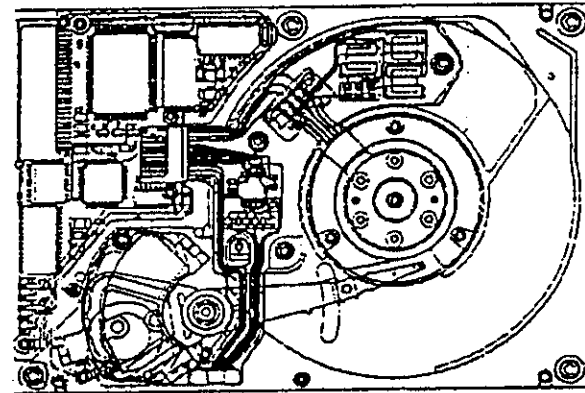


Current Status

Drive 0 present.

Model SD-3250N Removable Hard Disk Drive



INSTALLATION GUIDE

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

TEAC

10530734-00

Rev. A

Model SD-3250N Removable Hard Disk Drive

Installation Guide

July 8, 1993

©1993 TEAC Corporation
3-7-3 Naka-cho, Musashino, Tokyo, 180, JAPAN
All Rights Reserved

Information provided herein is copyrighted. This document may not, in whole or part, be copied, photographed, translated or reproduced in any form or by any means, electrical or mechanical, without prior written permission from TEAC Corporation. TEAC reserves the right to change specifications, components or documentation without prior notice.

TMThe TEAC logo is a trademark of TEAC Corporation
TMConner is a trademark of Conner Peripherals, Inc.
TMXebec is a registered trademark of Xebec America, Inc.
® AT is a trademark of IBM Corporation

Contents

1. Introduction	1
2. Product Specifications	2
3. Safety Instructions	4
4. Prior to Installation	4
5. Drive Installation	5
6. Drive Operation	11

1. Introduction

This manual describes the TEAC model SD-3250N Winchester hard disk drive. The manual focuses on the specifications and the installation of the drive and the docking bay into a standard AT-compatible PC system.

Key Features

- Designed for removability
- Simple design - only 14 major components
- Compact Size - 0.5 x 4.0 x 5.75 Inches (H x W x L)
- Lightweight 10 oz.
- Sub 17ms average seek time
- Low power < 2.5W

Before installing the drive and docking bay, please read all the applicable sections of this guide and please note all warnings.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

2. Product Specifications

Capacity (formatted)251.9 MBytes
InterfaceIDE-AT Task File

Disk Drive Configuration

Cylinders961
Heads18
Sectors/track32
Write pre-compnone
Landing Zone961
Number of user sectors492,032
Sector size512bytes
Read/write heads4
Disks2
Track Density2,048 tracks/inch
Flux Density32,300 flux reversals/inch
Recording Density43,100 bits/inch
Recording Code1,7 RLL

Performance Specifications

Seek Time Average17.0 msec.
 Track-to-track3.5 msec.
 Full stroke34.0 msec.
Average Latency8.33 msec.
Rotational Speed3,600 rpm \pm 0.1%
Data Transfer Rates:
 Effective19.66 Mbits/sec (Max)
 Buffer to Media13 ~ 26 Mbits/sec
 Buffer to Host10 Mbytes/sec (Max)
Cache Buffer Size128 KBytes
Interleave1:1
Master/Slave supportyes
Firmware32K downloadable flash

Reliability Specifications

Mean Time Between Failures250,000 Hours
Service Life5 years
Error rates hard1 per 10¹² bits read
 soft1 per 10¹⁰ bits read
 seek1 per 10⁶ seeks

Physical Specifications

Height0.50 inches (12.5mm)
Width4.00 inches (101.6mm)
Length5.75 inches (146.1mm)
Weight10 oz (0.28 kg)

Power Requirements

Power DC+5.00 Volts \pm 5%
+5V current read/write0.5 Amps
 standby0.35 Amps
 sleep0.2 Amps
 spin-up (5 secs)1.4 Amps
Power Dissipation (typ.)< 2.5W

Environmental Specifications

Acoustical Noise36 dBA @ 1 meter.
Temperature operating5° to 55° C
 non-operating-40° to 60° C
Gradient (non-condensing)20° C/hour max.
Humidity operating8 to 80% RH, noncondensing
 non-operating5 to 90% RH, noncondensing
 maximum wet bulb26° C
Altitudeoperating1,000 to 10,000 feet
 non-operating1,000 to 30,000 feet
Shock operating5 Gs
 non-operating> 200 Gs

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

3. Safety Instructions

- The disk drive and docking bay are to be installed into a customer supplied enclosure where the surrounding air does not exceed 55°C
- The power requirements for the drive are shown in Section 2. Product Specification
- The power supply must satisfy the safety requirements for SELV (Safely Extra Low Voltage) circuits.
- The incorporation of the disc drives listed in this guide into a customer enclosure must meet the appropriate safety requirements of the country in which is used.

Power must be off when connecting or disconnecting the docking bay or drive.

4. Prior to Installation

Do not remove the drive or the docking bay from the shipping container and/or antistatic bag until you are ready to begin installation.

Do not remove the labels, cover or any seals, as this will void the warranty. The drive has no user serviceable parts.

Do not install the drive into the docking bay. Install the docking bay into the system first.

Please observe all warnings and cautions on the drive or in this manual. Failure to do so could cause damage to the drive or your data.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR REMOVING THE DRIVE FROM THE DOCKING BAY

5. Drive Installation

This section defines the various stages that need to be taken to install the SD-3250N into your system.

Low level formatting

The drive is low-level formatted at the factory and the bad sectors mapped, so this step is not required. If a low-level format program is run the drive will not low-level format, **however all user data will be destroyed.**

Docking bay installation

Please refer to the docking bay installation guide.

