lower tabs into position (**2**).

   c. Secure the front panel with its single captive Phillips screw (**3**).

Figure 4–2 Installing the RRD/TLZ07 Dual ISE

1 Tighten screw.

3 Tighten screw.

2 Insert bezel.

MLO-011786
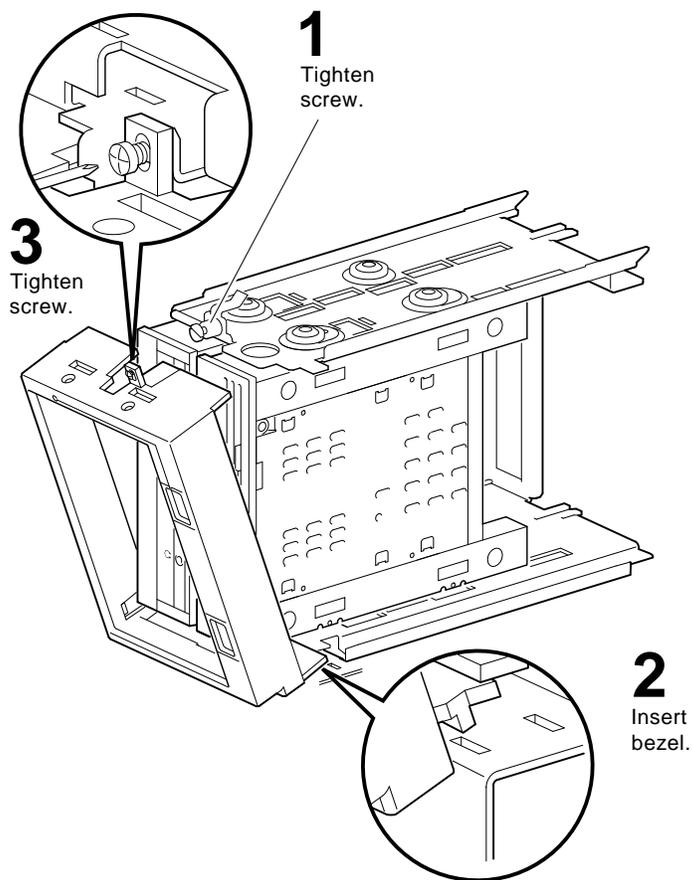
4.4 Completing the Installation

This section explains how to verify correct installation of the RRD/TLZ07 dual ISE drives by performing the power-on self-test (POST).

Section 4.4.1 describes the POST for a CD–ROM drive.

Section 4.4.2 describes the POST for a TLZ07 tape drive.

4.4.1 RRD CD-ROM Power-On Self-Test

Use the following procedure to execute the POST:

1. Power on the system.

   • The Busy indicator flashes for approximately 10 to 20 seconds.

Successful POST

After successful completion of the POST, the Busy indicator shuts off.

Have the system manager restart the operating system and assign a device name to the CD–ROM drive.

Unsuccessful POST

If the Busy indicator remains on continuously then the POST failed.

√ Attempt to clear the failure by powering off the system and then re-executing the POST.

√ Check to be sure the CD is not loaded upside-down.

√ Check and reseat all ISE cable connections.

√ If the failure continues, refer to the appropriate system troubleshooting and diagnostics manual (Appendix A).

4.4.2 TLZ07 Power-On Self-Test

Use the following procedure to execute the POST:

1. Power on the system.

    - If there is no cassette in the drive:

      The Cassette and Write-Protect indicators flash for approximately 1 to 5 seconds and then shut off.

    - If there is a cassette in the drive:

      The Cassett and Write-Protect indicators flash for approximately 5 seconds, then the Write-Protect indicator indicates write-protect status and the Cassette indicator continues to flash at a slower rate until the cassette is loaded. After the cassette is loaded, the Cassette indicator remains on.

After completing a successful execution of the POST, have the system manager restart the operating system and assign a device name to the TLZ07 drive.

Unsuccessful POST

The POST failed if the Cassette and Write-Protect indicators flash continuously for more than 30 seconds.

√ Attempt to clear the failure by powering off the system and then re-executing the POST.

√ If the failure continues, refer to the appropriate system troubleshooting and diagnostics manual (Appendix A).

4.5 Setting the ISE Parameters

For RRD/TLZ07 dual ISE drives the SCSI ISE parameters are set in the same manner as the RZ-series ISEs. Refer to the *HSD05 DSSI-to-SCSI Bus Adapter Operation Information for BA400-Based VAX 4000 Systems* manual (EK–HSDC5–IN) or the *HSD10 DSSI-to-SCSI Bus Adapter Operation Information for VAX 4000 Systems* manual (EK–HSD10–OP) for this procedure.

5

TZ-Series Tape Drive

5.1 General

This chapter describes how to install the TZ-series of tape drive. Figure 5–1 shows the front panel of the TZ86 tape drive and is representative of this series of drives.

