RRD42 Disc Drive Owner's Manual

Order Number EK-RRD42-OM-003

Digital Equipment Corporation

First Edition, February 1991

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- Reorient the receiving antenna.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: *How to Identify and Resolve Radio-TV Interference Problems*. This booklet is available from the US Government Printing Office, Washington, DC 20402, Stock No. 004–000–00398–5

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- CLASS 1 LASER PRODUCT
- LASER KLASSE 1
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USE POWER CORD 17-03040-01. DO NOT USE ANY OTHER POWER CORD.

Plug Cap	Parallel blade with ground pin (NEMA 5-15P Configuration)
Cord	Type SVT or SJT, three 16 or 18 AWG wires (shielded)
Length	Maximum 15 feet
Rating	Minimum 10 A, 125 V

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UTILISER CORDON D'ALIMENTATION 17-03040-01. N'UTILISER AUCUN AUTRE CORDON D'ALIMENTATION.

Fiche	Lame parallé avec une broche de mise à la terre (Configuration NEMA 5-15P)
Cordon	Type SVT ou SJT, trois fils 16 ou 18 AWG (blindé)
Longeur	Maximum 15 pieds
Capacité	Minimum 10 A, 125 V

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Laser

- Typ: Halbleiterlaser GaAlAs
- Wellenlänge: 780 nm
- Ausgangsleistung: 0,6 mW
- Strahldivergenz: 53,4°±1,5°

ZU IHRER SICHERHEIT

Vorsicht

Um Feuergefahr und die Gefahr eines elektrischen Schlages zu vermeiden, darf das Gerät weder Regen noch Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur einem Fachmann.

Überlassen Sie Wartungsarbeiten dem von Sony zugelassenen Fachmann.

Achtung

Da der interne Laserstrahl in lhre Augen eindringen und Verletzugen verursachen kann, darf das Gehäuse nicht selbst geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur einem Fachmann.

Die Verwendung von Brillen, Kontaktlinsen usw. vergrößert die Gefahr.

Zur besonderen Beachtung

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Sollte ein fester Gegenstand oder Flüssigkeit in das Geräteinnere gelangen, trennen Sie das Gerät von der Wandsteckdose ab und lassen Sie es von einem Fachmann überprüfen, bevor Sie es weiter verwenden.

Zum Abziehen des Kabels fassen Sie stets am Stecker und niemals am Kabel selbst an.

Zur Aufstellung

Stellen Sie das Gerät weder auf einer weichen Unterlage (z.B. Decke, Teppich) noch in der Nähe von Vorhängen, Tapeten usw. auf, da hierdurch die Ventilationsöffnungen blockiert werden können.

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Verwenden Sie zur Reinigung des Gehäuses, des Bedienungspultes und der Bedienungselemente ein trockenes, weiches Tuch oder ein weiches, leicht mit mildem Haushaltsreiniger angefeuchtetes Tuch. Lösemittel wie Alkohol oder Benzin dürfen nicht verwendet werden, da diese die Gehäuseoberfläche angreifen.

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A RRD42 Disc Drive Specification

Specification A–1

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About This Manual

Introduction

Purpose

This manual describes the RRD42 disc drive, the drive's installation, and the drive's specifications.

Intended Audience

This manual is intended for the owner of the RRD42 disc drive. No prerequisites are necessary to use this manual.

Manual Structure

Chapter 1 describes the RRD42 disc drive.

Chapter 2 shows how to install the RRD42 disc drive.

Chapter 3 shows how to use the RRD42 disc drive.

Chapter 4 shows how to maintain the RRD42 disc drive and how to solve drive problems.

Appendix A provides RRD42 disc drive specifications.

1 RRD42 Disc Drive Product Description

Overview

Description

The RRD42 disc drive is a half-height, 5¼-inch, 600-megabyte, compact disc, storage device compatible with Digital systems. The drive, capable of audio playback, has audio line outputs and a headphone jack.

NOTE
The audio capability is included in the hardware and is operating system dependent. Operating system support will be added when it becomes available.

The device uses the SCSI-2 (small computer system interconnect) bus, and can be used on low-end, desktop, and Digital workstation systems.

