# DECsystem 5100 Maintenance Guide Addendum: RRD42, RZ23L, and TZK10 Drives

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## About This Manual

This document is an addendum to the *DECsystem 5100 Maintenance Guide* (EK-422AA-MG). It provides general information about the following options:

RRD42 disc drive
RZ23L hard disk drive
TZK10 cartridge tape drive

## Audience

This manual is intended only for Digital Customer Services personnel and self-maintenance customers. Readers should be familiar with the options.

## Organization

This manual contains 3 chapters and 1 appendix:

- Chapter 1 provides general information about the RRD42 disc drive.
- Chapter 2 provides general information about the RZ23L hard disk drive.
- Chapter 3 provides general information about the TZK10 cartridge tape drive.
- Appendix A provides a list of related documentation.

## Related Documentation

See Appendix A for a list of related documentation.

## Conventions

The following conventions are used in this manual:

| Convention | Meaning |
|---|---|
| CAUTION | Provides information to prevent damage to equipment or software |
| NOTE | Provides general information about the current topic |
| P/N | Part number |

# 1
# RRD42 Disc Drive

This chapter provides general information about the RRD42 disc drive.

## 1.1 Description

The RRD42 disc drive is a half-height, 5¼-inch, 600-megabyte, compact disc, storage device.

The RRD42 disc drive has the following features:

- Audio playback capability; it has audio line outputs and a headphone jack
- Uses the SCSI-2 (small computer system interface) bus
- Functions in a horizontal or vertical position

The RRD42 disc drive can be used as the load device for operating system software and layered products. It is designed to be installed in the host system.

The RRD42 disc drive is supported under the following operating systems:

ULTRIX
VMS
MS-DOS
SCO UNIX

## 1.2 Controls and Indicators

Table 1–1 describes the functions of the controls on the front of the drive.

**Table 1–1 RRD42 Disc Drive Front Controls**

| Controls | Function |
|---|---|
| Caddy insertion slot | Accepts a caddy loaded with a disc |
| Emergency eject hole | Accepts a rod to manually eject a caddy |
| Eject button | Ejects the caddy from the drive when power is on |
| Busy indicator | Lights when data is read from the disc, and blinks during seek operations |
| Headphone level control | Adjusts the volume |
| Headphone jack | Accepts headphone connector |

Table 1–2 describes the functions of the drive's rear components.

**Table 1–2 RRD42 Disc Drive Rear Components**

| Components | Function |
|---|---|
| Jumpers for SCSI bus ID | Specifies assignment of the RRD42 drive SCSI bus ID |
| Mode select jumper | Selects mode |
| SCSI bus interface connector | Connects the drive to a SCSI host adapter using a connecting cable |
| Power-in connector | Connects the drive to the power supply within the computer |
| Frame ground tab | Grounds the drive to the host computer when the drive frame is not in direct contact with the computer |
| Audio output connector | Connects output to the external audio amplifier |

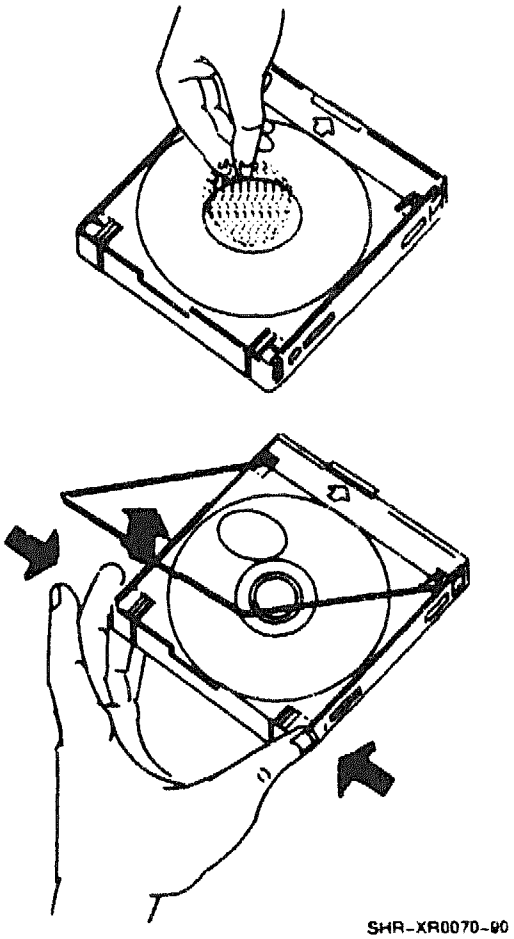
# 1.3 Using the RRD42 Disc Drive

This section briefly describes how to use the RRD42 disc drive.

## 1.3.1 Placing the Disc in the Caddy

Follow these steps to place the disc in the caddy:

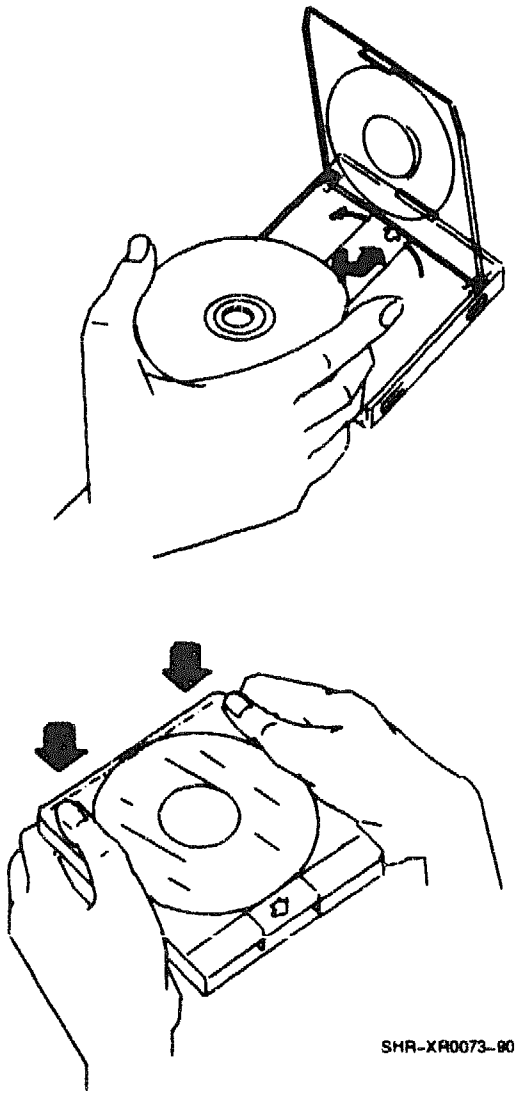
1. If a protective film is on the lid of the caddy, remove the film before using the caddy.
2. To open the lid of the caddy, press the tabs on both sides, and lift the lid.