Figure 5–1   TZ86 Tape Drive Front Panel

Write-Protected
Orange

Tape In Use
Yellow

Use Cleaning Tape
Orange

Operate Handle
Green

Unload
Button

Cartridge Insert/
Release Handle

TZ86

Write Protected
Tape In Use
Use Cleaning Tape
Operate Handle
Unload

To Load
● Wait ☐ Light
● Open this Handle
● Insert Tape
● Close this Handle

To Unload
● Press Button
● Wait ☐ Light
● Open this Handle
● Remove Tape

MLO-011785

The Digital Linear Tape Drive (DLT) family cartridge tape drives are 5.25-inch streaming linear recording tape devices, designed for systems requiring high performance, high data integrity, and unattended backup.

The following table lists the tape drives and cartridge type along with storage capacity.

Drive Type	Cartridge Type	Storage Capacity
TZ85	CompacTape III	2.6 GB formatted
TZ86	CompacTape III	6.0 GB formatted
TZ87	CompacTape III	10.0 GB formatted, uncompressed 20.0 GB formatted, compressed
TZ87X	CompacTape IIIXT	15.0 GB formatted, uncompressed 30.0 GB formatted, compressed
TZ88	CompacTape IV	20.0 GB formatted, uncompressed 40.0 GB formatted, compressed

The TZ-series cartridge tape subsystems are used primarily for data backup, for data archiving, and for loading software onto computer systems. The TZ-series cartridge tape subsystems use the Small Computer System Interface (SCSI) bus.

5.2 TZ-Series Tape Drive Installation Preparation

TZ-series tape drives require that bus node ID jumpers or DIP switches be set on the drive before the ISE is installed in a BA400-series enclosure. The TZ-series tape drive has both jumpers and DIP switches that can be used to set the bus node ID, but only one or the other must be used.

When installing a TZ-series tape drive, refer to the reference booklet or data sheet that is shipped with the drive to set the proper bus node ID (SCSI ID) jumpers or DIP switches. Also ensure that the TERM PWR jumper and the three termination resistor packs are removed. The TERM PWR jumper can be stored on the NO PWR pins and the three termination resistor packs can be stored in the NO TERM sockets.

_____ **Note** _____

If the DIP switches are used to set the bus node ID, ensure that all of the bus node ID jumpers are removed. If the jumpers are used to set the bus node ID, ensure that all of the bus node ID DIP switches are set to 0.

_____

In VAX 4000 systems, the SCSI termination and TERM PWR are provided by the controller module on one end of the bus and termination for the other end of the bus is provided by an external terminator.

_____ **Note** _____

Refer to Section 1.4.4 for bus node ID configuration guidelines.

5.3 TZ-Series Tape Drive Installation

Use this procedure to install TZ-Series tape drives.

_____ **NOTE** _____

VAX 4000 systems do not support TZ-series ISEs unless an HSD05 or HSD10 option is installed.

_____ **CAUTION** _____

Static electricity can damage integrated circuits. Use the antistatic wrist strap and antistatic pad found in the static-protective field service kit (29-26246-00) when you work with the internal parts of a computer system.

Handle the TZ-series tape drive with care. Dropping or bumping the drive can damage the product. Carry or hold the drive by the underside of the lower metal bracket to avoid damaging the drive module.

1. After the system manager shuts down the operating system, open the enclosure door (refer to Figure 1–9), and set the power switch to off (0) (Figure 5–2).