Two Drive Versions

The RRD42 drive is the primary load device for operating system software and layered products. Two versions of the drive are available: the tabletop version and the embedded version. Although the installation of the drives differ, they function the same. Figure 1–1 shows the RRD42 front panel.

Tabletop Drive

The RRD42 tabletop drive is a standalone unit and contains industry-standard SCSI connectors on the rear panel. An address selection switch, 3-pin ac connector, and audio output jacks are also on the rear panel.

Embedded Drive

The RRD42 embedded drive is designed to be installed in a host system. The embedded drive can be used in a horizontal or vertical position.

RRD42 Drive

Figure 1–1 shows the RRD42 disc drive.

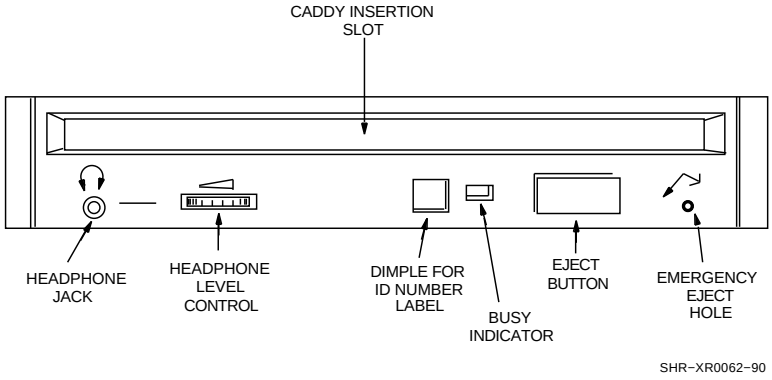

Figure 1–1 RRD42 Drive — Tabletop and Embedded

System Support

The RRD42 drive subsystem is supported under VMS, ULTRIX, MS–DOS, and SCO UNIX operating systems.

To determine the correct operating system level, consult your Digital sales representative.

Ordering Additional Disc Caddies

To order additional disc caddies, contact your Digital sales representative or DECdirect ordering service. Refer to part number 30-34512-01.

2 Generic Installation

Familiarizing Yourself with the Drive

In this Chapter

This chapter describes:

- Becoming familiar with the drive
- Connecting the cables
- Installing the RRD42 tabletop drive
- Installing the RRD42 embedded drive
- Setting the SCSI ID address
- Verifying installation with power-on self-test (POST)

This chapter provides general installation procedures. This chapter does not give specific, host system installation instructions.

Part Locations

To familiarize yourself with the tabletop and embedded drives' buttons, switches, and connectors, see Figure 2–1. The tabletop and embedded drives have the same front panel.

See Figure 2–2 for a rear view of the RRD42 tabletop drive and Figure 2–3 for a rear view of the RRD42 embedded drive.

RRD42 Drive Front Panel

Figure 2–1 shows the front panel of the RRD42 drive.

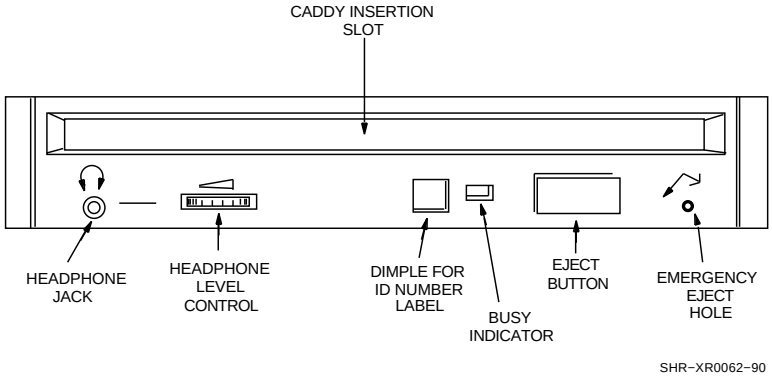

Figure 2–1 Front Panel of the RRD42 Drive

RRD42 Drive Rear Panel — Tabletop

Figure 2–2 shows the rear panel of the RRD42 tabletop drive.

