DECpc

429 MB SCSI Hard Disk Drive Installation Guide

Order Number: EK–XARAB–IG–002

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1
Package Contents

The 429-megabyte SCSI hard disk drive kit (PCXAR-AB) contains the
following:

- Hard Disk Drive (RZ25-E)

- Machine screws (8)

- 5 1/4-inch expansion bracket (2)

- SCSI terminating resistors (3)

2
Introduction

This hard disk drive is one in a series of high performance 3.5 inch disk drives. The many features of this drive include:

- 429 MB formatted capacity
- 3.5 inch form factor
- SCSI Interface
- 14 millisecond average seek time
- 6.8 millisecond average latency time
- 1:1 interleave ratio
- 256KB buffer
- Parity enabled

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Pre–Installation

If you decide to install the drive on your own please follow all instructions very carefully.

Caution

Static electricity can destroy integrated circuits. Be sure to discharge any built-up static electricity by touching a grounded metal object before handling the drive or touching any of the computer's logic boards.

As you prepare and install the SCSI hard disk drive, keep the following cautions in mind:

- Carefully read the entire manual before installing the drive. Then, if you are unsure about your ability to do the job, you can contact Digital Customer Service. A Customer Service technician will install the drive for you.

- The drive does not require preventive maintenance. Do not remove or tamper with the sealed top cover.

- The configurations of your computer system, your SCSI adapter, and each SCSI device must work together for optimum SCSI performance. Refer to the appropriate documentation as you configure the computer and the SCSI devices.

- If you install the drive in a computer with an IDE drive, you must configure the IDE drive as Drive C.

Pre–Installation

- Refer to your operating system and application documentation for specific instructions on storing and accessing your programs on hard disk.

---------------------------------- **NOTE** ----------------------------------

We recommend that you always make a backup copy of all data on your SCSI hard disk drive before you replace or upgrade your SCSI adapter or install additional SCSI hard drives.

Preparing the Hard Drive

Before you install the SCSI hard drive, you must configure it for use in the computer. The following are factory default settings:

- The terminator power is supplied by the disk drive

- Spin-up on power is enabled

- Parity checking is enabled

Refer to the technical appendix for additional information about the default settings.

Setting the Jumpers

If the drive is the only SCSI device in your computer, set the SCSI ID to 0. The drive can be configured to have any SCSI ID from 0 through 7 on the SCSI bus. Refer to Table 1 for details on the drive jumper settings.