SHR-XR0070-90

3. Hold the disc by the edges, and place the disc (with disc label up) into the caddy.

**CAUTION**
**Do not touch the surface of the disc beneath the edge of the caddy.**



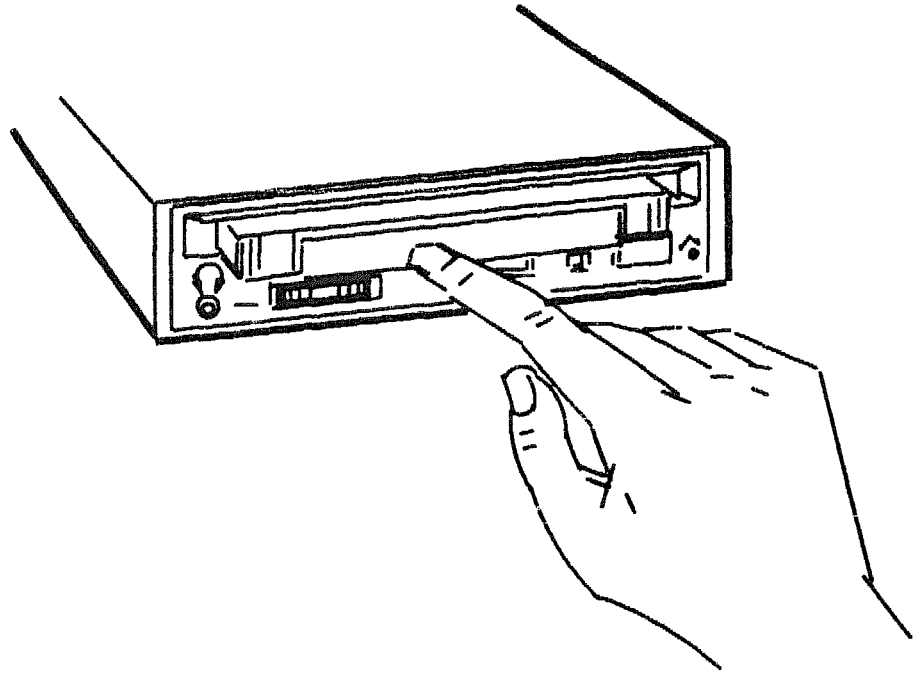

4. Close the lid firmly.

## 1.3.2 Loading the Drive

Follow these steps to load the drive:

**NOTE**
**Make sure the supporting software is installed in the host system before operating the drive.**

1. Insert the caddy into the caddy insertion slot.



SHR-XR0074-90.RAGS

   The drive reads the table of contents (TOC) on the disc. The busy indicator lights while the TOC is read.

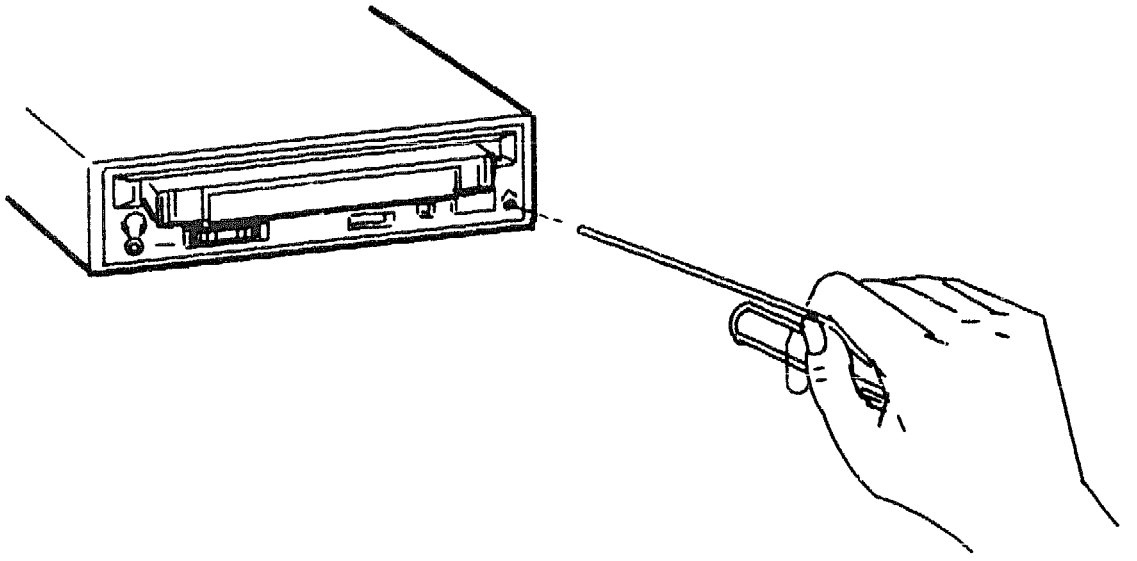
2. When the busy indicator goes off, the drive is ready to receive the command from the host computer.

3. Follow the instructions provided by the host system's software manual.

### 1.3.3 Ejecting the Caddy

With the power on, press the eject button on the drive to eject the caddy. If the eject button is disabled by the software or if power to the drive is turned off, the eject button will not function. If the drive does not eject the caddy after you press the eject button, then follow these procedures for manually ejecting the caddy:

1. Turn off the power to the drive.
2. Insert a steel rod, about 1.2 millimeters in diameter and 35 millimeters (1.37 inches) long, and push the rod into the emergency eject hole. A rod can be made by straightening a large paper clip.



SHR-XR0075-90B

# 1.4 Configuration

This section describes how to configure the drive.

## 1.4.1 Mode Select Jumper

**CAUTION**
**The mode select jumper is a user-selectable feature. If you do not select the correct mode, the drive does not operate properly.**

The mode select jumper has two modes:

- Mode 0 - default mode

  When the drive is shipped from the factory, the jumper is **not** installed. The drive operates in the default mode with a block size of 2 kilobytes. Use mode 0 under MS-DOS and SCO UNIX operating systems.

- Mode 1 - standard mode

  When the jumper is installed, the drive operates in standard mode with a block size of 512 bytes. Use mode 1 under VMS and ULTRIX operating systems.

The mode select jumper does not affect other operations.

**NOTE**
**The microcode revision reported by the RRD42 disc drive depends on the mode that the drive is running on.**

## 1.4.2 Assigning the SCSI ID

Follow these guidelines for assigning the SCSI ID:

- Assign the SCSI ID number for each drive using the ID select jumper on the rear.
- Be sure to assign a unique ID number to each SCSI device.

Figure 1–1 shows the location of the RRD42 ID select jumper. Table 1–3 lists the RRD42 ID select jumper settings.