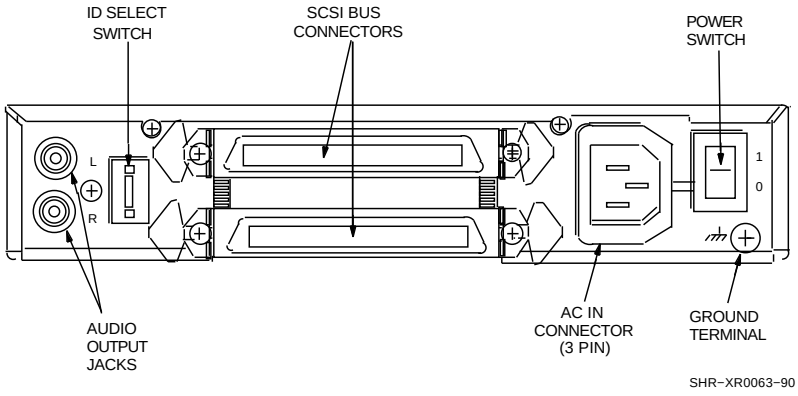

Figure 2–2 Rear Panel of the Tabletop Drive (–DA Version)

Mode Select Jumper

IMPORTANT

The mode select jumper is a USER-SELECTABLE feature for the embedded drive only. If you do not select the correct mode, the drive does not operate properly.

The mode select jumper has two modes:

Mode 0 — Jumper Out. In this mode the drive block size is 2 kilobytes. Use Mode 0 under MS–DOS and SCO UNIX operating systems.

Mode 1 — Jumper In. When the jumper is installed, the drive operates 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 selected.

RRD42 Drive Rear Panel — Embedded

Figure 2–3 shows the rear panel of the RRD42 embedded drive with the jumper installed (Mode 1).

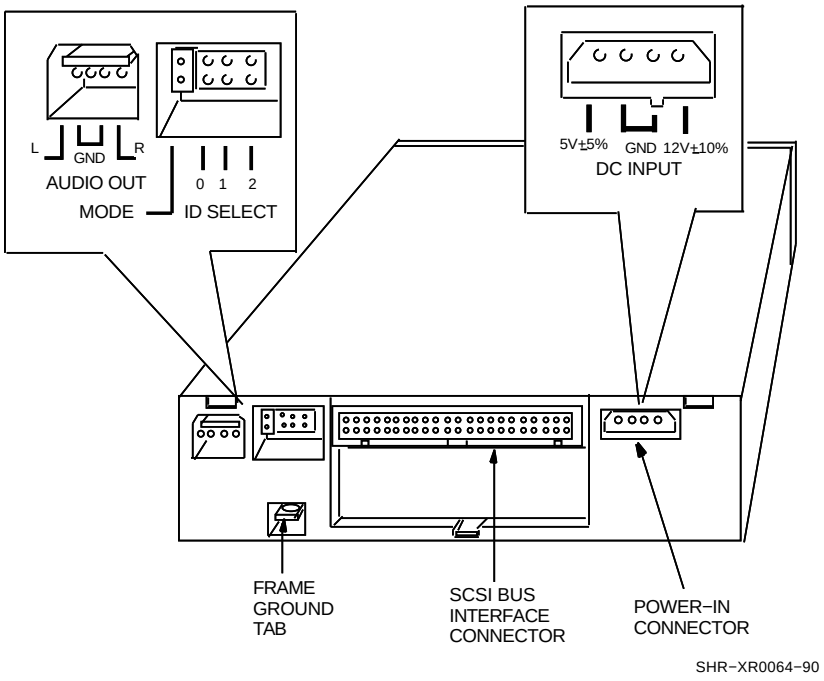

Figure 2–3 Rear Panel of the Embedded Drive (–AA Version)

Connecting the Cables

Connecting Tabletop Drive to System

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

If you are connecting an RRD42 tabletop drive directly to your system, use the SCSI signal cable supplied in your system installation kit..

If you do not have this cable, contact your Digital sales representative. Use a cable supplied by Digital Equipment Corporation. Failure to do so may result in degraded performance of your RRD42 drive.