Figure 5–2   Power Switch Location

Power Switch
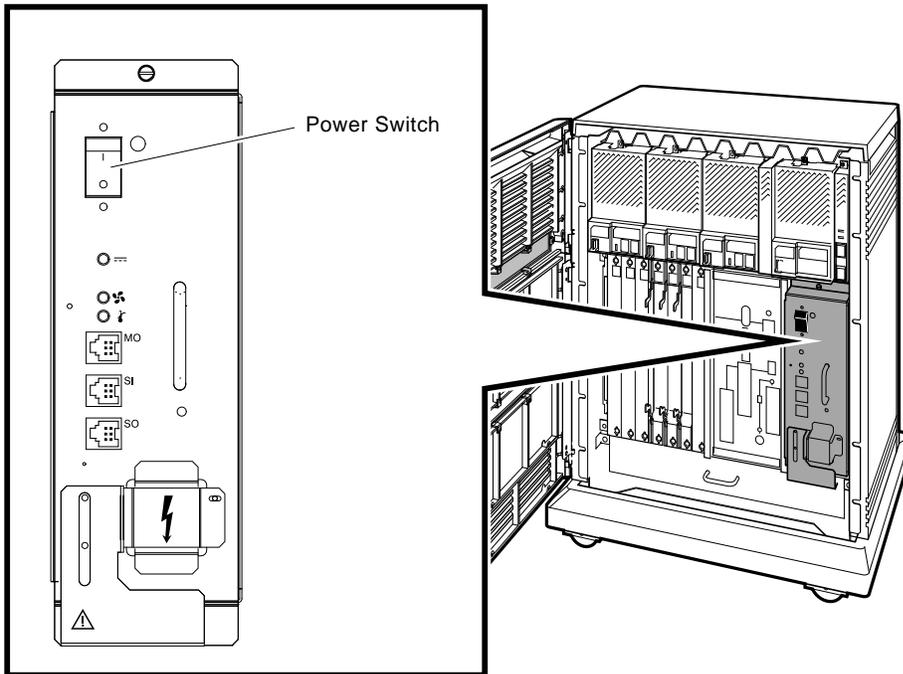
MLO-006628

2. Loosen the captive Phillips screws (at the top) and remove the blank front
    panel (70-27049-01) and filler panel (70-27414-01) located in mass storage
    slot 0.

_____ **Note** _____

The TZ-series tape drive is installed only in mass storage slot 0.

_____

3. With the tape drive right side up (Unload button at top), slide the drive
    (Figure 5–3A) into mass storage slot 0.

4. Using the tabs in front of the upper and lower finger cutouts, firmly push
    the drive brackets until the interface card at the rear of the drive plugs
    into its backplane connector.

5. Refer to Figure 5–3 to complete the installation of the drive.

   a. Tighten the two captive screws at the top and bottom of the bracket **(A)**.

   ———————————— **CAUTION** ————————————

   It is normal for there to be a small gap between the mounting bracket tabs and the enclosure frame. Tighten the captive screws only until they are securely fastened (9 inch pounds). Do not try to force the tabs to fit flush against the frame.

   ———————————————————————————————

   b. Attach the ISE front panel to the enclosure by first fitting the panels lower tabs into position.

      √ Fit the panel into position and secure the panel with its single captive Phillips screw **(B)**.

Figure 5–3 Installing the TZ-Series Drive

Captive Screws (2)

Finger Cutouts

Phillips Screw

A

B

Guide Tabs
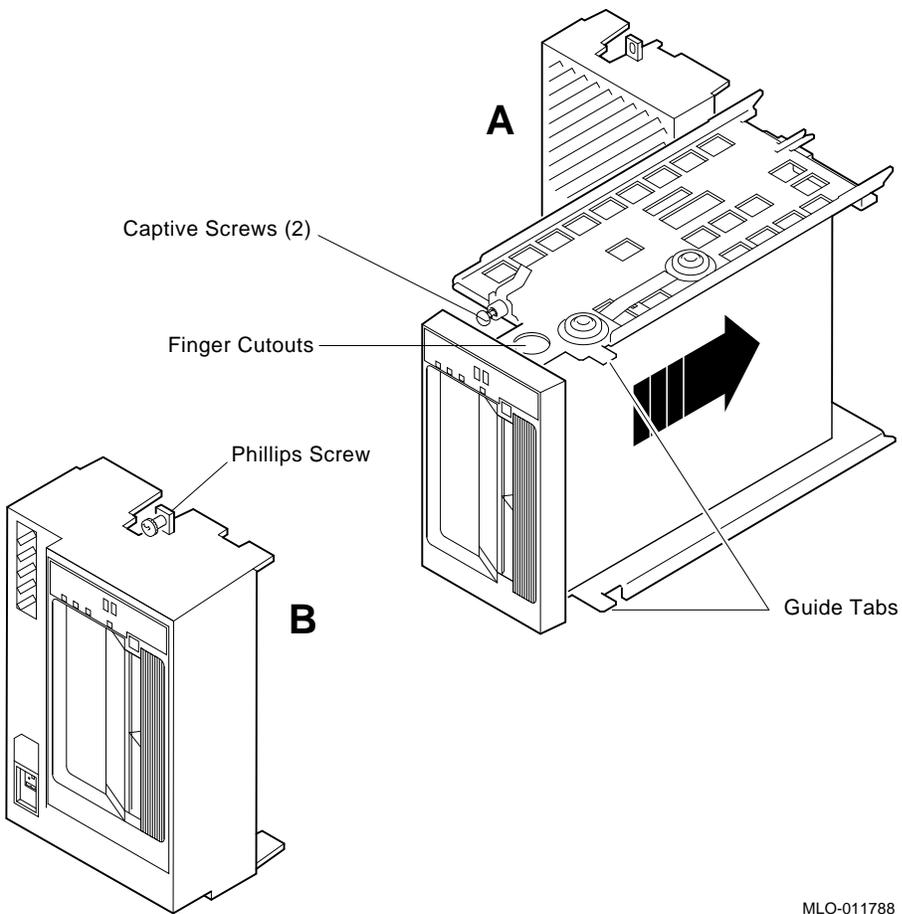
MLO-011788

Figure 5–4 shows the TZ-series tape drive installed in the enclosure.