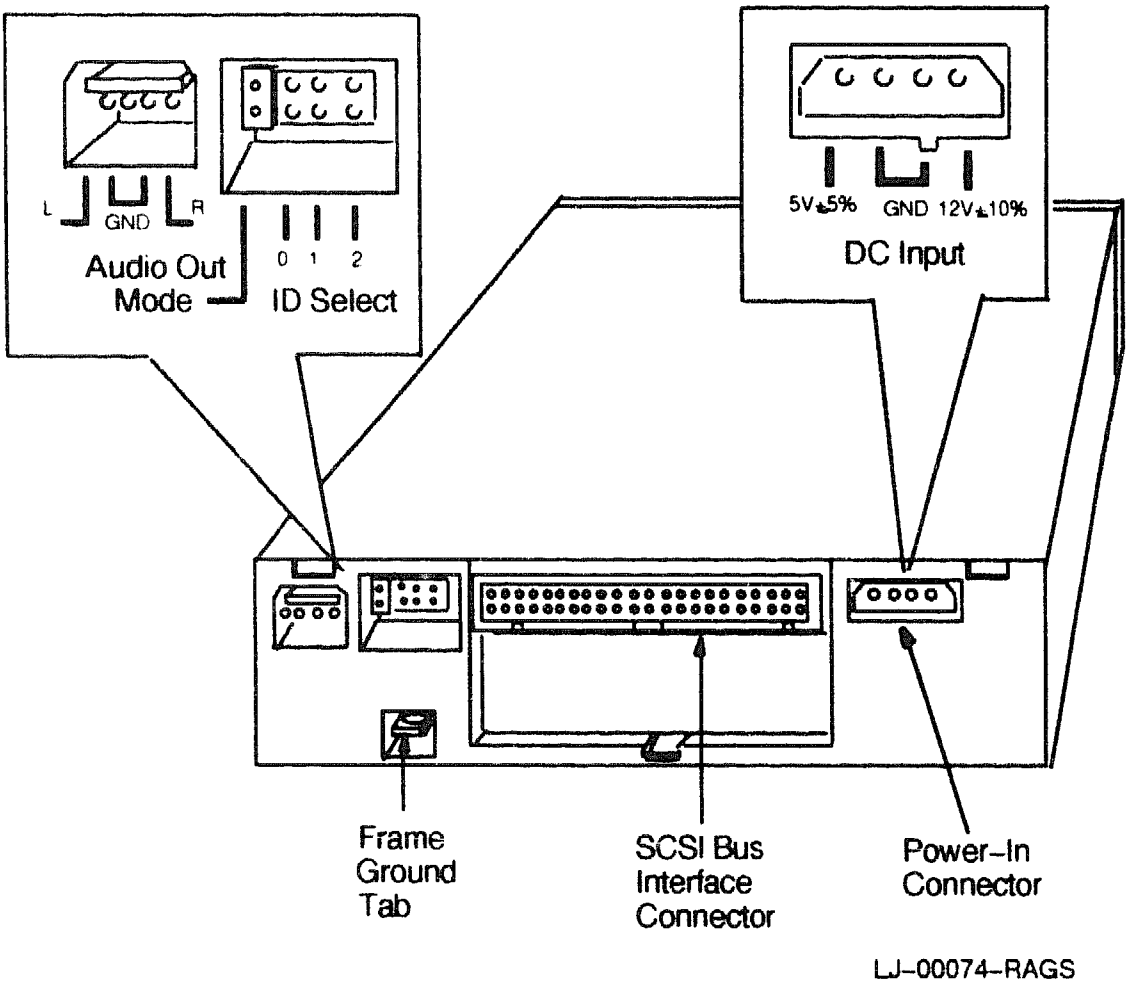



**Figure 1–1 RRD42 ID Select Jumper Location**

**Table 1–3 RRD42 ID Select Jumper Settings**

| SCSI ID | 0 | 1 | 2 |
|---|---|---|---|
| 0 | Out | Out | Out |
| 1 | In | Out | Out |
| 2 | Out | In | Out |
| 3 | In | In | Out |
| 4 | Out | Out | In |
| 5 | In | Out | In |
| 6* | Out | In | In |
| 7 | In | In | In |

*Reserved address ID - do not use.

## 1.5 Installation

This section briefly describes how to install the RRD42 disc drive.

### 1.5.1 RRD42 Disc Drive Installation Procedure

1. Have the customer shut down the ULTRIX operating system, by using the shutdown command.
2. At the console prompt (>>), enter the TEST 0x0 command to run the ROM-based diagnostics to ensure that the system has no problems.
3. At the console prompt (>>), enter the conf -f command to determine existing SCSI address ID's.
4. Power down the system.
5. Remove the top cover from the system, by loosening the two captive screws located at the rear of the system. Slide the cover forward and remove it.
6. Remove the upper drive tray.
   a. Mark and remove the SCSI cabling from the drive(s) on the upper drive tray.
   b. Disconnect the tray power harness connector from the side of the power supply.

c. Loosen the four captive screws on the upper tray.

d. Leave the drive(s) attached to the tray. Lift the tray and drive(s) up and away from the system.

7. Remove the lower drive tray.

a. If there are SCSI devices installed on this tray, mark and disconnect the SCSI cable and the power harness from the rear of the devices.

b. Note the location of the cables in the slots of the partition. Pull the cables out of the slots and set them aside.

c. Lift the partition out and set it aside.

**NOTE**
**The partition is designed so that it can be installed in the system in only one way.**

d. Loosen the four captive screws on the drive tray. Remove the three screws located on the right hand side of the tray. Lift the tray up and away from the system.

8. Mount the RRD42 to the drive tray.

**NOTE**
**The RRD42 is installed on the right-hand side of the lower drive tray.**

a. Install two shoulder screws (P/N 12-27886-02) and two rubber grommets (P/N 90-00018-02) into the threaded holes on the bottom left side of the drive.

b. Place the drive on the lower drive tray and position the two screws over the drive tray slotted mounting holes.

c. Lower the drive so that the grommets engage the holes, and slide the drive towards the front of the tray.

d. Locate the drive tray mounting slots.

e. Slide one grommet into each of the slots. Install the two shoulder screws and tighten the screws.

9. Reassemble the system by reversing the steps.

## 1.5.2 Testing the RRD42

To test the drive, perform the following power-up diagnostic:

1. Power up the system.
2. At the console prompt (>>), type the conf -f command to verify that the system can see the RRD42, at the assigned SCSI ID, and the other installed drives. The following is an example of the system configuration display.

```
>> conf -f
   hardware: revision 1
   firmware: revision 4
   cpu: revision 2.32
   fpu: revision 3.32
   security switch: secure mode
   password: clear
   eeprom: valid
   ethernet hardre address: 09-00-2b-19-28-1d
   option board: DHT80 - Async Comm, 8 ports
   memory: total size 8MBs
        bank0   4MB  SIMMs   size   8MBs          0 bad pages
   scsi peripherals
     unit  type   product              removeable/fixed    capacity

     0     disk   RZ24       (C) DEC   fixed               200 MBs
     3     disk   RZ24       (C) DEC   fixed               200 MBs
     5     cdrom  RRD42      TM  DEC   removeable
```

3. Run the system diagnostic.

# 1.6 Specifications

Table 1–4 lists the specifications of the RRD42 disc drive.