Drive Configuration

This stage defines whether the drive is the master or the slave, and is used to control certain features of the drive. The configuration is performed through the supplied DOS utility 'SDCONFIG.EXE'. It is recommended that you set the CMOS for 'No Fixed Drives Present' to speed up the floppy boot process. The CMOS does not need to be configured before this utility will run.

For operating instructions for the program SDCONFIG.EXE or details of the features that SDCONFIG.EXE allow you to control see the Drive Operation Section.

Single Drive Installation:

The SD-3250N drive is shipped configured as a single master drive. If there are no other hard disk drives installed or to be installed there is no need to run 'SDCONFIG.EXE'.

Dual Drive Installation:

The AT/IDE interface does not allow two drives configured as masters to be connected in a system. Neither drive can be accessed if this is the case. Depending on your circumstances follow the instructions below.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR REMOVING THE DRIVE FROM THE DOCKING BAY

SD-3250N is master, SD-3250N is slave

1. Ensure the system is powered off.
2. Ensure that all AT/IDE connectors and power connectors are plugged in.
3. Plug **ONLY** the designated slave SD-3250N into one of the docking bay. The program will not recognize either drive correctly if both drives are plugged in.
4. Power the system on and boot DOS from a floppy disk.
5. Run the SDCONFIG.EXE program. Select the option 'Slave drive' for drive select.
6. Switch the system power off and plug the master SD-3250N into the docking bay.
7. Power the system on again and boot DOS from the floppy.
8. As SD-3250N drives are shipped as masters there is no need to run SDCONFIG.EXE for the master unit. However if this is not a new installation you may wish to run the SDCONFIG.EXE program, select 'drive 0' and the option 'Master drive' for drive select.
9. The drives are now set up for master/slave operation and can be partitioned and formatted accordingly.

SD-3250N is master, another drive is slave

1. Ensure the system is powered off.
2. Configure the non-SD-3250N drive as a slave in accordance with the drive's documentation.
3. Ensure that all AT/IDE connectors and power connectors are plugged in, and the SD-3250N is mounted in the docking bay.
4. Power the system on and boot DOS from a floppy disk.
5. As SD-3250N drives are shipped as master units there is no need to run SDCONFIG.EXE. However if this is not a new installation you may wish to run the SDCONFIG.EXE program, and select the option 'Master drive' for drive select.

NOTE: Some fixed drives may not support master/slave negotiation. If you encounter a problem after setting the CMOS and your system does not recognize the slave unit run SDCONFIG.EXE and select 'Drive0' for drive select.

6. The drives are now set up for master/slave operation and can be partitioned and formatted accordingly.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

Another drive is master, SD-3250N is slave

1. Ensure the system is powered off.
2. Configure the non-SD-3250N drive as a master with slave attached in accordance with the drive's documentation.
3. Ensure that the AT/IDE connector and power connector is plugged in to the docking bay, and the SD-3250N is mounted in the docking bay. The master drive **MUST** be disconnected otherwise neither drive will be recognized by the system.
4. Power the system on and boot DOS from a floppy disk.
5. Run the SDCONFIG.EXE program, Select the option 'Slave drive' for drive select.
6. Switch the power off and reconnect the master drive to the AT/IDE connector and power connector.
7. Power on the system and boot DOS from a floppy.
8. The drives are now set up for master/slave operation and can be partitioned and formatted accordingly.
9. If after partitioning and formatting the drives the system hangs and refuses to boot from the hard drive, boot the system from a floppy, run SDCONFIG.EXE and select the option 'SLV CP' for drive select. Once this option is saved, remove the floppy and reboot. The system should now boot correctly. This is due to the master unit not conforming to ATA specifications. This option should only be used if configuring the drive as a SLAVE causes problems. To date the only drives that require this configuration are Conner CP30104H and Xebec XE3100.

CMOS Configuration

For the system to access the drive certain information needs to be entered into the system's CMOS. This is either entered by invoking a utility at boot-up or by running a utility supplied with the system. Please refer to your system documentation for details.

The information required is the drive geometry. Most systems allow for a user-definable drive type (type 47 or 48), in which case enter the parameters given below. If your system does not have a user-definable setup then you can use any geometry that does not exceed the maximum number of sectors and conforms to the operating system's specification.

cylinders	heads	sectors per track	write precomp.	land zone	CMOS MBytes
961	16	32	none	961	240

capacity 251,920,384 bytes
guaranteed sectors 492,032

If you have two drives installed and the slave drive is not a SD-3250N, you may get the error message "HDD Controller Failure" This is due to the slave unit not responding correctly when the SD-3250N interrogates the AT/IDE bus. After booting off the floppy, run SDCONFIG.EXE and select 'Drive0' for drive select. This cause's the SD-3250N to assume a slave is attached.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

Partitioning

This enables the drive to be divided up into separate areas which look to the system like different drives. In DOS this is done using the FDISK utility. First boot DOS from floppy and then run FDISK to partition the drive. Select the type and size of each partition. If the drive is to be the boot device the primary partition must be set active. DOS versions 3.2 and below will require additional installation software as they do not allow drives greater than 32MBytes. DOS 3.3 will require additional installation software if partitions of more than 32MBytes are required. For more details on the operation of FDISK refer to your DOS User Guide.

For partitioning with other operating systems refer to the operating system's documentation.

High level formatting

This is the final stage verifying the drive and creating the operating system specific format. Under DOS this is performed using the FORMAT command. Each partition must be formatted according to the logical drive letter. If you have installed the SD-3250N as the master drive and this is to be the boot device then the first partition (C:) must be formatted with the '/s' switch to transfer the system. Refer to you DOS User's Guide for more information on the FORMAT command.

For other operating systems refer to operating system documentation for details on high level formatting.

6. Drive Operation

You have now installed the SD-3250N removable hard disk drive. When the drive is plugged into the docking bay it behaves like any normal fixed hard drive. When the drive is not plugged in always ensure that it is carried around in the carrying case, as this will protect it against excessive shock and vibration, as well as reducing effects due to changes in thermal conditions.