To connect a SCSI cable — drive to system — perform the following steps:

1. See Figure 2–4.
2. Connect one end of the cable to the host system SCSI port.
3. Connect the other end of the SCSI signal cable to the top SCSI connector on the rear of the RRD42 drive.
4. Snap the wire cable clamps into place to secure the SCSI cable.
5. Connect the SCSI terminator to the bottom SCSI connector on the rear of the RRD42 drive, if this device is to be the last unit on the bus.
6. Snap the wire cable clamps into place to secure the terminator.

Figure 2–4 shows how to connect the tabletop drive to a host system.

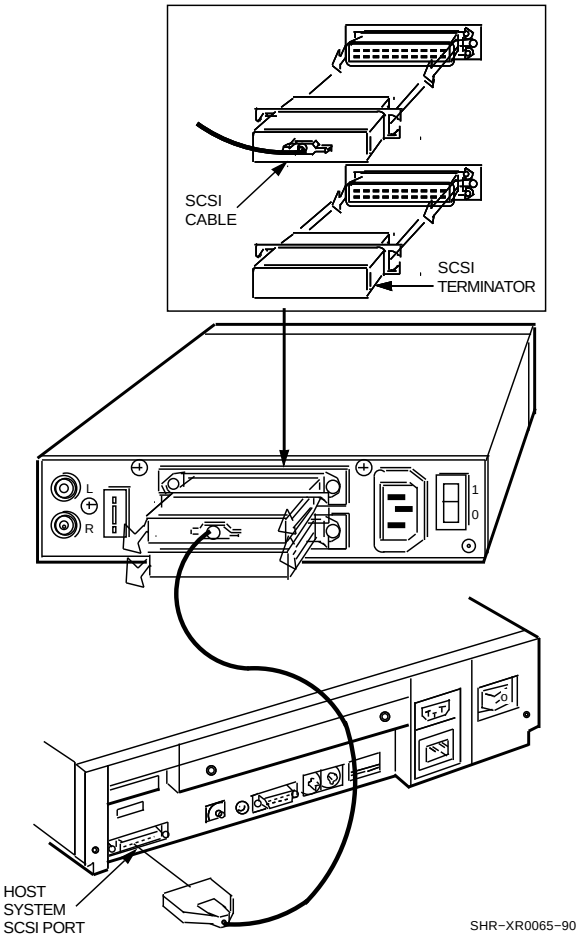

Figure 2–4 Connecting a SCSI Signal Cable — Drive to System

Connecting Tabletop Drive to Tabletop Drive

If you already have a tabletop SCSI device connected to your system, you can connect the RRD42 drive to that device. For drive to drive connections, use a 50-pin to 50-pin SCSI signal cable.

1. See Figure 2–5.
2. If present, remove the SCSI terminator from the existing SCSI drive.
3. Connect one end of a SCSI signal cable to the existing SCSI drive.

   NOTE
   If the host system uses a KZQSA adapter module, the SCSI cables must be type BC06P (part number 17-02659). Other systems can use the standard cable option BC19J (part number 17-01351-xx).

4. Snap the wire cable clamps onto the cable to secure it.
5. Connect the other end of the SCSI signal cable to the top SCSI connector on the RRD42 drive.
6. Snap the wire cable clamps onto the cable to secure it.
7. Connect the SCSI terminator to the bottom SCSI connector on the RRD42 drive.

Figure 2–5 shows how to connect the tabletop drive to another tabletop drive.