**Table 1–4 RRD42 Disc Drive Specifications**

| Characteristic | Specification(s) |
|---|---|
| Acceptable disc | CDROM mode-1 data disc |
| | CDROM mode-2 data disc |
| | CD audio disc |
| | Audio-combined disc |
| Rotational speed | Innermost track: 530 r/min at |
| | CLV = 1.4 m/s |
| | Outermost track: 200 r/min at |
| | CLV = 1.2 m/s |
| Data transfer rate | Sustained rate: 150 Kbytes/s |
| | Burst rate: 1.5 Mbytes/s |
| Access time | Full stroke: 0.7 s (typical) |
| | Average 1/3 stroke: 0.45 s (typical) |
| External SCSI interface cable length | 6 m (19.69 ft) maximum |
| | 2 m (6.56 ft) for systems using the KZQSA adapter module |
| Audio output level [1] | Line out: 0.5 V at 47K Ω |
| | Headphone: 0.55 V at 32 Ω (at maximum volume) |

[1]Audio function support differs depending on the operating system.

Table 1–5 lists the environmental specifications.

**Table 1–5 RRD42 Disc Drive Environmental Specifications**

| Characteristic | Operating Specifications | Nonoperating Specifications |
|---|---|---|
| Temperature | 5°C (41°F) to 50°C (122°F) | -30°C (-22°F) to 55°C (131°F) |
| Relative humidity | 10% to 90% | 10% to 90% |
| Atmosphere | Noncondensing | Noncondensing |
| Maximum wet bulb | 28°C (82°F) | 46°C (115°F noncondensing) |
| Altitude | -1000 ft to 15000 ft | -1000 ft to 40000 ft |
| Temperature gradient | 11°C/h (20°F/h) | 20°C/h (36°F/h) |

Table 1–6 describes the physical specifications.

**Table 1–6 RRD42 Disc Drive Physical Specifications**

| Description | Dimensions |
|---|---|
| Width | 146.05 mm (5 3/4 in) |
| Height | 41.4 mm (1 5/8 in) |
| Depth | 203.2 mm (8 in) |
| Weight | 1.3 kg (2 lb, 14 oz) |

# 2
# RZ23L Hard Disk Drive

This chapter provides general information about the RZ23L hard disk drive.

## 2.1 Description

The RZ23L hard disk drive is a half-height, high-density, 3½-inch, 121 megabyte (formatted) disk drive with small computer system interface (SCSI) ability

The disk drive is a random-access, rotating memory device that stores data in fixed length blocks on 90-millimeter thin film rigid media disks. The storage medium contained within the drive is in a fixed, nonoperator-removable configuration.

The RZ23L hard disk drive has the following features:

- Provides memory storage for applications and user files
- Provides random-access data storage and retrieval
- Functions horizontally, vertically, or upside-down, depending on the hardware layout of the system

**NOTE**
**The RZ23L is a replacement for the RZ23 hard disk drive.**

## 2.2 Using the RZ23L Hard Disk Drive

To use the RZ23L, software must be installed on the disk. Use a diskette drive, a tape drive, or a CDROM drive to load the software on the RZ23L. The RZ23L hard disk drive is formatted (ready to receive information) when shipped from the factory.

## 2.3 Configuration

The RZ23L hard disk drive is not to be internally terminated. The SCSI bus must be terminated. Therefore, termination must be done within the host system itself or within the expansion boxes.

If you receive a drive or drive module with the terminator resistor packs installed, use needlenose pliers to remove them. The terminator resistor packs are located just behind the SCSI port connector.

Refer to the system documentation for the correct termination of the SCSI bus.

### 2.3.1 Assigning the SCSI ID

Follow these guidelines for assigning the SCSI ID:

- Assign the SCSI ID number for each drive using the ID select jumper.
- Be sure to assign a unique ID number to each SCSI device.

Figure 2–1 shows the location of the SCSI ID jumpers.

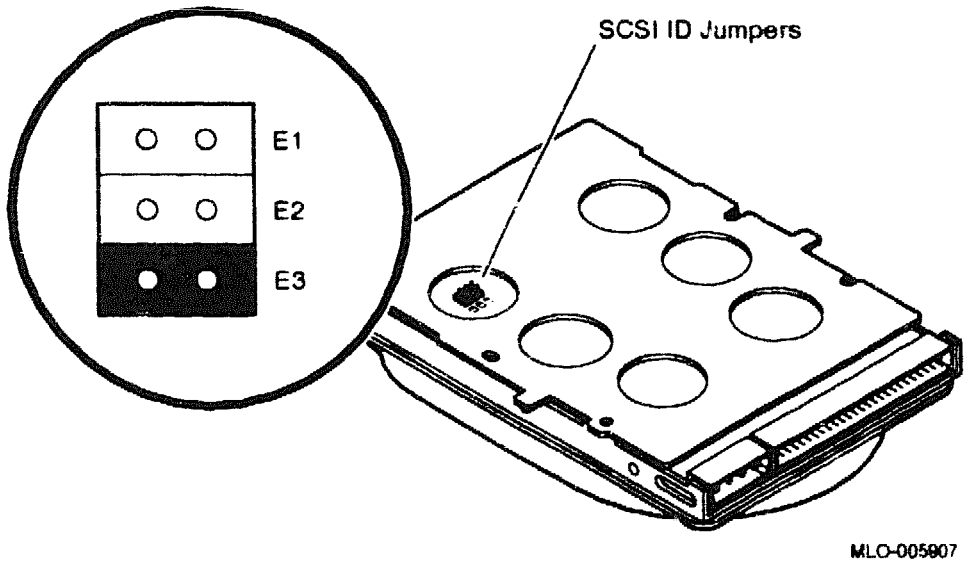



**Figure 2–1 RZ23L SCSI ID Jumper Location**

All SCSI devices are set to a default SCSI ID before the devices leave the factory. Default settings should be changed only when a system is configured with more than one of a particular device.

Table 2–1 shows the SCSI ID jumper settings.

**Table 2–1 SCSI ID Jumper Settings**

| SCSI ID | E1 | E2 | E3 |
|---|---|---|---|
| 0 | Out | Out | Out |
| 1 | In | Out | Out |
| 2 | Out | In | Out |
| 3 | In | In | Out |
| 4 | Out | Out | In |
| 5 | In | Out | In |
| 6* | Out | In | In |
| 7 | In | In | In |

*Reserved address ID - do not use.

