

USER'S GUIDE

WD1003V-SR1

*Winchester Disk
Controller*

WD 1003 V-SR2

*Winchester/Floppy
Disk Controller*

**Important Information
Do Not Discard**

WESTERN DIGITAL

Product Description

This document describes the hardware and software installation of the WD1003V-SR1 and WD1003V-SR2, 16-bit disk controllers for the IBM[®] Personal Computer AT[®] or AT compatible computer. Both controllers' Winchester interface conform to 2,7 RLL specifications. The WD1003V-SR2's floppy controller supports four floppy drive types (360 KB, 720 KB, 1.2 B, and 1.44 MB). Do not confuse the number of drive types with the number of drives that can be connected to the WD1003V-SR2. Only two internal drives can be connected to the WD1003V-SR2. The WD1003V-SR2 supports "intelligent" 1.44 MB media drives. These intelligent drives obtain the drive type and data rate from the drive's media and do not depend upon the state of J1 pin 2 for this information.

Installation

This section briefly describes the installation of the controller board. Do NOT use the WD1003V-SR2 with an AT configured, AT compatible, or XT[®] diskette controller in the same system. Removal of the extra diskette controller is necessary for proper operation of the WD1003V-SR2. Disabling the diskette controller on the WD1WD1003V-SR2 is **NOT** possible

A minor incompatibility exists between the WD1003V-SR1 (or W1003V-SR2) and the WD1003-WAH (or WD1003-WA2). If the drive contains more than eight heads e.g. a 16 head drive, the WD1003-WAH numbers heads 8 through 15 as 0 through 7 in the media's ID fields. The WD1003V controllers number heads 8 through 15 as 8 through 15. Backup and reformat the drive to solve this problem. This problem is not manifested in drives with less than eight heads.

CAUTION

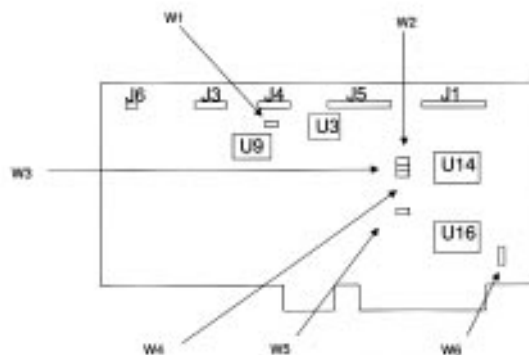
Handle the controller board by the ends of the board. Some of the chips are static sensitive and damage may occur if the board is incorrectly handled.

1. Verify the controller jumper settings. Only verify the settings. Modification of the standard factory settings is rarely necessary. Modify jumpers only under the direction of a qualified individual; i.e. your dealer. Figure 1 illustrates the jumper locations for both controller boards. Refer to Table 1 for further information on jumper settings.

2. Verify termination on last drive. Verify proper setting of drive select switches. Consult the drive technical manual for proper drive termination and selection information.

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3. Remove the blank expansion slot bracket. Put the bracket away and save it for possible future use. The screw will be used to hold the new controller board in place. It is best to locate the controller in the closest available expansion slot relative to the drive.
4. Attach the drive control cable connector to J5.
5. Attach the control cable to drive.
6. Attach drive 0 data cable connector to J4.
7. Attach data cable to drive 0.
8. Attach drive 1 data cable connector to J3.
9. Attach data cable to drive 1.
10. For WD1003V-SR2 users, attach the diskette cable connector to J 1
11. For WD1003V-SR2 users, attach cable to diskette drive(s).
12. Attach the Winchester activity cable connector to J6.
13. Check the cable connections carefully. Ensure that pin 1 on the board connectors mates with pin 1 on the cable connectors. Pin 1 on the cable connectors is usually on the color coded side.
14. Install the controller board into the expansion slot. Make sure that the board is seated properly by pressing down on both ends of the board. Secure the board with the bracket screw.
15. Remove or disable any other floppy controller in your system. The WD diskette controller can not be disabled.



All jumpers OFF for factory defaults.

Figure 1. Jumper Locations

TABLE 1. JUMPER SETTINGS

Jumper/ Pin number	Position	Description
W1/ 1-2	OFF	Winchester(s) in latched mode.
	ON	Winchester(s) in non-latched mode.
3-4	OFF	Four byte ECC. Factory default.
	ON	Seven byte ECC.
5-6	OFF	Cacheing enabled.
	ON	Cacheing disabled.
W2/ 1-2	OFF	BIOS enabled.
	ON	BIOS disabled. I/O addresses
W3/ 1-2	OFF	Primary Winchester I/O addresses
W4/ 1-2	OFF	Primary floppy I/O addresses
	ON	Secondary floppy I/O addresses
W5/ 1-2	OFF	Single speed drives.*
	ON	Dual speed drives.*
W6/ 1-2	OFF	Bracket ground operation not used.
	ON	Connects bracket to

*Do not combine single and dual speed drives in the same system.

Software Installation

This section contains instructions for low level formatting the Winchester drives. You can low level format the Winchester drive(s) by one of two methods. Third party software available from Storage Dimensions*, Ontrack*, or other companies can low level format the drive(s). Consult your dealer for further information on these software packages. An on-board BIOS ROM can also low level format the drive(s). The DEBUG utility initiates the controller's format program. To low level format the drive(s) with the BIOS ROM, proceed as follows:

1. Turn on the power.
2. At the A>prompt, load and run the DEBUG utility by typing DEBUG followed by a RETURN. "CR" stands for carriage return or EN ER.

A>DEBUG CR

3. At the debug prompt, initiate the controller format program by typing the following command line:

-g=cc00 :5

CAUTION

Step 4 requires execution of low level format. The low level format destroys all data on the drive. If the drive contains useful data, backup the drive before executing the low level format program.

4. The controller format program displays a menu. Follow the menu selections one through six. The **change current drive parameters** selection allows you to either choose pre-programmed drive parameters or enter the parameters from the keyboard. **Low level formatting** the drive sets up track, sector, and error correction information and initializes the data fields. The **surface analysis** performs a thorough scan of the drive's media. Running the surface analysis may take several hours. The **verify drive** option is a shorter version of the surface analysis test. Both the surface analysis and verify drive tests report any defects found and prompts the user to map out these defects. The **enter defect list** option allows the user to enter defects provided by the drive manufacturer. **Select next drive** allows you to change drives.

5. Load and execute the FDISK and FORMAT utilities.

*Storage Dimensions is a trademark of Storage Dimensions. Ontrack is a trademark of Ontrack Computer Systems.