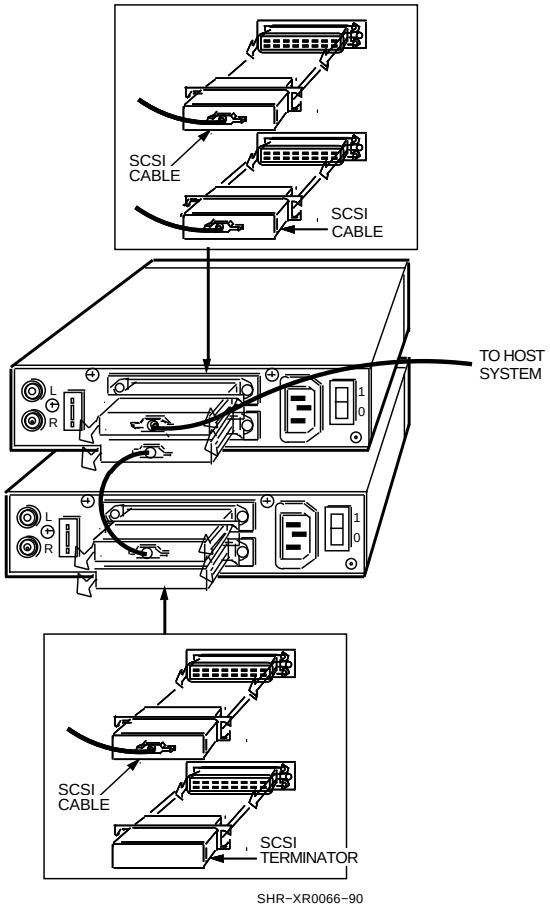

Figure 2–5 Connecting the 50-Pin SCSI Signal Cable — Drive to Drive

Connecting the Power Cable

To connect the power cable, perform the following steps:

1. Make sure the RRD42 drive power switch (Figure 2–6) is off.
2. Connect the power cable to the RRD42 drive's power connector (Figure 2–6).
3. Connect the other end of the power cable to a nearby ac outlet.

NOTE
For Digital service personnel — the power cable is the drive's disconnect device from the main ac power source.

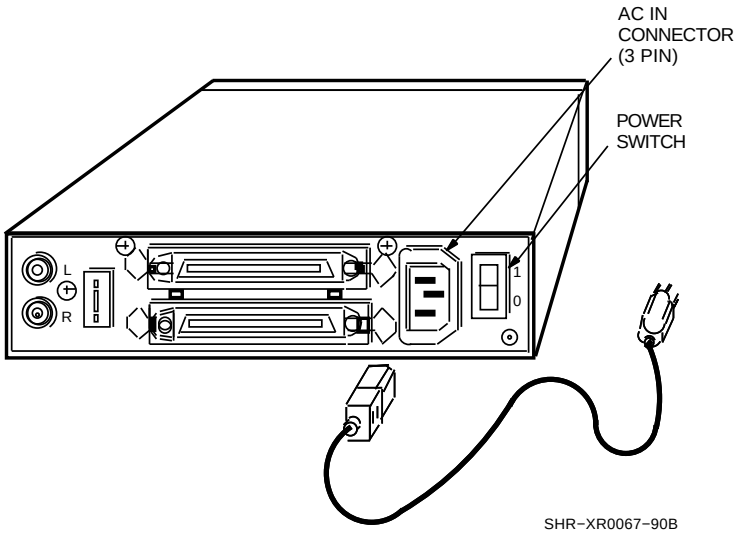

Figure 2–6 Connecting a Power Cable to the RRD42 Drive Power Connector

Installing the RRD42 Tabletop Drive

Introduction

If you are installing an RRD42 drive on a running system, have your system manager perform an orderly shutdown of the operating system: stop and power down the system and all attached SCSI devices.

SCSI Cable Requirements

Up to seven SCSI devices can be connected through a SCSI bus in a daisy chain. The total length of the SCSI cables (including internal cables in attached expansion boxes) should not exceed 6 meters (19.67 feet).

On Digital systems using the KZQSA SCSI to Q–bus adapter, the length of the external SCSI cable cannot exceed 2 meters (6.56 feet). The cables used with the KZQSA must be option number BC06P or part numbers: 17-02659-01, 0.30 meters (1 foot); 17-02659-02, 1.82 meters (6 feet); and 17-02659-03, 0.76 meters (2.5 feet)

The KZQSA adapter can support only a maximum of two devices on each port.

Assigning the SCSI ID

- Assign the SCSI bus ID number for each drive using the ID SELECT switch on the rear (Figure 2–2).
- Do not use the same ID number as the one already set for the other SCSI device on the same bus.

Installing the RRD42 Embedded Drive

Introduction

The installation of the embedded drive varies with different host systems. Consult your host system installation guide for correct mounting directions.

NOTE

The embedded drive is shipped with a plastic cover to prevent dust infiltration. DO NOT REMOVE THIS COVER. Take care when installing the cables in the rear of the embedded drive. Make sure the dust cover does not interfere with the SCSI cable connector.