Figure 5–4 TZ-Series Drive Installed in Mass Storage Slot 0
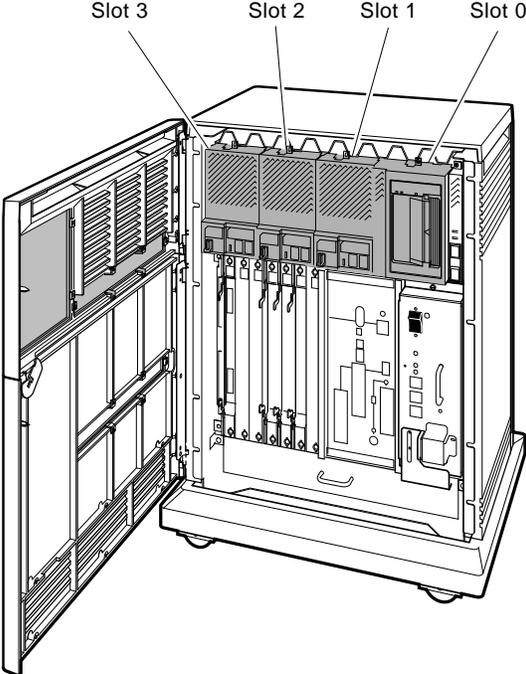
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5.4 Completing the Installation

This section explains how to verify successful installation of the TZ-series tape drives by performing the power-on self-test (POST).

5.4.1 TZ-Series Power-On Self-Test

When the TZ-series subsystem is powered on, the drive performs the power-on self-test (POST). The sequence of events are listed in Table 5–1.

Table 5–1   Power-on Self-test Events

Stage	What Happens
1	The indicators on the TZ-series top front panel light sequentially, from left to right and then stay on for a few seconds.
2	All indicators on the TZ87/88 bottom front panel light at the same time for about three seconds and then shut off.
3	The green Operate Handle, the orange/yellow Write Protected[1], and the yellow Use Cleaning Tape indicators shut off.
4	The yellow Tape in Use indicator flashes while the tape drive initializes.
5	After initialization, with no cartridge loaded, the green Operate Handle indicator lights and a "beep" sounds.

[1]The Write Protected indicator is yellow on the TZ87/88 tape drives, and orange on the TZ86 tape drive.

Successful POST

POST completes in about 13 seconds and the subsystem responds normally to all commands. However, it might take longer for the media to become ready. After a bus reset, the tape drive responds with a bus selection timeout period.

After completing a successful execution of the POST, have the system manager restart the operating system and assign a device name to the TZ-series drives.

Unsuccessful POST

The POST failed if all indicators continue to flash.

√ Attempt to clear the failure by powering off the system and then re-executing the POST.

√ If the failure continues, refer to the appropriate system troubleshooting and diagnostics manual (Appendix A).

5.5 Setting the ISE Parameters

For TZ-series tape drives the SCSI ISE parameters are set in the same manner as the RZ-series ISEs. Refer to the *HSD05 DSSI-to-SCSI Bus Adapter Operation Information for BA400-Based VAX 4000 Systems* manual (EK–HSDC5–IN) or the *HSD10 DSSI-to-SCSI Bus Adapter Operation Information for VAX 4000 Systems* manual (EK–HSD10–OP) for this procedure.

A
Related Documentation

Document	Order Number
BA430/BA440 Enclosure Maintenance	EK–348A*–MG
EFxx-Series Solid State Disk User Guide	EK–EF51x–UG
Microsystems Options	EK–192A*–MG
MicroVAX Diagnostic Monitor User's Guide	AA–FM7A*–DN
R400X Expander Installation and Maintenance	EK–349A*–MG
TX86 Series Cartridge Tape Subsystems	EK–OTX86-OM
TZ87 Cartridge Tape Subsystems	EK–OTZ87-OM
TZ88 DLT Series Tape Drive Owner's Manual	EK–TZ88N-OM
BA400 Series Mass Storage Devices	EK–441AC–IP
HSD05 DSSI-to-SCSI Bus Adapter Operation Information for BA400-Based VAX 4000 Systems	EK–HSDC5–IN
HSD10 DSSI-to-SCSI Bus Adapter Operation Information for VAX 4000 Systems	EK–HSD10–OP

―――――――――― **Note** ――――――――――

* Indicates the revision code. The latest revision is always shipped when a manual is ordered.

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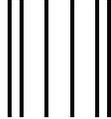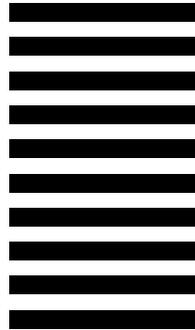
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