Figure 3–1 RZ25 Drive Module Layout

Drive
Front

J6

1 2 3 4 5 6 7 8

Drive Front

J4
SCSI I/O
Connector

**Drive Module
Bottom View**

Terminating
Resistors

Pin 1

J3
DC Power
Connector

SCSI ID
Select Header

J5

Pin 1

3 2 1

* See Table in Text
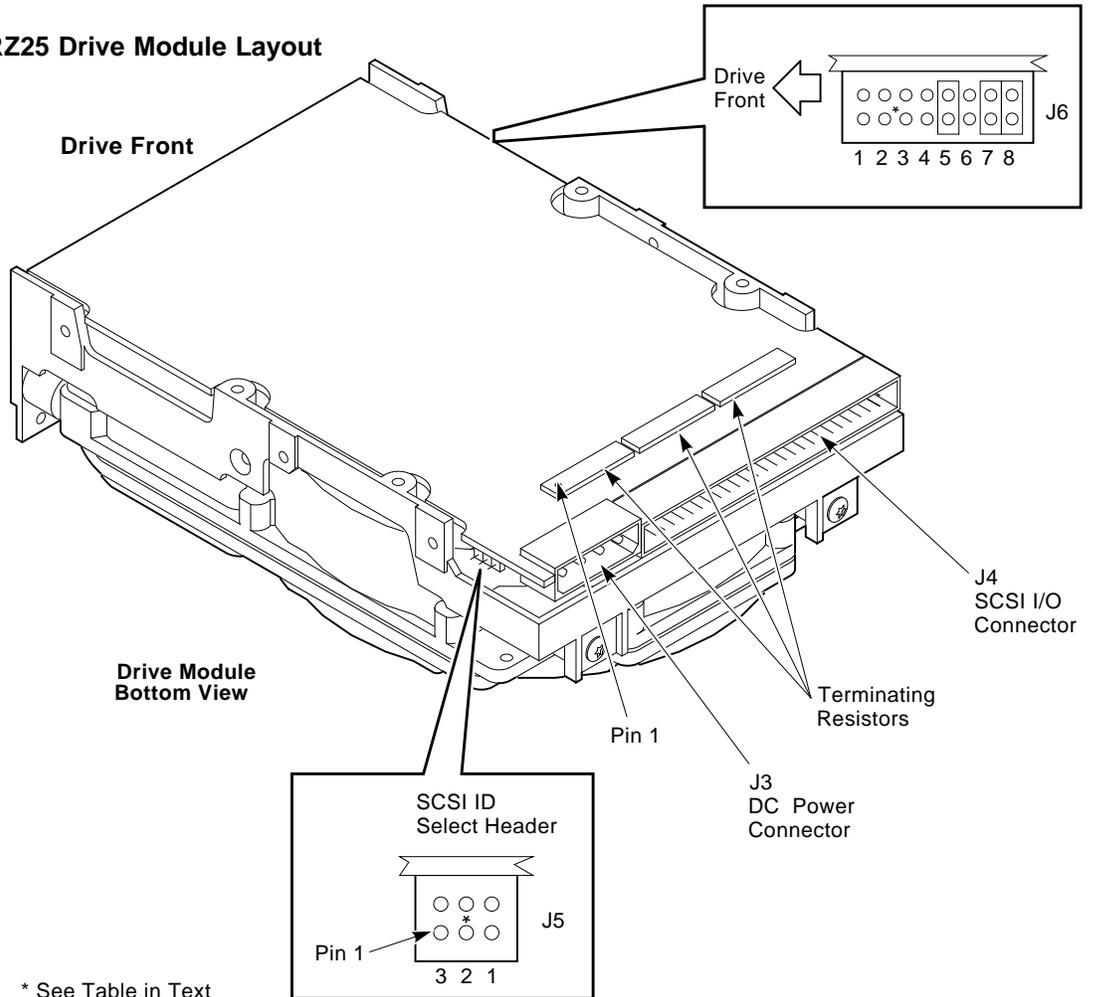
LJ-01356-TI0

Table 3–1   RZ25 Jumpers (J5 and J6)

SCSI ID (J5)	1	2	3
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

Spin-up J6	Jumper 2
Out	Spin-up on power-up
In	Spin-up on SCSI command
	All other jumpers are reserved for factory use.

Preparing the Computer

Turn off the computer, and disconnect the power cords and data cables. Remove the computer cover as illustrated in your computer user's guide.

## Mounting the SCSI Hard Drive

To mount the SCSI hard drive:

1. Select an available drive bay, if a 3 1/2-inch drive bay is not available, attach the two expansion brackets as shown in Figure 2 and refer to the mounting instructions described in your computer User's Guide for a 5 1/4-inch drive bay.

2. Attach the power and data signal cables to the rear of the drive.

Figure 3–2 5 1/4-inch Expansion Brackets
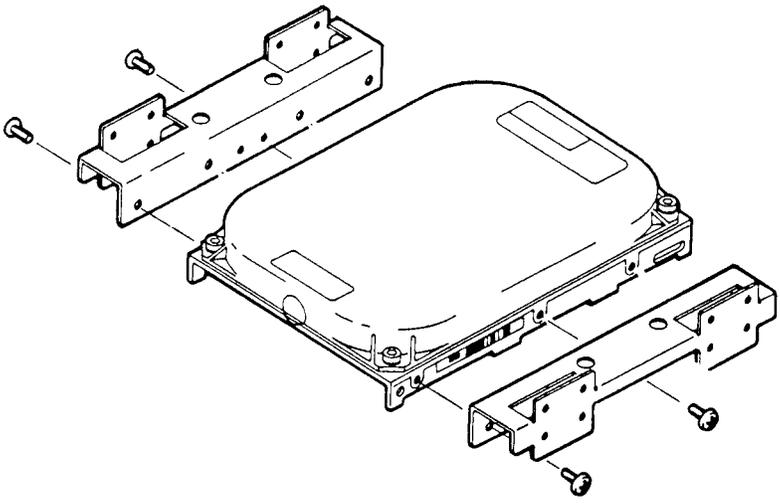
4

Completing the Installation

After you install the SCSI hard drive and all other SCSI devices, you must complete the installation by following these steps:

1. If applicable, install the SCSI host adapter as directed in your SCSI Host Adapter Installation Guide.

    _____ **Note** _____

    Some DECpc series computers have a built-in SCSI controller. See your computer User's Guide to determine the SCSI controller type.

    _____

2. Connect the adapter end of the SCSI cable to the cable connector on the SCSI adapter. The connectors are keyed to ensure proper Pin 1 alignment.