The RRD42 does not require periodic cleaning. However, the environment where the drive is installed should be clean.

Setting the SCSI ID

A set of pins with jumpers installed on the rear panel of the embedded drive must be set to correspond to the configuration of your computer system (Figure 2–3). Remove and install jumpers as necessary, using small pliers or tweezers.

Mode Select Jumper

IMPORTANT

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 — Jumper Out. In this mode the drive block size is 2 kilobytes. Use Mode 0 under MS–DOS and SCO UNIX operating systems.

Mode 1 — Jumper In. When the jumper is installed, the drive operates 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 selected.

Jumpers 0–2

Assign the embedded drive's ID number by setting the ID SELECT jumpers in or out. Do not assign the same number used on another SCSI device.

ID Jumpers

Table 2–1 ID Jumpers 0–2

	ID SELECT Jumper Settings		
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

NOTE
Consult system documentation for further addressing information.

Changing the SCSI ID Jumper Setting

If either of the following conditions exist, change the SCSI ID jumper setting:

- If you install the RRD42 drive on a system that already has a SCSI device attached, use any available SCSI ID. (You may need to consult your system manager for available SCSI IDs.)
- If you install multiple RRD42 (or other SCSI) drives, make sure the SCSI ID for each drive is set with the drive's unique SCSI ID. No two drives in the series can have identical SCSI IDs.

If you need to change the SCSI ID, select the desired SCSI ID from Table 2–1.

Verifying the RRD42 Drive Installation

Executing POST

To verify successful installation of the RRD42 drive by executing power-on self-test (POST), perform the following steps:

1. Power on the drive.
2. Load a disc with the caddy into the drive.
3. The BUSY indicator lights for about 10 seconds and then extinguishes.
4. Continue the procedure: power up the remaining external devices, and then power up the host systems.
5. Run one pass of the host system or MicroVAX diagnostic monitor (MDM) diagnostics to verify system operation.

3 Using the RRD42 Disc Drive

How the RRD42 Drive Operates

In this Chapter

This chapter describes:

- Location and function of components on the tabletop and embedded drives
- System software
- Disc and caddy handling
- Operating procedure

Parts and Controls — Front

The RRD42 tabletop and embedded drives have the same front panel parts and controls. The following table describes the location and function of the drive's front panel parts and controls (Figure 3–1).

Parts and Controls	Function
Caddy insertion slot	Accepts a caddy loaded with a disc.
Emergency eject hole	Provides a means to manually eject a caddy (See chapter 4)
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.
Dimple	Where the drive number label is placed.
Headphone level control	Adjusts the volume.
Headphone jack	Accepts headphone connector.

Figure 3–1 shows the front panel of the RRD42 drive.

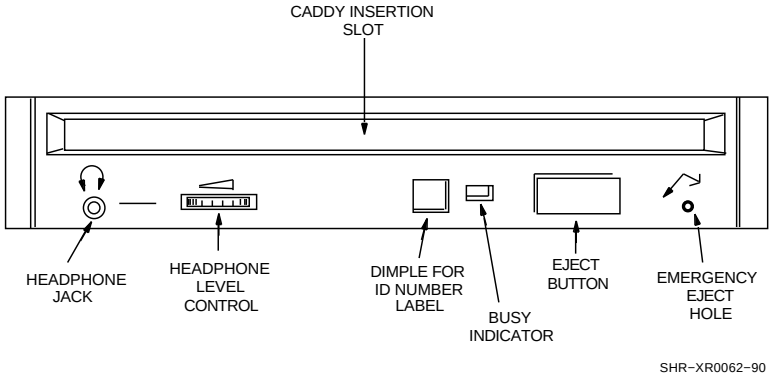

Figure 3–1 Front Panel of the RRD42 Drive

Tabletop Components — Rear

The following table describes the location and function of the tabletop drive's components in the rear panel (Figure 3–2).

Components	Function
ID SELECT switch	Selects unit SCSI address.
SCSI bus connectors	Connect to the host computer's SCSI bus connector or to another SCSI device using a SCSI bus cable.
POWER switch	Powers on and off the drive.
Ground terminal	Connects to the host computer or an amplifier to reduce audio noise.
AC IN connector (3-pin)	Connects to an ac power source with supplied ac power cord.
AUDIO output jacks	Connect to CD or AUX input jacks of an amplifier using an audio cable.