## 2.4 Installation

The RZ23L disk drive can be installed on the upper drive tray or the lower drive tray of the system. The upper drive tray can hold a maximum of three RZ23L drives and the lower drive tray can hold two. The disk drive on the right side (as viewed from the front of the system) of the upper drive tray is the system disk.

Install the RZ23L into the system in the same way that you would install the RZ23 disk drive. Be sure to select the drive SCSI ID using the jumpers on the drive electronic module. Refer to the RZ23 installation procedures in the DECsystem 5100 system documentation.

## 2.5 Specifications

Table 2–2 describes the specifications of the RZ23L hard disk drive.

**Table 2–2 RZ23L Hard Disk Drive Specifications**

| Characteristic | Specifications |
|---|---|
| Interface | SCSI |
| Recording density (bits/in at ID) | 36,250 |
| Flux density (fci at ID) | 24,170 |
| Track density (tpi) | 1850 |
| Tracks/surface (formatted) | 1523 |
| Read/write heads | 4 |
| Disks | 2 |
| Time to process ECC (512 bytes) | <100 ms |

Table 2–3 describes the environmental specifications.

**Table 2–3 RZ23L Hard Disk Drive Environmental Specifications**

| Characteristic | Operating Specifications | Nonoperating Specifications |
|---|---|---|
| Ambient temperature | 10°C to 55°C (50°F to 122°F) | -40°C to 66°C (-40°F to 151°F) |
| Relative humidity | 8% to 80% | 8% to 95% (noncondensing) |
| Maximum wet bulb (noncondensing) | 25.6°C (78°F) | 46°C (115°F) |
| Altitude | -1000 ft to 15000 ft | -1000 ft to 40000 ft |
| Heat dissipation | 3.8 watts (seeking) | N/A |
| | 3.6 watts (Read/write mode) | N/A |
| Temperature gradient | 11°C/h (20°F/h) | 20°C/h (36°F/h) |

Table 2–4 describes the physical specifications.

**Table 2–4 RZ23L Hard Disk Physical Specifications**

| Characteristic | Specifications |
|---|---|
| Height | 25.40 mm (1.00 in) |
| Width [1] | 101.60 mm (4.00 in) |
| Depth | 144.05 mm (5.75 in) |
| Weight | 0.544 kg (1.2 lb) |

[1]Mounting bosses should not exceed 4.00 inches.

## Depositing or Retrieving Hard Disk Drives from Storage

When depositing or retrieving hard disk drives from storage conditions follow these guidelines:

- Avoid rapid transfers between cold and warm, humid environments that could cause damaging condensation.
- Allow a minimum of 12 hours soak-time in the intended operating environment, preferably in the original packing, before unpacking and operating the drive.

# 3
# TZK10 Cartridge Tape Drive

## 3.1 Description

The TZK10 cartridge tape drive is a half-height, 5¼-inch, streaming tape drive, that uses quarter-inch cartridges (QIC). The TZK10 provides archival storage and retrieval, and data collection activities. The TZK10 cartridge tape drive uses the small computer system interface (SCSI).

The TZK10 cartridge tape drive is one unit consisting of the drive and built-in controller logic.

The TZK10 has the following features:

- Functions in vertical and horizontal positions
- Uses status LED protocol

## 3.2 Controls and Indicators

The front of the TZK10 cartridge tape drive contains a single dual-color (glows green or amber) LED and an eject button (Figure 3–1).

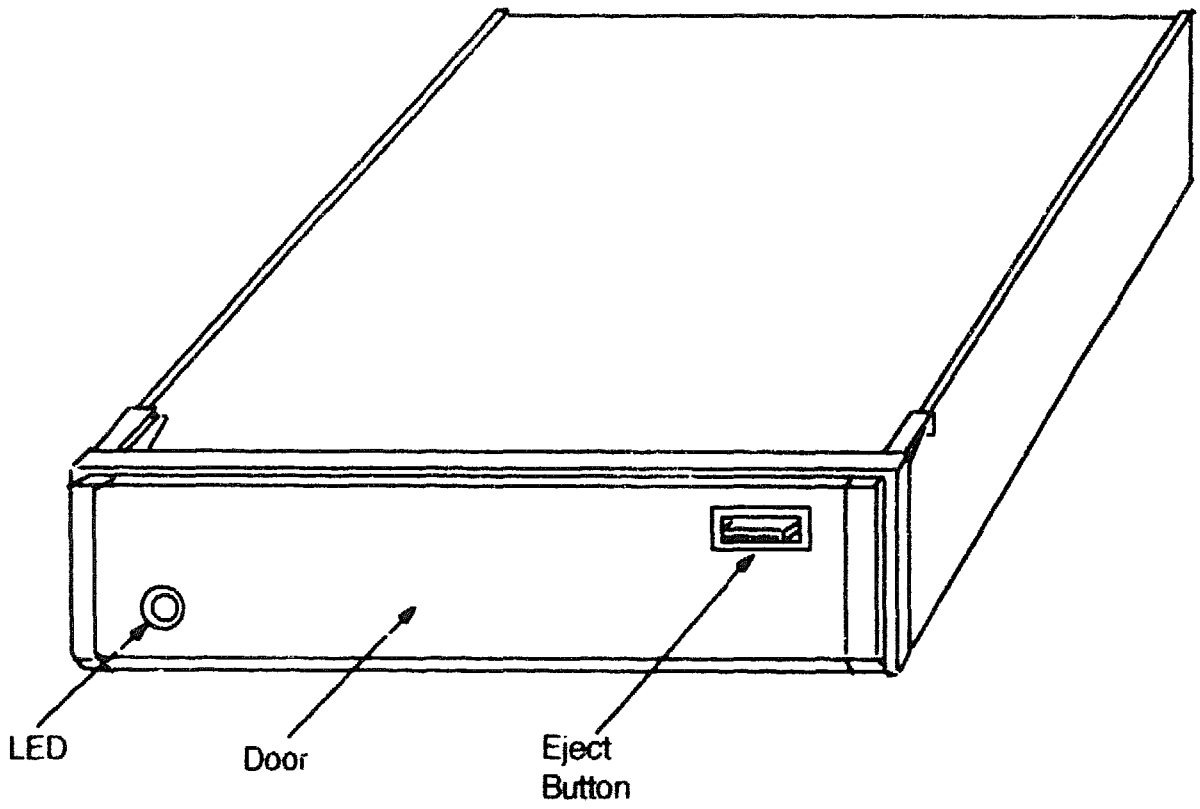



**Figure 3–1 TZK10 Cartridge Tape Drive (Front View)**

## 3.2.1 LED Indicator

Table 3–1 defines various states of the drive LED during operation.

**Table 3–1 LED Status**

| Drive Status | LED State |
|---|---|
| Tape not loaded | Off |
| Tape loaded[1] | Solid green |
| Tape in motion | Blinking green |
| Tape faulted | Solid amber |

[1]Tape is automatically loaded upon insertion of the cartridge tape.