**BEFORE INSERTING OR REMOVING THE DRIVE, PLEASE
ENSURE THAT POWER HAS BEEN SWITCHED OFF**

The SDCONFIG.EXE program configures the SD-3250N drive for master/slave operation. It also enables the user to enable/disable write protect status and cache enable status.

At the DOS command prompt, type SDCONFIG.EXE <ENTER> to execute the program. If you have two SD-3250Ns connected and configured as Master/Slave the following screen is displayed allowing you to select the drive. If you only have one SD-3250N installed, this screen is not shown.

Hard Disk configuration utility Version 1.0 (c)Copyright TEAC Corp
1993

SD HD Configuration Prog.

Change configuration for:
> Drive 0
• Drive 1

Move the cursor (>) up or down using the cursor up/down keys, and press <ENTER> to select and go on to the next screen shown below.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

To abort the program press <ESCAPE>. Drive 0 is the master drive, drive 1 is the slave drive.

Hard Disk configuration utility Version 1.0 (c)Copyright TEAC Corp 1993

```
SD HD Configuration.

Configure drive 0 for:
> Drive select:  MASTER
• Write protect:  OFF
• Cache:         ENABLED

[Page UP/Down to change]

V2.8      S/N 00000266
```

Drive to become a Master (dual-drive) or a single.

Use the cursor keys to move the cursor, the Page Up/Down keys to change the status, and <Enter> to save the configuration. To abort without saving the changes, press <Escape>.

Drive Select:

This controls the master/slave setting. The available options are:

- MASTER:** The drive is the master unit. It will interrogate the bus to see if a slave drive is present. This is the default setting.
- SLAVE:** The drive is the slave unit in a dual drive system. If another drive were to interrogate the bus, the SD-3250N will indicate its presence as the slave unit.
- DRIVE0:** The drive is the master unit in a dual drive system. The drive does not interrogate the bus as it assumes a slave drive is attached. This option should be used if the slave drive is unable to notify its presence on the bus.

CSEL: The drive's configuration is determined by the status of the CSEL line (pin 28 on the IDE bus). If grounded then the drive is selected as master (drive 0), if open the drive is selected as a slave (drive 1).

This option can only be used if your docking bay supports it. Not all docking bays support this feature.

SLV CP: When using the SD-3250N as a slave to certain drives that do not conform to ATA specification, the system hangs during boot up. Selecting this option should cure the problem. This setting should only be used when the regular slave option fails to work. To date the only drives that require this configuration are Conner CP30104H and Xebec XE3100.

Write Protect:

This enables the user to protect the drive. Any attempt to write to the drive or format a track result in an error condition being returned to the operating system. Care must be exercised with this option as some operating systems write to the drive under normal operation.

Cache:

This enables you to control whether the read-ahead cache is used or not. The performance of the drive is enhanced by using the cache, but some operating systems/host adapters may perform better with this option disabled.

Once you have finished configuring the drive press <ENTER> to accept the configuration and exit the program or press <ESCAPE> to abort without making any changes. Once you have accepted the changes they take place immediately. There is no need to reboot.

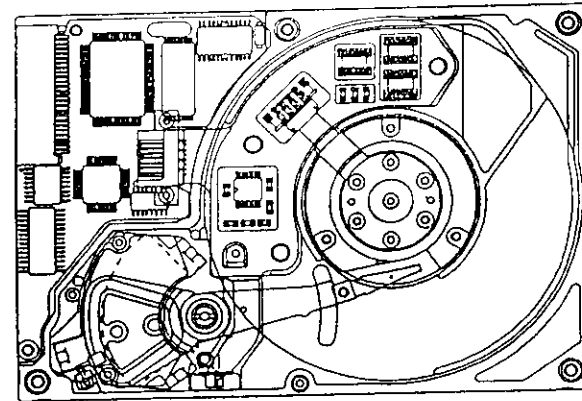
If you accept the configuration, a screen similar to that shown below will inform you of the current status and return you to the DOS prompt. Drive 0 refers to a master unit, Drive 1 to a slave unit.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

SD-3540N

Removable Hard Disk Drive



INSTALLATION GUIDE

1994年1月 ティアック株式会社
〒180 東京都武蔵野市中町3-7-3

ご注意

- (1) この取扱説明書および付属のソフトウェアの一部または全部を無断で複写、転載、翻訳することは禁止されています。
 - (2) この取扱説明書の内容に関して、予告なしに変更することがあります。
- PC/ATおよびATはInternational Business Machines Corporationの商標です。
 - ConnerはConner Peripherals, Incの商標です。
 - XebecはXebec America, Incの登録商標です。
 - MaxtorはMaxtor Corporationの登録商標です。
 - TEACはティアック株式会社の商標です。

PRINTED IN JAPAN 0394SAx.X

TEAC

D0001660-0A
Rev. A

Contents

1. Introduction	2
2. Product Specifications	4
3. Safety Instructions	7
4. Prior to Installation	8
5. Drive Installation	3
6. Drive Operation	15

1. Introduction

This manual describes the TEAC SD-3540N Winchester Hard Disk Drive, and focuses on its installation into an AT-compatible PC system (hereinafter referred to as System) with the RH-31XB Docking Bay. For use of the docking bay, refer to its installation manual.