Power Switch — Tabletop

Press the power switch to turn on, or turn off, the RRD42 drive. The on position is designated with a 1. The off position is designated with a 0 (Figure 3–2).

Figure 3–2 shows the rear panel components of the RRD42 tabletop drive.

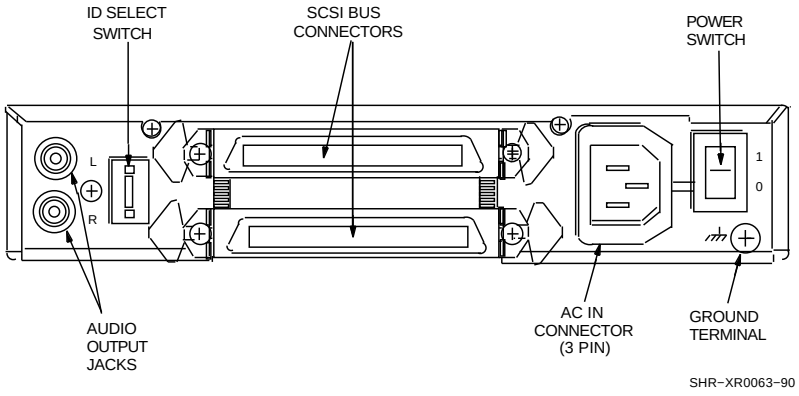

Figure 3–2 Rear Panel of the Tabletop Drive (–DA Version)

Embedded Components — Rear

The following table describes the location and function of the embedded drive's components in the rear panel (Figure 3–3).

Components	Function
Jumpers for SCSI bus ID	Specify assignment of the RRD42 drive SCSI bus ID.
Mode select jumper	Selects mode.
SCSI bus interface connector	Connects the embedded drive to a SCSI host adapter using a connecting cable.
Power-in connector	Connects the embedded drive to the power supply within the computer.
Frame ground tab	Grounds the embedded 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.

Figure 3–3 shows the rear panel components of the RRD42 embedded drive with the jumper installed (Mode 1).

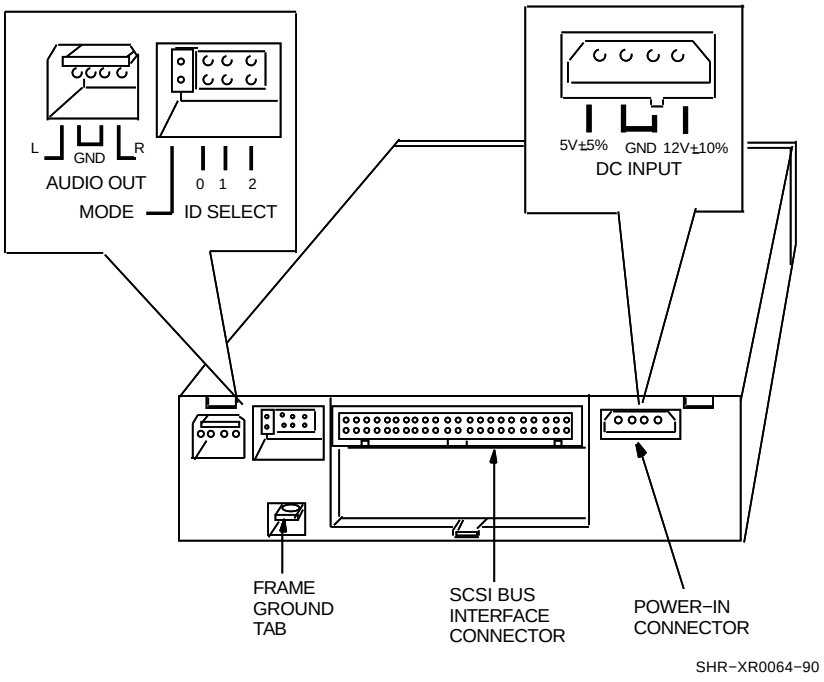

Figure 3–3 Rear Panel of the Embedded Drive (–AA Version)

Disc and Caddy Handling

Follow these steps to handle the disc and 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 (Figure 3–4).
3. To load an empty caddy with a disc, hold the disc by the edges, and place the disc (with disc label up) into the caddy (Figure 3–5). Do not touch the surface of the disc. Be sure to place the disc beneath the edge of the caddy.
4. Press both corners firmly, to close the lid (Figure 3–5).