### 3.2.2 Eject Button

The eject button unlocks the door and partially ejects the cartridge tape from the drive.

## 3.3 Using the Cartridge Tape

This section explains how to do the following procedures:

- Set the write-protect switch
- Insert a cartridge tape into the drive
- Remove a cartridge tape from the drive
- Retension the tape

### 3.3.1 Setting the Write-Protect Switch

Observe the following guidelines when setting the write-protect switch.

- If you are reading data or copying data from a tape, set the write-protect switch to SAFE (write-protect mode).
- If you are writing data, set the write-protect switch to the write-permit position.

### 3.3.2 Inserting the Cartridge Tape into the Drive

To insert the cartridge tape into the drive, follow these procedures:

1. Insert the cartridge tape into the drive with the cartridge's write-protect switch in the upper right corner.
2. Slide the cartridge straight into the cartridge area until you feel resistance.
3. Close the cartridge door.

When the tape is properly inserted, the LED glows solid green and the drive is ready to accept operating system commands.

### 3.3.3 Removing the Cartridge Tape from the Drive

After the tape is dismounted by the software, the LED goes from blinking green to solid green to indicate that you can remove the tape from the drive.

To remove the cartridge tape from the drive, follow these procedures:

1. Press the eject button. The door will open and the cartridge tape will eject part of the way.
2. Pull down on the cartridge door, grasp the cartridge tape, and slide it out of the drive.

### 3.3.4 Retensioning

It is recommend by Digital that the cartridge tape be conditioned by doing the following:

- Exposing it to the operating environment for a period equal to or greater than the period it has been out of the operating environment, up to a maximum of eight hours
- Running the tape one complete end-to-end pass (retensioning) in any of the following cases:
  - Each time the cartridge tape is inserted in the drive
  - After prolonged operation over a limited area
  - After exposure to a temperature change greater than 16°C (30°F)
  - After one hour of start-stop or shuffle operation

Retension the tape by performing the following ULTRIX command:

```
#mt -f/dev/rmtnh ret
```

where **n** equals the drive unit number

The retension command may be different for other operating systems or tape utilities. Refer to the system-specific documentation.

## 3.4 Configurations

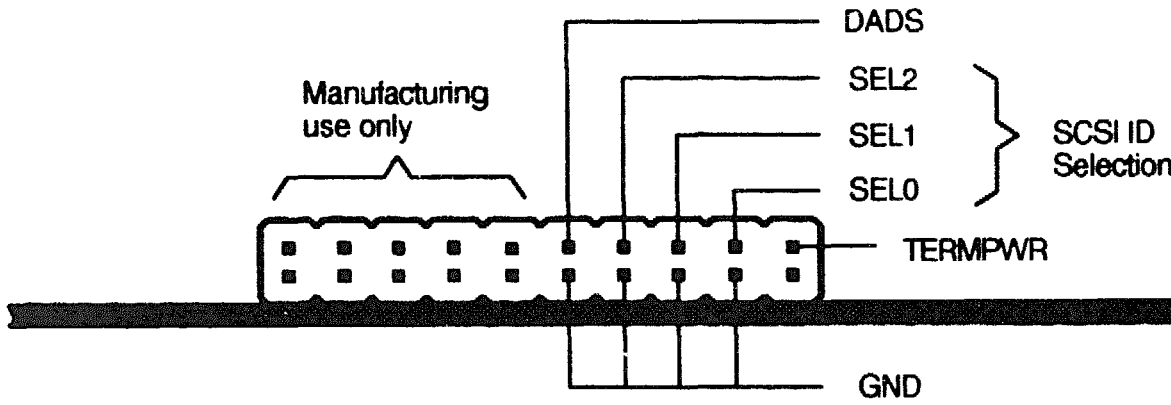
This section describes how to configure the tape drive.

### 3.4.1 SCSI ID Settings

TZK10 cartridge tape drive is set to a SCSI ID of 5 during manufacturing and, in most cases, the SCSI ID should not need to be changed. The only time these SCSI IDs may have to be changed is when a TZK10 cartridge tape drive is added to a host system that already has another TZK10 installed.

**NOTE**
**Each SCSI device must have its own SCSI ID.**

The SCSI ID is set or changed by adding jumpers to, or removing jumpers from, a connector at the rear of the tape drive. Figure 3–2 shows the jumper location.




DADS (Disable Auto Density) – When the jumper is installed, automatic density selection is disabled.

TERMPWR (Terminator Power) – When the jumper is installed, power for the terminator is provided by the drive.

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**Figure 3–2 TZK10 SCSI ID Jumper Location**

### The Disable Auto Density (DADS) Jumper

The disable auto density (DADS) jumper should be installed when using the VMS and ULTRIX operating systems. The DADS jumper should be removed when using the MS-DOS and SCO UNIX operating systems. See Figure 3–2 for the location of the DADS jumper.

Table 3–2 lists the jumper settings necessary to configure the TZK10 cartridge tape drive for a particular SCSI ID.

**Table 3–2 TZK10 SCSI ID Jumper Settings**

| SCSI ID | SEL2 | SEL1 | SEL0 |
|---|---|---|---|
| 0 | Out | Out | Out |
| 1 | Out | Out | In |
| 2 | Out | In | Out |
| 3 | Out | In | In |
| 4 | In | Out | Out |
| 5* | In | Out | In |
| 6† | In | In | Out |
| 7 | In | In | In |

*Default ID for the TZK10 tape drive

†Reserved address ID - do not use.

## 3.5 Installation

This section briefly describes how to install the TZK10 drive.

### 3.5.1 TZK10 Disc Drive Installation Procedure

1. Have the customer shut down the ULTRIX operating system, by using the shutdown command.
2. At the console prompt (>>), enter the TEST 0x0 command to run the ROM-based diagnostics to ensure that the system has no problems.
3. At the console prompt (>>), enter the conf -f command to determine existing SCSI address IDs.
4. Power down the system.
5. Remove the top cover from the system, by loosening the two captive screws located at the rear of the system. Slide the cover forward and remove it.
6. Remove the upper drive tray.
   a. Mark and remove the SCSI cabling from the drive(s) on the upper drive tray.
   b. Disconnect the tray power harness connector from the side of the power supply.
   c. Loosen the four captive screws on the upper tray.
   d. Leave the drive(s) attached to the tray. Lift the tray and drive(s) up and away from the system.
7. Remove the lower drive tray.
   a. If there are SCSI devices installed on this tray, mark and disconnect the SCSI cable and the power harness from the rear of the devices.

b. Note the location of the cables in the slots of the partition. Pull the cables out of the slots and set them aside.

c. Lift the partition out and set it aside.