Key Features

- Designed for removability.
- Simple design - only 14 major components
- Compact Size - 0.5 x 0.4 x 5.75 Inches (H x W x L)
- Lightweight 10 oz
- Sub 11ms average seek (5 V/12 V combined).
- Power supplies 5 V /12 V combined or 5 V only
- Low Power < 3.6 W

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

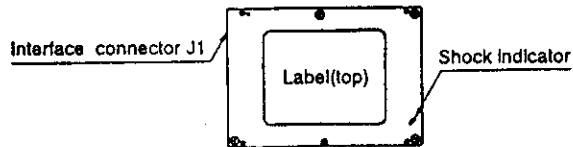
1

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

2

3. Safety Instructions

- Use the drive and docking bay in an environment where the ambient temperature range is 5 °C to 55 °C .
- Use the drive with supply voltages of 5 V \pm 5% (4.76 V to 5.25V) and 12 V \pm 5% (11.4V to 12.6 V).
- Switch OFF the power before connecting or disconnecting the drive or docking bay.
- Before using the drive, refer to Section 5.5, "Setting the CMOS Memory for Set-up". Do not peel off the label or remove the cover, as this will void the warranty. The drive and docking bay do not have serviceable or replaceable parts by customers.
- Do not apply excessive voltage to the drive. If higher voltage than that rated is applied, the built-in shock indicator will change from white to red (see illustration). If the indicator turns red, the warranty will be voided.



Prior to Installation

- Do not remove the drive or the docking bay from the shipping container and antistatic bag until you are ready to install.
- Install the docking bay into the system first.
- Before operating, read this manual and observe all safety precautions. Failure to do so may cause damage to the drive or to your data.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

7

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

8

5. Drive Installation

This section describes the actions that need to be taken to install the SD-3540N.

Followig instructions are based on single docking bay.

5.1 Low-level Formatting

The drive is low-level formatted at the factory and the bad sectors mapped, so this step is not required. If a low-level format program is run, the drive will not low-level format, and all user data will be destroyed.

5.2 Docking Bay Installation

Refer to the docking bay installation guide.

5.3 Drive Configuration

This stage defines whether the drive is the Master or the Slave, and is used to control certain features.

A : Run SDCONFIG.EXE in the DOS utility program provided.

B : Strap Settings S1 and S2 on the docking bay PC board.

If you use Method-B, refer to Section 5.4, "Setting the Drive Using Docking Bay Straps S1 and S2". If you use Method-A, run SDCONFIG.EXE in the DOS utility program provided. To expedite the process, we recommend that you set the CMOS set-up parameters to "No Fixed Drives Present". To run SDCONFIG.EXE, refer to Section 6, "Drive operation," on Page 15.

5.3.1 When One SD-3540N is Installed:

1. Ensure the system power is OFF.
2. Ensure that all AT/IDE connectors and power connectors are plugged in.
3. Switch the system ON and boot DOS from the floppy disk.
4. Run SDCONFIG.EXE and set "Drive select:" to Master.
5. The drive is now set up as Master drive, and can be partitioned or formatted accordingly.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

5.3.2 When Two Drives are Installed:

When installing two drives, one must be selected as Master and the other as Slave. Depending on the operating environment, set as follows:

- **If Both are SD-3540N Drives (two single docking bays are used):**
 1. Ensure that the system is powered OFF.
 2. Ensure that all AT/IDE connectors and power connectors are plugged in.
 3. Insert the drive that is to be assigned as the Slave into either docking bay. If both drives are inserted, the program will not operate correctly.
 4. Switch the system ON and boot DOS from the floppy disk.
 5. Run SDCONFIG.EXE and set "Drive select:" to Slave.
 6. Switch the system OFF and remove the Slave drive. Insert ONLY the drive that is to be assigned as the Master into the docking bay. Switch the system ON and boot DOS from the floppy disk.
 7. Run SDCONFIG.EXE and set "Drive select:" to Master.
 8. The two drives are now set to Master and Slave insert both drives into the bays, and can be partitioned and formatted accordingly.
- **The SD-3540N is the Master and another drive the Slave:**
 1. Ensure that the system is powered OFF.
 2. Install the Slave drive according to its instruction manual.
 3. Ensure that all AT/IDE connectors and power connectors are plugged in, and that the SD-3540N is mounted in the docking bay. Disconnect the AT/IDE connector from the Slave drive, switch the system ON, then boot DOS from the floppy disk.
 4. Run SDCONFIG.EXE and set "Drive select:" to Master.
 5. Switch the system OFF and reconnect the Slave drive. Switch the system ON and boot DOS from the floppy disk.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

- The two drives are now set to Master and Slave, and can be partitioned and formatted accordingly.

(Remarks)

Some hard disk drives cannot be set to Master or Slave. If the system does not recognize the Slave drive after setting the CMOS parameters, run SDCONFIG.EXE and select Drive 0.

• **The SD-3540N is the Slave and Another Drive the Master:**

- Ensure the system is powered OFF.
- Install the Master drive according to its instruction manual.
- Ensure that all AT/IDE connectors and power connectors are plugged in, and that the SD-3540N is inserted into the docking bay. Disconnect the AT/IDE connector from the Master drive.
- Switch the system ON and boot DOS from the floppy disk.
- Run the SDCONFIG.EXE and set "Drive select:" to Slave.
- Switch the system OFF and reconnect the Master drive. Switch the system ON and boot DOS from the floppy disk.
- The two drives are now set to Master and Slave, and can be partitioned and formatted accordingly.

(Remarks)

If DOS cannot be booted from the hard disk after partitioning or formatting, perform the following:

- Boot DOS from the floppy disk.
- Run SDCONFIG.EXE and set "Drive select:" to SLV CP or SLV MX. If both operate normally, set to "SLV CP".
- Remove the floppy disk then boot DOS from the hard disk. Perform this only when normal operation can not be executed with the SD-3540N set to Slave.

5.4 Setting Drives using Docking Bay Straps S1 and S2:

When setting drives to Master or Slave using the straps, "Drive select:" must be set to CSEL. As the drive is factory-preset to CSEL, it is not necessary to reset. If the setting has been changed, run SDCONFIG.EXE and set "Drive select:" to CSEL.

5.4.1 If Only One SD-3540N is Installed:

- Ensure the system is powered OFF.
- Ensure that all AT/IDE connectors and power connectors are plugged in.
- Set Docking Bay Straps S1 and S2 to "Master".
- The drive is now set to Master, and can be partitioned and formatted accordingly.

