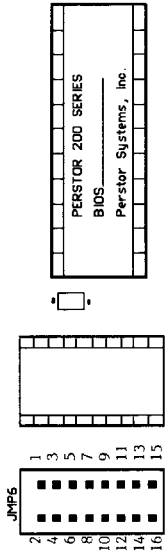


7. If you are unable to locate the corresponding head and cylinder for the hard disk drive (s) in any of the tables, you may need a custom BIOS.



JUMPER TABLES

These tables are for BIOS code UN9-2.00 only. For information on previous BIOS revisions, contact your dealer.

Table 1

Drive Unit 0					
CYL/HEADS	SET 5-6	SET 7-8	SET 13-14	SET 15-16	
615/6	OFF	OFF	OFF	OFF	
615/8	ON	OFF	OFF	OFF	
733/5	OFF	ON	OFF	OFF	
733/7	ON	ON	OFF	OFF	

Drive Unit 1

CYL/HEADS	SET 1-2	SET 3-4	SET 13-14	SET 15-16	
615/6	OFF	OFF	OFF	OFF	
615/8	ON	OFF	OFF	OFF	
733/5	OFF	ON	OFF	OFF	
733/7	ON	ON	OFF	OFF	

TABLES 2

Drive Unit 0					
CYL/HEADS	SET 5-6	SET 7-8	SET 13-14	SET 15-16	
612/4	OFF	OFF	ON	OFF	
1024/5	OFF	OFF	ON	OFF	
1024/8	OFF	ON	ON	OFF	
1024/15	ON	ON	ON	OFF	

Drive Unit 1

CYL/HEADS	SET 5-6	SET 7-8	SET 13-14	SET 15-16	
612/4	OFF	OFF	ON	OFF	
1024/5	OFF	OFF	ON	OFF	
1024/8	OFF	ON	ON	OFF	
1024/15	ON	ON	ON	OFF	

TABLE 3

Drive Unit 0					
CYL/HEADS	SET 5-6	SET 7-8	SET 13-14	SET 15-16	
615/4	OFF	OFF	OFF	ON	
977/5	ON	OFF	OFF	ON	
820/6	OFF	ON	OFF	ON	
1024/9	ON	ON	OFF	ON	

Drive Unit 1

CYL/HEADS	SET 1-2	SET 3-4	SET 13-14	SET 15-16	
615/4	OFF	OFF	OFF	ON	
977/5	ON	OFF	OFF	ON	
820/6	OFF	ON	OFF	ON	
1024/9	ON	ON	OFF	ON	

TABLE 4

Drive Unit 0					
CYL/HEADS	SET 5-6	SET 7-8	SET 13-14	SET 15-16	
925/5	OFF	OFF	ON	ON	
925/9	ON	OFF	ON	ON	
1024/7	OFF	ON	ON	ON	
918/15	ON	ON	ON	ON	

Drive Unit 1

CYL/HEADS	SET 1-2	SET 3-4	SET 13-14	SET 15-16	
925/5	OFF	OFF	ON	ON	
925/9	ON	OFF	ON	ON	
1024/7	OFF	ON	ON	ON	
918/15	ON	ON	ON	ON	

J4 - Activity LED connector
J5 - 5+12V connector for power

This concludes the Perstor PS180-8XT//8AT Hard Disk Controller Installation Manual.

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SECTION 1: DISK MANAGEMENT

1.1 Overview

This section provides the user with information about making a working copy of the Perstor Program diskette, preparing the working copy for use, and using a patch procedure for users with IBM PC-ATs.

1.2 Making a Working Copy

It is recommended that the user make a working copy of the Perstor Program diskette for use during the installation process. The original diskette should be stored in a safe place, and the working copy used from here on. Should anything happen to the working copy, another copy can be made.

The following procedures are for users with a dual floppy disk system. If the user has a single floppy disk system, refer to the DOS manual.

1. Place the DOS diskette in Drive A, close the drive door, and turn on the power to the computer.
2. Place a blank diskette in Drive B.
3. At the A> prompt, type: **Format B:/S**
4. Press **ENTER** (Return). The diskette in Drive B is formatted (prepared for use) and the Operating System files are transferred onto it.
5. When the A> prompt reappears, remove the DOS diskette from Drive A and replace it with the Perstor Program diskette.
6. At the A> prompt, type: **CDEight** and press **ENTER**.
7. At the A> prompt, type: **INSTAL8**
8. Press **ENTER** (this places all of the Perstor Program files onto the diskette in Drive B, creating the working copy).

NOTE: Read the Update Bat file carefully. It may contain addendum information to this manual.

9. Remove the Perstor Program diskette from Drive A and store it in a safe place.

1.3 PC-ATs Manufactured by IBM

The patch for IBM PC-ATs with a BIOS date of 1/10/84 is available for IBM PC-DOS 3.1, 3.2, 3.3, and 4.0. This patch must be reversed by running the batch file corresponding to the user's version of PC-DOS: **FIXDOS31**, **FIXDOS32**, **FIXDOS33**, OR **FIXDOS40** included on the Perstor diskette. The patch is needed **ONLY** for ATs Manufactured by IBM.