**NOTE**
**The partition is designed so that it can be installed in the system in only one way.**

d. Loosen the four captive screws on the drive tray. Remove the three screws located on the right hand side of the tray. Lift the tray up and away from the system.

8. Mount the TZK10 to the drive tray.

**NOTE**
**The TZK10 is installed on the right hand side of the lower drive tray.**

a. Install two shoulder screws (P/N 12-27886-02) and the two rubber grommets (P/N 90-00018-02) into the threaded holes on the bottom left side of the drive.

b. Place the drive on the lower drive tray and position the two screws over the drive tray slotted mounting holes.

c. Lower the drive such that the grommets engage the holes and slide the drive towards the front of the tray.

d. Locate the drive tray mounting slots.

e. Slide one grommet into each of the slots. Install the two shoulder screws and tighten the screws.

9. Reassemble the system by reversing the steps.

## 3.5.2 Testing the TZK10

To test the drive, perform the following power-up diagnostic:

1. Power up the system.
2. At the console prompt (>>), type the conf -f command to verify that the system can see the TZK10, at the assigned SCSI ID, and the other installed drives. The following is an example of the system configuration display.

```
>> conf -f
   hardware: revision 1
   firmware: revision 4
   cpu: revision 2.32
   fpu: revision 3.32
   security switch: secure mode
   password: clear
   eeprom: valid
   ethernet hardre address: 09-00-2b-19-28-1d
   option board: DHT80 - Async Comm, 8 ports
   memory: total size 8MBs
        bank0   4MB  SIMMs   size   8MBs        0 bad pages
   scsi peripherals
    unit   type   product                removeable/fixed    capacity

    0      disk   RZ24        (C) DEC    fixed               200 MBs
    3      disk   RZ24        (C) DEC    fixed               200 MBs
    5      tape   TZK10       (C) DEC    removeable
```

3. Test the TZK10 drive by invoking either the canned tape test (CT) or the level 2 internal drive diagnostics (S2). The following procedures and examples show how to use the two test commands:

   a. Load a write-enabled scratch tape into the TZK10.

   b. At the console prompt type SCSI, the test type (CT or S2), and the SCSI ID number.

   c. Using the help screen provided, determine whether or not your system ROM supports the CT or S2 test.

```
>>SCSI CT 5
Are you ready?
Y/N? Y

- self test completed OK
```

```
>>SCSI S2 5
invoking self test 2 ...
If testing a tape drive, insert a scratch tape.
Are you ready?
Y/N? Y

- self test completed OK
```

**NOTE**
**The CT is a short read/write test that runs for only 30 seconds.**
**The S2 is a comprehensive read/write test that runs for 6 minutes.**

**The number 5 in the examples denote the SCSI ID number.**

## 3.6 Specifications

Table 3–3 describes the TZK10 cartridge tape drive specifications.

**Table 3–3 TZK10 Cartridge Tape Drive Specifications**

| Characteristic | Specification |
|---|---|
| Drive interface | SCSI-2 |
| Media | DC6320/DC6525 or Digital-approved equivalent |
| Track width, write | 0.1778 mm +0.0000 mm/-0.0127 mm (0.0070 in +0.0000 in /-0.0005 in) |
| Track width, read | 0.1270 mm +0.0127 mm/-0.0000 mm (0.0050 in +0.0005 in /-0.0000 in) |
| Data density | 16,000 bits/in |
| Number of tracks | 26 |
| Transfer rate | 200 Kbytes/s at average streaming mode<br>1.5 Mbytes/s at SCSI (maximum) |
| Tape speed | 3.05 cm/s (120 ips) |
| Track format | Multiple track serpentine recording |
| Cartridge capacity | 320 Mbytes, formatted (approximately)<br>- DC6320 |
| | 525 Mbytes, formatted (approximately)<br>- DC6525 |

Table 3–4 lists the power requirements.

**Table 3–4 TZK10 Cartridge Tape Drive Power Requirements**

| Characteristic | Specification |
|---|---|
| Power | +12 V ± 5% @ 1.0 A (2.0 A surge), 150 mV ripple peak-to-peak |
| | +5 V ± 5% @ 1.2 A (1.8 A surge), 150 mV ripple peak-to-peak |
| Power consumption | |
| Nominal | 20 W |
| Peak | 33 W |

Table 3–5 lists the environmental specifications.

**Table 3–5 TZK10 Cartridge Tape Drive Environmental Specifications**

| Characteristic | Operating Specifications | Nonoperating Specifications |
|---|---|---|
| Temperature | 5°C (41°F) to 40°C (104°F) | -30°C (-22°F) to +60°C (151°F) |
| Relative humidity | 20% to 80% RH maximum | 10% to 90% RH maximum |
| Altitude | 2.4 km (13,000 ft) | 4.9 km (40,000 ft) |

Table 3–6 lists the physical specifications.

**Table 3–6 TZK10 Cartridge Tape Drive Physical Specifications**

| Characteristic | Dimensions |
|---|---|
| Width | 146.05 mm (5.75 in) |
| Height | 44 mm (1.732 in) |
| Depth | 208.28 mm (8.20 in) |
| Weight | 1.1 kg (2.4 lb) |

# A
# Related Documentation

The following table provides a list of documentation related to the options described in this manual.

**Table A–1 Related Documentation**

| Documentation | Part Number |
|---|---|
| RRD42 Disc Drive Owner's Manual | EK-RRD42-OM |
| RZXX Disk Drive Subsystem Pocket Service Guide | EK-RZXX-PS |
| TZK10 Cartridge Tape Drive Owner's Guide | EK-TZK10-OG |

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EK–DSYST–ER. A01

# DECsystem 5100 Maintenance Guide Addendum Errata

This document provides corrections for Chapter 1 of the *DECsystem 5100 Maintenance Guide Addendum*, EK-DSYST-AD.

## RRD42 Disc Drive Installation Procedure (Page 1–10)

**Step 7c should read as follows:**

7. Remove the lower drive tray.

   c. Carefully remove the partition (P/N 74-42127-01) that is connected between the upper and lower drive shelves. The partition is the part that has several "fingers" that touch the upper shelf.

      Note how the partition is mounted, so you can reinstall it later.

      **CAUTION**

      **Do not pull the partition directly upward and out of the system. This will damage the partition.**

      To remove the partition from the lower shelf, proceed as follows:

      1. Facing the front of the enclosure, gently pull the partition forward, with both hands near the middle of the partition.
      2. Pull forward (toward the devices on the lower shelf, if present) and lift up to release the two securing tabs underneath the shelf. When the securing tabs are not catching on the lower shelf, the partition should come out easily.
      3. Set the partition aside.