5.4.2 When Two Drives are Installed:

When installing two drives, select one as the Master and the other as the Slave. Depending on the operating environment, set as follows:

• **If Both are SD-3540N Drives (two single docking bays are used):**

- Ensure the system is powered OFF.
- Ensure that all AT/IDE connectors and power connectors are plugged in.
- Set straps S1 and S2 of the docking bay to be Master to "DRIVE 0", then set straps S1 and S2 of the docking bay to be slave to "SLAVE".
- The two drives are now set to Master and Slave, and can be partitioned and formatted accordingly.

• **The SD-3540N the is Master and Another the Slave:**

- Ensure the system is powered OFF.
- Ensure that all AT/IDE connectors and power connectors are plugged in.
- Set straps S1 and S2 of the docking bay in which the Master drive will be installed to "DRIVE 0".
- Set the slave drive to "SLAVE" according to its instruction manual.
- The two drives are now set to Master and Slave, and can be partitioned and formatted accordingly.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR REMOVING THE DRIVE FROM THE DOCKING BAY

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR REMOVING THE DRIVE FROM THE DOCKING BAY

• The SD-3540N is the Slave and Another the Master:

1. Ensure the system is powered OFF.
2. Ensure that all AT/IDE connectors and power connectors are plugged in.
3. Set the master drive to "Master" according to its instruction manual.
4. Set Straps S1 and S2 of the docking bay in which the slave drive will be installed to "SLAVE". If the Master drive is not compatible with ATA specifications, set Docking Bay Straps S1 and S2 to SLV CP or SLV MX.
5. The two drives are now set to Master and Slave, and can be partitioned and formatted accordingly.

(Remarks)

If using a dual docking bay, refer to its instruction manual.

5.5 Setting the CMOS Memory for Set-up:

In order for the system to access the drive correctly, specific information needs to be entered into the system's CMOS. This is entered either by running a utility at Boot-up, or by running a utility supplied with the system. Refer to your system documentation for details.

The information required for setting the CMOS memory is the drive's setup parameters. Select a drive with user-definable parameters and set any of the parameters given in the table below. If the total number of sectors is not exceeded, any parameter combination in addition to those given below can be selected.

cylinders	heads	sectors per track	write precomp.	land zone	CMOS MBytes
1024	16	63	none	1024	504
1059	16	63	none	1059	521

Capacity 548,545,664 bytes
Total number of sectors 1,067,472

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

If you have two drives installed and the Slave drive is not an SD-3540N, you may get the error message, "HDD Controller Failure". This is because the Slave is not responding correctly when the SD-3540N interrogates the AT/IDE bus. Boot from the floppy again, run SDCONFIG.EXE, and set "Drive Select" to Drive 0. This causes the SD-3540N to assume that a slave drive is connected.

5.6 Partitioning

This enables the drive to be divided into areas that look like different drives to the system. In DOS, this is done using the FDISK utility. First boot DOS from the floppy disk, then run FDISK to partition the drive. Depending on the DOS version, there is a limit to the maximum capacity per partition. DOS 4.0 and above are required to set more than 32 MBytes of partitions. For more details on the operation of FDISK, refer to your DOS User's Guide.

5.7 High-level Formatting:

Format with the FORMAT command in DOS after partitioning. If you have installed the SD-3540N as the Master drive and this is to be the boot device (drive from which to boot DOS), then the first partition (C:) must be formatted with the "/S" switch. Refer to your DOS User's Guide for more information on the operation of the FORMAT command.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

6. Drive Operation

You have now installed the SD-3540N and the docking bay. Running SDCONFIG.EXE is described here.

When the SD-3540N is plugged into the docking bay it behaves like any normal hard drive. Always carry an unplugged drive in its carrying case to protect it against excessive shock, vibration, and severe temperature changes.

BEFORE INSERTING OR REMOVING THE DRIVE, SWITCH THE SYSTEM POWER OFF, EXCEPT WHEN USING THE HOT - SWAPPABLE DOCKING BAY.

SDCONFIG.EXE configures the SD-3540N drive for Master/Slave operation. It also controls Write-protect Status and Cache-enable Status.

Type SDCONFIG.EXE <ENTER> at the DOS prompt to execute the program. If two SD-3540Ns are configured as Master/Slave, the following message is displayed allowing you to select either Drive 0 (Master) or Drive 1 (Slave). If only one SD-3540N is installed, this message is not displayed.

SD Hard Disk Config.

Change configuration for:

- > Drive 0
- Drive 1

Move the cursor (>) up or down, and press <Enter> to select the drive; if the drive is selected, the next message will appear.

To abort the program, press <Escape>.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR REMOVING THE DRIVE FROM THE DOCKING BAY

SD HD Configuration.

Configure drive 0 for:

- > Drive select: MASTER
- Write protect: OFF
- Cache: ENABLED

[Page UP/Down to change]

V0.0 S/N 00000000

In this example, Drive 0 (Master) has been selected.

Use the cursor keys to move the cursor, the Page Up/Down keys to change status, and <Enter> to save the configuration.

To abort the program, press <Escape>.

Drive Select:

This controls the Master/Slave setting. The available options are:

MASTER: The drive is the Master and is the default setting. It will interrogate the AT/IDE bus to see if a Slave drive is present.

SLAVE: The drive is the Slave in a dual drive system. If the Master interrogates the AT/IDE bus, the SD-3540N will indicate the presence of the Slave.

DRIVE 0: The drive is the Master in a dual drive system. The drive does not interrogate the bus as it assumes a Slave is attached. This option should be used if the Slave is unable to reveal its presence on the bus.

CSEL: The drive's configuration is determined by the status of the CSEL signal (Pin 28 on the AT/IDE bus). If the CSEL signal is grounded (low level) by the host system, then the drive to which the CSEL signal is connected is selected as Master and the open drive (to which the

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR REMOVING THE DRIVE FROM THE DOCKING BAY

SEL signal line is cut off) is selected as Slave. In this mode, Drive Select is activated by Strap Settings S1 and S2 of the RH-31XB Docking Bay.