1. Place the Operating System/Perstor Program diskette in Drive A.
2. Type **FIXDOS31**, **FIXDOS32**, **FIXDOS33**, OR **FIXDOS40** depending on the version of PC-DOS being used.

3. **NOTE:** MS-DOS will not work in these systems with the Perstor controllers.

SECTION 2: INSTALLATION GUIDE

2.1 PC/XT/AT or Compatible Installation

NOTE: for first time users, Steps 1 and 16 are **NOT** required.

1. If this is an existing system, back up the program and data files from the hard disk. Refer to the DOS manual for backup procedure.

CAUTION: If any keyed software is present, such as Symphony, it should be properly deactivated prior to performing a backup.

2. Turn the power to the computer off and remove the cover.
3. If an existing hard disk controller is being replaced, disconnect the hard disk cables.
4. On the PS180, set the JMP6 according to the head and cylinder configuration of the user's hard disks. See the jumpering instructions in this booklet.
5. Check to make sure that the drive select jumpers are properly jumpered on each hard disk drive to meet the user's system needs.
6. Connect the drive cables to the PS180 as follows (refer to the illustration in Section 3):
 - J1 the 34 pin flat cable
 - J2 the 20 pin flat cable
 - J3 the 20 pin flat cable (if 2 hard drives are to be installed).

NOTE: Pin 1 of all three cables (normally with a red stripe) should be toward the mounting bracket of the board.

7. Install the Perstor PS180 hard disk controller into one of the available expansion slots and secure with a screw.
8. Replace the cover, insert the working copy of the DOS/Perstor Program diskette into Drive A, and turn on the power to the computer.
9. Watch for the PSI copyright message to appear for a brief moment at the top of the screen.
10. If the copyright message does not appear, turn off the computer and check the cable connections and seating of the board. Then turn the power back on and watch for the PSI copyright message. If it still does not appear call your dealer for assistance.

11. If the copyright message appears (for ATs, Check to be sure that the working copy of the Perstor Program diskette is in Drive A), type: **PS2FMT** (low level formatter) at the A> prompt, and press **ENTER**. A series of questions will appear on the screen. Respond according to the following criteria:

- a) **DRIVE:** press 0 or 1, depending on the disk drive formatted.
- b) **INTERLEAVE:** respond accordingly.

NOTE: Check the first paragraph after the Interleave question to ensure that the head and cylinder information is correct. If not, check the jumper information in Step 4. If it is correct, type: Y (yes) to begin the low-level format process.

12. After "Format Successful" appears, respond to the Scan question with Y(yes), and press **ENTER**.
13. When the Scan is finished, you will be asked to enter the disk defects listed on the hard disk drive by the manufacturer. It is important that you enter these to ensure that defective locations are electronically marked prior to use.
14. Run the partitioning program of either PC-DOS 3.3, MS-DOS 3.3, PC-DOS 4.0, MS-DOS 4.0, Disk Manager by Ontrack, or Speedstor to partition the hard disk drive.
15. Once the hard disk is properly partitioned, run the corresponding high-level format program.
NOTE: If using Disk Manager by Ontrack, type: **DM/M** at the A> prompt to enter the manual mode. If using Speedstor type: **Parted /Notype** at the A> prompt to enter the manual mode.
16. When the high-level format is completed, restore the data and program files to the hard disk. Use the respective Restore command for the backup program used in Step 1.

NOTE: Reinstall any keyed software programs.

17. If two hard drives are used, repeat steps 11-16 for this second drive.

CAUTION: Make sure the data and program files have been backed up from the second drive prior to proceeding.

SECTION 3: HARDWARE JUMPERS

3.1 OVERVIEW

This section provides jumpering information for the hard disk drive and the PS180 controller.

3.2 Hard Disk Drive Jumpers

Each hard disk drive has a set of jumpers located on the printed circuit board of the hard disk assembly. This set of jumpers (which is not always located in the same place and may not always be labeled the same by different manufacturers) is used to designate the hard disk drive as Drive Unit 1 or Drive Unit 2.

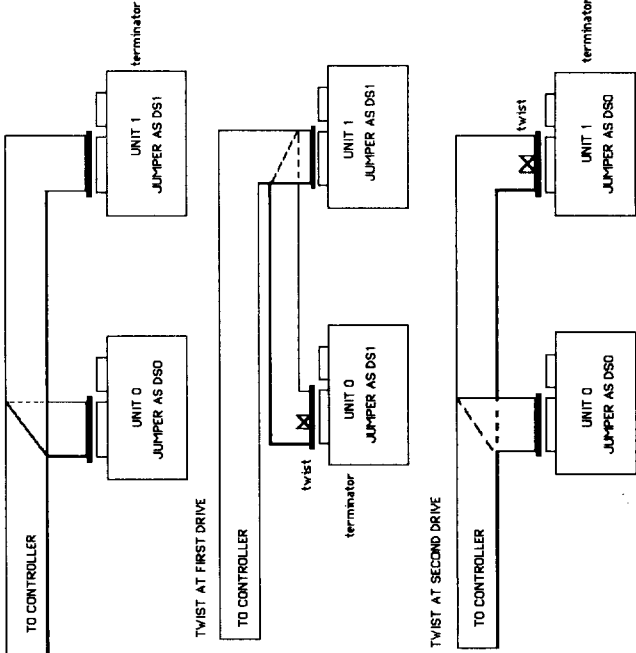
NOTE: Some manufacturers label the jumper as Drive Unit 0 and Drive Unit 1. In the following discussion, these units will be referred to in parenthesis.