      **NOTE**

      **To completely remove the partition from the enclosure, you must remove the SCSI cable from the slots in the partition.**

      **The SCSI cable and power cables are routed through the curved slots in the partition to the devices that are mounted on the lower drive shelf. The cables will have to be routed the same way for reassembly.**

**Step 8 should read as follows:**

8. Mount the RRD42 to the drive tray.

**NOTE**

**The RRD42 can be installed only on the left-hand side of the lower drive tray.**

a. Facing the front of the drive, loosely install two shoulder screws (P/N 12-27886-02) through two rubber grommets (P/N 90-00018-02) and insert them into the threaded holes on the left side of the drive.

b. Place the drive on the lower drive tray and position the two screws over the drive tray slotted mounting holes. (The mounting holes are shaped like keyholes.)

c. Lower the drive so that the grommets engage the holes, and slide the drive towards the back of the tray.

d. Locate the drive mounting slots on the side of the shelf.

e. Slide one grommet into each of the slots. Install the two shoulder screws through the grommets and tighten the screws.

f. Tighten the screws in the drive tray slotted mounting holes.

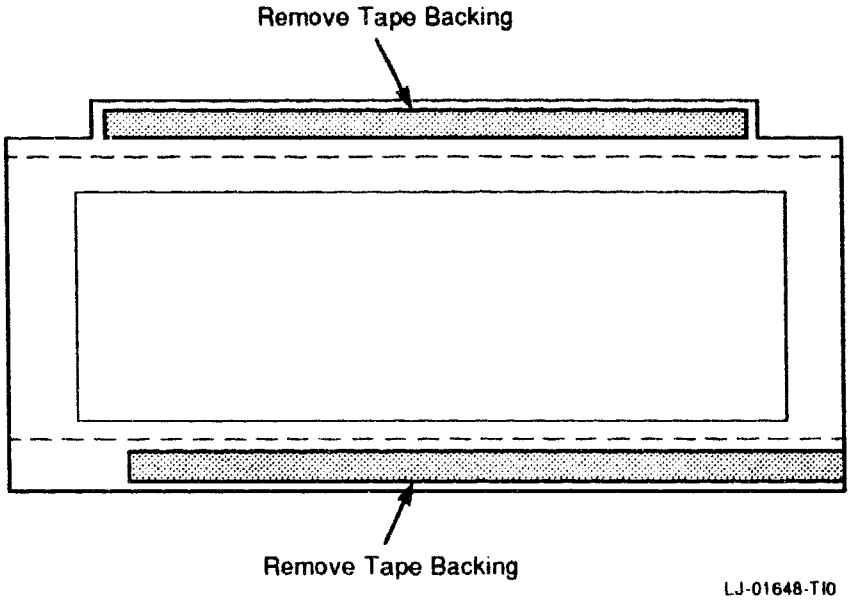
**The following step should be inserted between steps 8 and 9:**

8.1 Insert the bezel (P/N 74-44536-01) in the left-hand slot of the system cover.

a. On the bezel, remove the backing from the double-sided tape in two places. See Figure 1. Be sure not to remove the tape; remove only the backing.

The double-sided tape on the bezel will adhere to the inside of the cover.

**Figure 1 Removing the Double-Sided Tape Backing**



b. Fit the bezel into the inside of the cover. (Looking at the slots from the inside of the cover, the bezel will fit over the slot on the right-hand side.)

The corners on the bezel that have tabs should be facing up. The bezel should slide between the fingers and the cover until it is seated against the left corner and bottom edge of the cover. See Figure 2.

**Figure 2 Inserting the Bezel**

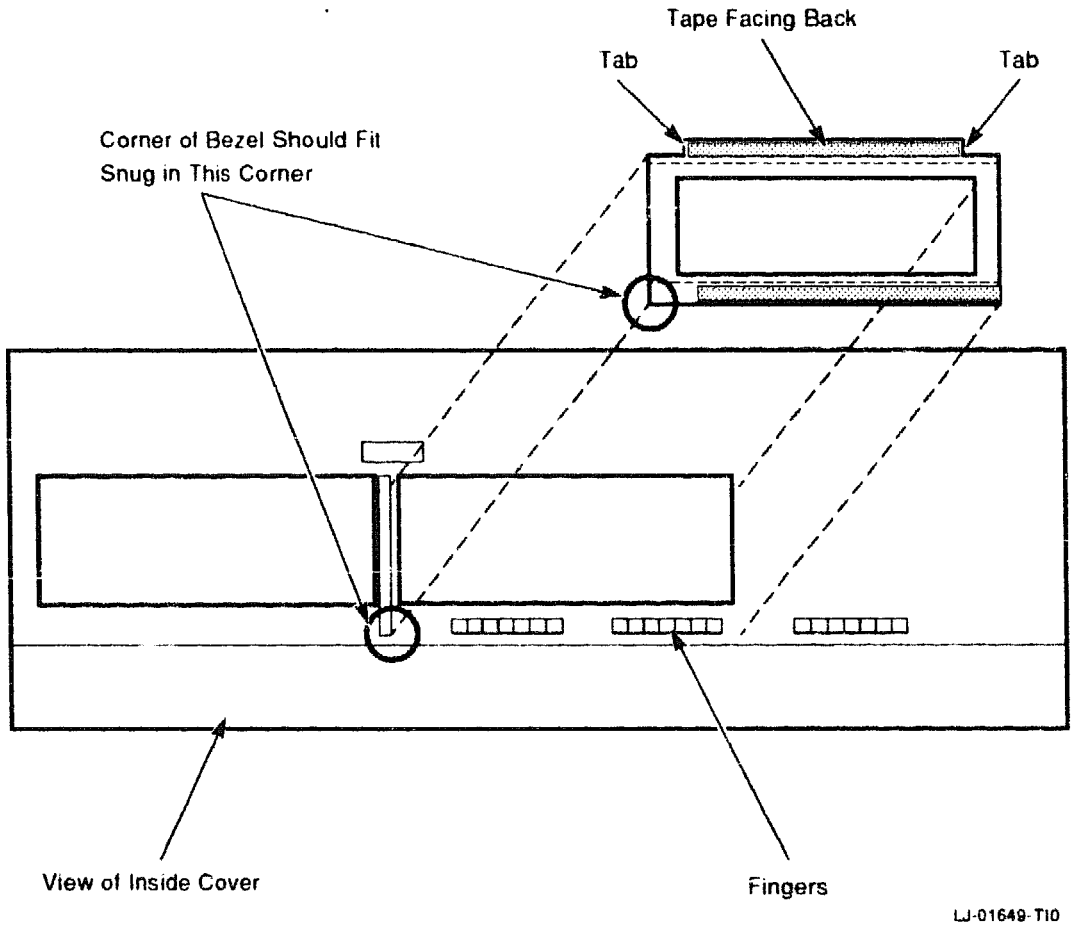


Figure 3 shows the view of the inside of the cover with the bezel in place.

**Figure 3 Bezel Location Inside Cover**