The SD-3540N is factory-preset to this setting.

SLV CP: When using drives that do not conform to ATA specifications as the Master, and the SD-3540N as the Slave, the system hangs during Boot-up. Selecting the SD-3540N as the Slave should cure the problem. To date, the only drives that require this configuration are Conner CP300104H and Xebec XE3100.

SLV MX: When using drives that do not conform to ATA specifications as the Master and the SD-3540N as the Slave, the system hangs during Boot-up. Selecting the SD-3540N as the Slave should cure the problem. To date, the only drives that require this configuration are some Maxtor drives.

Write Protect:

This enables the user to protect data. Any attempt to write to the drive or format a write-protected track will result in an error message being displayed by the system. Care must be exercised with this option, as some operating systems write to the drive under normal operation.

Cache:

This activates the cache memory. Generally speaking, the performance of the drive is enhanced by using the cache memory, but some operating systems/host adapters may perform better with this option disabled. Thus, confirm the cache memory's status prior to use.

Now that you have finished configuring the drive, press <Enter> to save the configuration.

To abort the program without saving the settings, press <Escape>. Once you have saved the settings, the next message will appear and the program will end, returning you to the DOS prompt. Drive 0

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

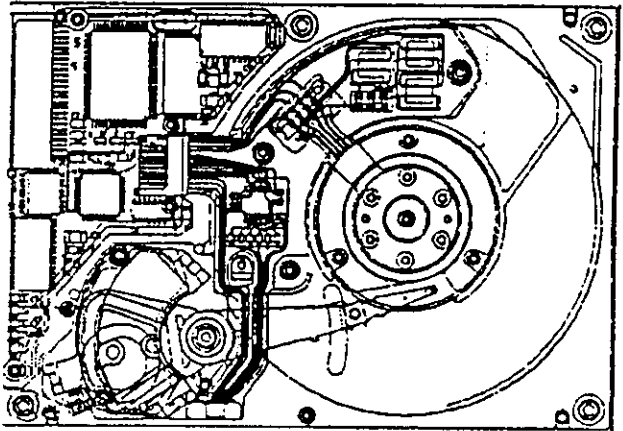
fers to a Master drive, and Drive 1 to a Slave drive.

Current Status
Drive 0 present.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

Current Status
Drive 0 present.

Model SD-3360N Removable Hard Disk Drive



INSTALLATION GUIDE

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

TEAC
10131445-00
Rev. A

Model SD-3360N Removable Hard Disk Drive

Installation Guide

July 8, 1993

©1993 TEAC Corporation
3-7-3 Naka-cho, Musashino, Tokyo, 180, JAPAN
All Rights Reserved

Information provided herein is copyrighted. This document may not, in whole or part, be copied, photographed, translated or reproduced in any form or by any means, electrical or mechanical, without prior written permission from TEAC Corporation. TEAC reserves the right to change specifications, components or documentation without prior notice.

TMThe TEAC logo is a trademark of TEAC Corporation
TMConner is a trademark of Conner Peripherals, Inc.
TMXebec is a registered trademark of Xebec America, Inc.
© AT is a trademark of IBM Corporation

Contents

1. Introduction	1
2. Product Specifications	2
3. Safety Instructions	4
4. Prior to Installation	4
5. Drive Installation	5
6. Drive Operation	11

1. Introduction

This manual describes the TEAC model SD-3360N Winchester hard disk drive. The manual focuses on the specifications and the installation of the drive and the docking bay into a standard AT-compatible PC system.

Key Features

- Designed for removability
- Simple design - only 14 major components
- Compact Size - 0.5 x 4.0 x 5.75 Inches (H x W x L)
- Lightweight 10 oz.
- Sub 17ms average seek time
- Low power < 2.5W

Before installing the drive and docking bay, please read all the applicable sections of this guide and please note all warnings.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

2. Product Specifications

Capacity (formatted).....362.8 MBytes
InterfaceIDE-AT Task File

Disk Drive Configuration

Cylinders791
Heads16
Sectors/track56
Write pre-compnone
Landing Zone791
Number of user sectors.....708,736
Sector size.....512bytes
Read/write heads4
Disks2
Track Density3,155 tracks/inch
Flux Density31,366 flux reversals/inch
Recording Density41,822 bits/inch
Recording Code.....1,7 RLL

Performance Specifications

Seek Time Average17.0 msec.
 Track-to-track3.5 msec.
 Full stroke.....34.0 msec.
Average Latency8.33 msec.
Rotational Speed.....3,600 rpm \pm 0.1%
Data Transfer Rates:
 Effective19.66 Mbits/sec (Max)
 Buffer to Media13.228 ~ 26 Mbits/sec
 Buffer to Host10 Mbytes/sec (Max)
Cache Buffer Size.....128 KBytes
Interleave1:1
Master/Slave supportyes
Firmware32K downloadable flash

Reliability Specifications

Mean Time Between Failures.....250,000 Hours
Service Life5 years
Error rates hard1 per 10¹² bits read
 soft.....1 per 10¹⁰ bits read
seek1 per 10⁶ seeks

Physical Specifications

Height0.50 inches (12.5mm)
Width4.00 inches (101.6mm)
Length5.75 inches (146.1mm)
Weight10 oz (0.28 kg)

Power Requirements

Power DC+5.00 Volts \pm 5%
+5V current read/write0.5 Amps
 standby.....0.35 Amps
 sleep0.2 Amps
 spin-up (5 secs)1.4 Amps
Power Dissipation (typ.)< 2.5W

Environmental Specifications

Acoustical Noise.....36 dBA @ 1 meter,
Temperature ...operating5° to 55° C
 non-operating-40° to 60° C
Gradient (non-condensing)20° C/hour max.
Humidity operating8 to 80% RH, noncondensing
 non-operating5 to 90% RH, noncondensing
 maximum wet bulb....26° C
Altitude.....operating-1,000 to 10,000 feet
 non-operating-1,000 to 30,000 feet
Shock operating5 Gs
 non-operating> 100 Gs

CAUTION

ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

CAUTION

ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

3. Safety Instructions

- The disk drive and docking bay are to be installed into a customer supplied enclosure where the surrounding air does not exceed 55°C
- The power requirements for the drive are shown in Section 2. Product Specification
- The power supply must satisfy the safety requirements for SELV (Safely Extra Low Voltage) circuits.
- The incorporation of the disc drives listed in this guide into a customer enclosure must meet the appropriate safety requirements of the country in which is used.