NOTE

Additional caddies (part number 30-34512-01) can be purchased through your Digital sales representative or DECdirect ordering service.

Figure 3–4 shows how to open the caddy.

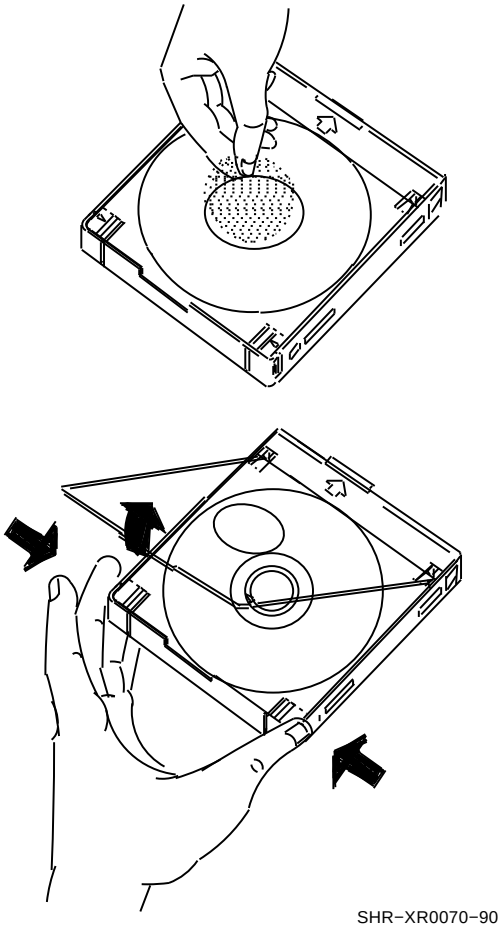

Figure 3–4 Opening the Caddy

Figure 3–5 shows how to load a disc into the caddy.

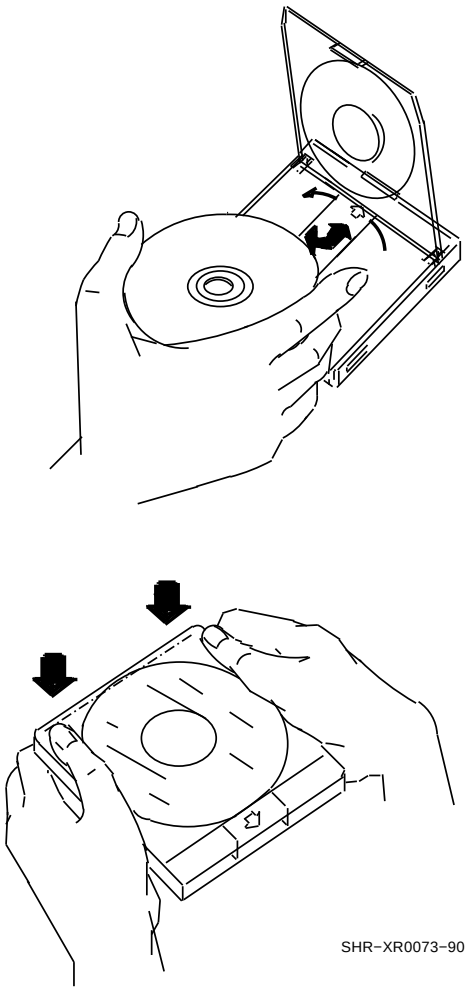

Figure 3–5 Loading a Disc into the Caddy

Operating the RRD42 Drive

Loading the Drive

NOTE

The operating procedure for the RRD42 tabletop and embedded drives is the same with one exception: the tabletop drive requires setting the POWER switch to on.

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

1. Press the POWER switch to on at the rear of the tabletop drive, and insert the caddy into the caddy insertion slot (Figure 3–6).

   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.