3. Connect all internal disk drive cables to the drives. These cables are keyed to connect in only one way. Do not force or twist the cables as you connect them.

4. Connect a four-pin power cable to each internal SCSI disk drive. The connectors are keyed for proper Pin 1 orientation. Power cables are identical and can be connected interchangeably to any internal disk drive.

5. After completing the installation, carefully replace the computer cover.

6. Reconnect all peripheral cables and the power cord, and plug in the computer.

Setup

After all internal options are installed in the computer, you must run the Setup program to reconfigure the system for the options. Select SCSI as the drive type. Refer to your computer user's guide for specific information about the setup program.

Completing the Installation

Installing Device Drivers

Depending on the operating system you use, you might need to install the device driver provided on your SCSI Host Adapter Utilities Diskette, Operating System Diskette, or System Utilities Diskette. Refer to your SCSI Host Adapter Installation Guide, Operating System Manual, or System Application Bulletin.

Initializing and Formatting the Drive

Before you can use the hard drive, you must initialize it by creating one or more partitions. Then, you must format the drive to prepare it to store and access the operating system and other files.

Formatting the drive will vary depending on the operating system you use. Always refer to your operating system documentation for instructions on initializing and formatting drives.

_____ **Note** _____

Low-level formatting of the drive is not recommended for normal operation. The drive was low-level formatted at the factory.

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Technical Appendix

This section explains how to change the operation of the SCSI hard disk drive by re-installing jumpers and reconfiguring the terminating resistors.

Jumpers

A jumper is a clip that contains metal contacts. To install a jumper, place it over two adjacent pins. This installation either completes or bypasses a circuit to enable or disable a function of the drive. You can install, park, or remove a jumper.

Figure 5–1   Setting the Jumpers

| **Installed** | **Parked** | **No Connection** |
| | | **(removed)** |
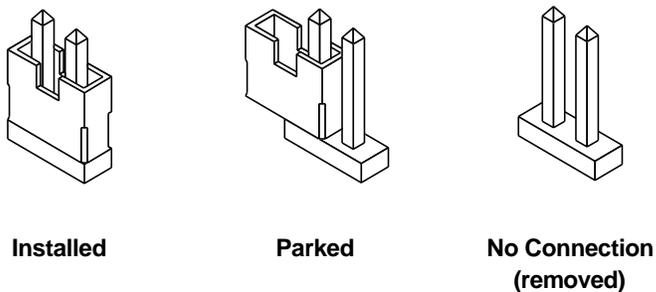
SHR–XR0140_91–RAGS

There is a block of jumper pins on the SCSI drive. To configure the drive, install jumpers on the pins to enable the functions you want to use. It is important to keep your current system configuration in mind as you configure the drive.

Terminating Resistors

Three terminating resistors are also provided with the drive. Terminating resistors are resistor networks that terminate the SCSI bus. The last physical SCSI device connected to the SCSI interface cable must be terminated. SCSI terminators are not required for those devices with end of cable terminators or external terminators.

―――――――――――― **Note** ――――――――――――

When you install the terminating resistors, you must maintain Pin 1
orientation. Pin 1 on the terminating resistor is marked with a dot.
Pin 1 on the drive is located on the bottom of the drive next to the
power connector. All three terminators must be installed in-line behind
the ribbon cable connector.

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Spin-up

The motor will spin-up immediately when power is applied to the drive.
Jumper block J6, position 2, should not be installed for Spin-up on Power.

Parity Checking

Parity Checking is enabled. Jumper block J6, position 5 should be installed for
Parity Checking enabled.

Terminator Power

Terminator Power is supplied by the drive. Jumper block J6, position 7 and 8,
should be installed for Terminator Power.

Additional Jumpers

Additional jumpers provided on the drive are factory default setting and should
not be changed.

**Technical Appendix
Jumpers**

Table 5–1 Technical Appendix

Capacity (Formatted)	429 MB
PHYSICAL CONFIGURATION	
Number of Disks	5
Read/write heads	9
Tracks per Surface	1474
Bytes per Block	512
Blocks per Drive	832527
Interface	SCSI
PERFORMANCE	
Seek Times	
Track to Track	2.5 ms
Average	14 ms
Maximum	<26 ms
Average Latency	6.8 ms
Rotation Speed (+0.5%)	4412 RPM
Data Transfer Rate	16.8 - 25.6 MB/s
Across Bus (async)	4.0 MB/s burst
Across Bus (sync)	5.0 MB/s burst