Power must be off when connecting or disconnecting the docking bay or drive.

4. Prior to Installation

Do not remove the drive or the docking bay from the shipping container and/or antistatic bag until you are ready to begin installation.

Do not remove the labels, cover or any seals, as this will void the warranty. The drive has no user serviceable parts.

Do not install the drive into the docking bay. Install the docking bay into the system first.

Please observe all warnings and cautions on the drive or in this manual. Failure to do so could cause damage to the drive or your data.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

5. Drive Installation

This section defines the various stages that need to be taken to install the SD-3360N into your system.

Low level formatting

The drive is low-level formatted at the factory and the bad sectors mapped, so this step is not required. If a low-level format program is run the drive will not low-level format, **however all user data will be destroyed.**

Docking bay installation

Please refer to the docking bay installation guide.

Drive Configuration

This stage defines whether the drive is the master or the slave, and is used to control certain features of the drive.

There are two kinds of drive configuration methods as follows.

- A: Executing 'SDCONFIG.EXE' in the attached DOS utility program.
- B: Setting the short strap to pins S1 and S2 on the docking bay PCB. The drive is configured by the combination of the pins and the short strap.

Execute SDCONFIG.EXE program to switch between method A and B. The SD-3360N is shipped configured as method B. When you select method B, there is no need to execute the SDCONFIG.EXE program. Please refer to the docking bay installation guide for the configuration by the combination of the pins and the short strap.

When you select method A, follow the instructions below. For operating instructions for the program SDCONFIG.EXE or details of the features that SDCONFIG.EXE allow you to control see the Drive Operation section. It is recommended that you set the CMOS for 'No Fixed Drives Present' to speed up the floppy boot process.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

Single Drive Installation:

1. Ensure the system is powered off.
2. Ensure that all AT/IDE connectors and power connectors are plugged in.
3. Power the system on and boot DOS from a floppy disk.
4. Run the SDCONFIG.EXE program. Select 'Master drive' for drive select.
5. The drive is now set up for master operation and can be partitioned and formatted accordingly.

Dual Drive Installation:

The AT/IDE interface does not allow two drives configured as masters to be connected in a system. Neither drive can be accessed if this is the case. Depending on your circumstances follow the instructions below.

SD-3360N is master, SD-3360N is slave

1. Ensure the system is powered off.
2. Ensure that all AT/IDE connectors and power connectors are plugged in.
3. Plug ONLY the designated slave SD-3360N into one of the docking bay. The program will not recognize either drive correctly if both drives are plugged in.
4. Power the system on and boot DOS from a floppy disk.
5. Run the SDCONFIG.EXE program. Select 'Slave drive' for drive select.
6. Switch the system power off and remove the drive that is configured as the slave. Then plug ONLY the designated master SD-3360N into one of the docking bay.
7. Power the system on again and boot DOS from the floppy.
8. Run the SDCONFIG.EXE program. Select 'Master drive' for drive select.
9. The drives are now set up for master/slave operation and can be partitioned and formatted accordingly.

SD-3360N is master, another drive is slave

1. Ensure the system is powered off.
2. Configure the non-SD-3360N drive as a slave in accordance with the drive's documentation.
3. Ensure that all AT/IDE connectors and power connectors are plugged in, and the SD-3360N is mounted in the docking bay.
4. Power the system on and boot DOS from a floppy disk.
5. Run the SDCONFIG.EXE program. Select 'Master drive' for drive select.

NOTE: Some fixed drives may not support master/slave negotiation. If you encounter a problem after setting the CMOS and your system does not recognize the slave unit run SDCONFIG.EXE and select 'Drive0' for drive select.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

- The drives are now set up for master/slave operation and can be partitioned and formatted accordingly.

Another drive is master, SD-3360N is slave

- Ensure the system is powered off.
- Configure the non-SD-3360N drive as a master with slave attached in accordance with the drive's documentation.
- Ensure that the AT/IDE connector and power connector is plugged in to the docking bay, and the SD-3360N is mounted in the docking bay. The master drive **MUST** be disconnected otherwise neither drive will be recognized by the system.
- Power the system on and boot DOS from a floppy disk.
- Run the SDCONFIG.EXE program, Select 'Slave drive' for drive select.
- Switch the power off and reconnect the master drive to the AT/IDE connector and power connector.
- Power on the system and boot DOS from a floppy.
- The drives are now set up for master/slave operation and can be partitioned and formatted accordingly.
- If after partitioning and formatting the drives the system hangs and refuses to boot from the hard drive, boot the system from a floppy, run SDCONFIG.EXE and select the option 'SLV CP' for drive select. Once this option is saved, remove the floppy and reboot. The system should now boot correctly. This is due to the master unit not conforming to ATA specifications. This option should only be used if configuring the drive as a SLAVE causes problems. To date the only drives that require this configuration are Conner CP30104H and Xebec XE3100.

CMOS Configuration

For the system to access the drive certain information needs to be entered into the system's CMOS. This is either entered by invoking a utility at boot-up or by running a utility supplied with the system. Please refer to your system documentation for details.