In most cases, it is **NOT** necessary to change this jumper setting. However, if there are two hard disk drives, note which is jumpered as Drive Unit 0 (1) and which is jumpered as Drive Unit 1 (2).

NOTE: Hard disk drive jumpers can cause problems if the 34 pin J1 control cable has a twist in it. Jumper the hard disk drives according to the following criteria (refer to the Illustration):

- * 2 drives attached with a straight flat cable J1:
 - Jumper Drive unit 0 as DSO. Jumper Drive unit 1 as DS1.
- * 2 drives attached with a twist in the cable at Drive Unit 0: Jumper both drives as DS1.
- * 2 drives attached with a twist in the cable at Drive Unit 1: Jumper both drives as DSO.

When using straight cables, locate the jumper on the printed circuit board and set the jumper as Drive Unit 0 (1). When using a twisted cable, jumper the drive as Drive Unit 1 (2).



3.3 PS180 Jumpers

The PS180 controller has six jumper blocks for selecting various settings. The following is a brief explanation of each. These jumpers are factory set, and in most cases it will not be necessary to change these jumper settings. The excep-

tions may be JMP5 and JMP6. Refer to the illustration to aid in locating each jumper.

JMP1

Sets the DMA request (DRQ1, DRQ2, or DRQ3) and it is the rightmost jumper block located above the edge connector. JMP1 is factory set for DRQ3. The order of JMP1 is (from left to right) DRQ1, DRQ3, DRQ2.
NOTE: The AT BIOS does not use the DRQ line.

JMP2

Sets the DMA request (DRQ1, DRQ2, or DRQ3) and it is the rightmost jumper block located above the edge connector and left of JMP1. JMP2 is factory set for DACK3. The order of JMP2 is (from left to right) DACK0, DACK1, DACK2, and DACK3. **NOTE:** The AT BIOS does not use the DACK Line.

JMP3

Sets the interrupt line (IRQ3, IRQ4, IRQ5, IRQ6, OR IRQ7). It is located above the edge connector and left of JMP2. JMP3 is factory set for IRQ5. The order of JMP3 is (from left to right) IRQ3, IRQ4, IRQ5, IRQ6, AND IRQ7.

JMP4

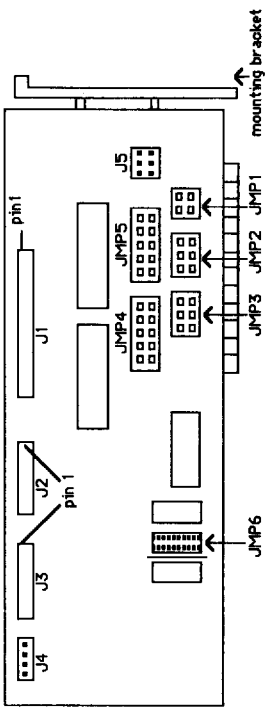
Enables/disables the BIOS. It is located above JMP1. JMP4 is factory set with the BIOS address at C800:0 and with the BIOS enabled. With pin set 1-2 jumpered the BIOS is enabled, and with pin set 1-2 not jumpered the BIOS is disabled.

JMP5

Sets the Port Address base and is located left of JMP4. On the Rev 1.3 board, JMP5 is factory set with pin 7-8 not jumpered to set the Port Address base to 320H. With pin set 7-8 jumpered the Port Address base is 300H. On the Rev 3.1 board, JMP5 is factory set with pin 1-2 jumpered to set the Port Address base to 320H. With pin set 1-2 not jumpered the Port Address base is 324H.

JMP6

Sets the drive types supported by the BIOS. It is located in the bottom middle of the board to the left of the BIOS socket. Refer to the illustration for proper settings of JMP6.



3.4 JMP6

1. Locate JMP6 on the PS180 controller. Refer to the illustration.
2. Refer to the Jumper Tables on the following pages.
3. For the FIRST drive, or if only one drive is installed, use the tables marked Drive Unit 0. For the SECOND Drive use the tables marked Drive Unit 1.
4. Locate the correct jumpering instructions for the hard disk drive by matching the number of heads and cylinders in the table to the user's hard disk drive specifications.
5. Place the jumpers on the pin sets as listed in the table for the hard disk drive. Refer to the illustration for proper placement of jumpers.
6. If connecting a second drive (Drive Unit 1), you must use the same table number as you used for the first drive. If your drives are listed on separate tables, you will need to purchase a custom BIOS from Perstor Systems, Inc. Call your dealer or Perstor Systems, Inc.