The information required is the drive geometry. Most systems allow for a user-definable drive type (type 47 or 48), in which case enter the parameters given below. If your system does not have a user-definable setup then you can use any geometry that does not exceed the maximum number of sectors and conforms to the operating system's specification.

cylinders	heads	sectors per track	write precomp.	land zone	CMOS MBytes
791	18	58	none	791	346

capacity 362,872,832 bytes
 guaranteed sectors 708,736

If you have two drives installed and the slave drive is not a SD-3360N, you may get the error message "HDD Controller Failure". This is due to the slave unit not responding correctly when the SD-3360N interrogates the AT/IDE bus. After booting off the floppy, run SDCONFIG.EXE and select 'Drive0' for drive select. This cause's the SD-3360N to assume a slave is attached.

CAUTION
 ALWAYS DISCONNECT POWER BEFORE INSERTING OR
 REMOVING THE DRIVE FROM THE DOCKING BAY

CAUTION
 ALWAYS DISCONNECT POWER BEFORE INSERTING OR
 REMOVING THE DRIVE FROM THE DOCKING BAY

Partitioning

This enables the drive to be divided up into separate areas which look to the system like different drives. In DOS this is done using the FDISK utility. First boot DOS from floppy and then run FDISK to partition the drive. Select the type and size of each partition. If the drive is to be the boot device the primary partition must be set active. DOS versions 3.2 and below will require additional installation software as they do not allow drives greater than 32MBytes. DOS 3.3 will require additional installation software if partitions of more than 32MBytes are required. For more details on the operation of FDISK refer to your DOS User Guide.

For partitioning with other operating systems refer to the operating system's documentation.

High level formatting

This is the final stage verifying the drive and creating the operating system specific format. Under DOS this is performed using the FORMAT command. Each partition must be formatted according to the logical drive letter. If you have installed the SD-3360N as the master drive and this is to be the boot device then the first partition (C:) must be formatted with the '/s' switch to transfer the system. Refer to your DOS User's Guide for more information on the FORMAT command.

For other operating systems refer to operating system documentation for details on high level formatting.

6. Drive Operation

You have now installed the SD-3360N removable hard disk drive. When the drive is plugged into the docking bay it behaves like any normal fixed hard drive. When the drive is not plugged in always ensure that it is carried around in the carrying case, as this will protect it against excessive shock and vibration, as well as reducing effects due to changes in thermal conditions.

**BEFORE INSERTING OR REMOVING THE DRIVE, PLEASE
ENSURE THAT POWER HAS BEEN SWITCHED OFF**

The SDCONFIG.EXE program configures the SD-3360N drive for master/slave operation. It also enables the user to enable/disable write protect status and cache enable status.

At the DOS command prompt, type SDCONFIG.EXE <ENTER> to execute the program. If you have two SD-3360Ns connected and configured as Master/Slave the following screen is displayed allowing you to select the drive. If you only have one SD-3360N installed, this screen is not shown.

SD Hard Disk Config Utility Version 1.1

```
SD Hard Disk Config.

Change configuration for:
> Drive 0
• Drive 1
```

Move the cursor (>) up or down using the cursor up/down keys, and press <ENTER> to select and go on to the next screen shown below.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

To abort the program press <ESCAPE>. Drive 0 is the master drive, drive 1 is the slave drive.

SD Hard Disk Config Utility Version 1.1

```
SD HD Configuration.
Configure drive 0 for:
> Drive select:  MASTER
• Write protect:  OFF
• Cache:         ENABLED

[Page UP/Down to change]

VX.X   S/N XXXXXXXX
```

Drive to become a Master (dual-drive) or a single.

Use the cursor keys to move the cursor, the Page Up/Down keys to change the status, and <Enter> to save the configuration. To abort without saving the changes, press <Escape>.

Drive Select:

This controls the master/slave setting. The available options are:

MASTER: The drive is the master unit. It will interrogate the bus to see if a slave drive is present. This is the default setting.

SLAVE: The drive is the slave unit in a dual drive system. If another drive were to interrogate the bus, the SD-3360N will indicate its presence as the slave unit.

DRIVE0: The drive is the master unit in a dual drive system. The drive does not interrogate the bus as it assumes a slave drive is attached. This option should be used if the slave drive is unable to notify its presence on the bus.

CSEL: The drive's configuration is determined by the status of the CSEL line (pin 28 on the IDE bus). If grounded then the drive is selected as master (drive 0), if open the drive is selected as a slave (drive 1).

This option can only be used if your docking bay supports it. Not all docking bays support this feature.

SLV CP: When using the SD-3380N as a slave to certain drives that do not conform to ATA specification, the system hangs during boot up. Selecting this option should cure the problem. This setting should only be used when the regular slave option fails to work. To date the only drives that require this configuration are Conner CP30104H and Xebec XE3100.

Write Protect:

This enables the user to protect the drive. Any attempt to write to the drive or format a track result in an error condition being returned to the operating system. Care must be exercised with this option as some operating systems write to the drive under normal operation.

Cache:

This enables you to control whether the read-ahead cache is used or not. The performance of the drive is enhanced by using the cache, but some operating systems/host adapters may perform better with this option disabled.

Once you have finished configuring the drive press <ENTER> to accept the configuration and exit the program or press <ESCAPE> to abort without making any changes. Once you have accepted the changes they take place immediately. There is no need to reboot.

If you accept the configuration, a screen similar to that shown below will inform you of the current status and return you to the DOS prompt. Drive 0 refers to a master unit, Drive 1 to a slave unit.

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

CAUTION
ALWAYS DISCONNECT POWER BEFORE INSERTING OR
REMOVING THE DRIVE FROM THE DOCKING BAY

Free Manuals Download Website

<http://myh66.com>

<http://usermanuals.us>

<http://www.somanuals.com>

<http://www.4manuals.cc>

<http://www.manual-lib.com>

<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

Golf course search by state

<http://golfingnear.com>

Email search by domain

<http://emailbydomain.com>

Auto manuals search

<http://auto.somanuals.com>

TV manuals search

<http://tv.somanuals.com>