HiFD 200MB Internal Drive

User's Guide

OPTIONS
by IBM

Note: Before using this information and the product it supports, be sure to read the information under Appendix C, “Product warranties and notices” on page 2-4.

First Edition (December 1999)

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Before installing this product, read the Safety Information.

مج، يجب قراءة دات السلامة

Antes de instalar este produto, leia as Informações de Segurança.

在安装本产品之前，请仔细阅读 Safety Information (安全信息)。

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Antes de instalar este produto, leia as Informações sobre Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto zariadenia si pečítaje Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

安裝本產品之前，請先閱讀「安全資訊」。

Registering your option

Thank you for purchasing OPTIONS by IBM®. Please take a few moments to register your product and provide us with information that will help IBM to better serve you in the future. Your feedback is valuable to us in developing products and services that are important to you, as well as in developing better ways to communicate with you. Register your option on the IBM Web site at:

http://www.ibm.com/pc/register

IBM will send you information and updates on your registered product unless you indicate on the Web site questionnaire that you do not want to receive further information.

About this book

This manual contains instructions for installing and using your IBM HiFD Internal Drive. The manual is divided into two parts:

Part 1: Installation and user's guide

This section contains the product description, installation requirements, installation instructions, and usage information in the following languages:

- English
- German
- French
- Spanish
- Italian
- Brazilian Portuguese
- Japanese

Part 2: Appendixes

This section contains problem-solving, service, warranties, and notice information.

Note: The illustrations in this manual might be slightly different from your hardware.

Part 1: Installation and user's guide

This guide contains the product description, installation requirements, installation instructions, and usage information. For problem-solving information, go to Appendix A, "Problem solving" on page 2-1.

Product description

The IBM HiFD 200 MB Internal Drive is a 3.5-inch ATAPI (AT Attachment Packet Interface) drive that replaces your existing diskette drive. The HiFD drive is supported in computers that use the industry-standard AT attachment/integrated drive electronics (ATA/IDE) architecture.

The HiFD drive is more versatile than a 1.44 MB[1] or 2.88 MB diskette drive because in addition to reading from and writing to standard 1.44 MB and 720 KB[2] diskettes, the HiFD drive can read from and write to HiFD 200 MB diskettes. You can conserve space on your hard disk by using your HiFD drive to store and organize large files on HiFD 200 MB diskettes. HiFD 200 MB diskettes can easily hold multimedia, imaging, transaction-processing, or database files. The HiFD drive and HiFD diskettes are supported by Microsoft® Windows® 98, Windows 95 OSR2 or later, and Microsoft Windows NT® Workstation.

In addition to this User's Guide, your option package contains:

- HiFD 200 MB Internal Drive
- HiFD drive software CD
- HiFD 200 MB diskette
- Quick Installation poster
- User's Guide (this booklet)
- IDE cable
- Mounting screws
- Safety Information booklet

Contact your place of purchase if parts are missing or damaged. Be sure to retain your proof of purchase. It might be required to receive warranty service.

1 MB equals approximately 1 000 000 bytes.

2 KB equals approximately 1 000 bytes.

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Installation requirements

To install the HiFD drive you must have the following items.

Documentation

You will need the documentation that comes with your computer, operating system, or IDE bus adapter if the adapter is separate from the computer.

Hardware

You must have the following hardware.

- IBM computer or compatible computer with an Intel® Pentium® microprocessor and 16 MB[3] RAM (random-access memory)
- 3.5-inch, 1.44 MB diskette drive slot or bay

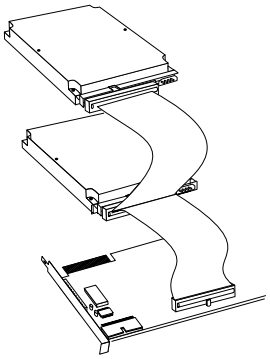
IDE bus

Your computer must have an IDE port on the system board or on an IDE bus adapter. If the interface cable connectors in your computer have 40 pins, your computer uses the IDE architecture. If you are not sure about your IDE bus adapter, see the documentation that comes with your computer.

IDE cables and connectors

The IDE cables connect the IDE port on the system board, or on an IDE bus adapter, to your IDE storage devices. IDE storage devices are hard disk drives, CD-ROM drives, and tape drives.

If your computer has one IDE port, you can attach a maximum of two devices, as shown in the following illustration.



If your computer has two IDE ports (one IDE cable on each port), you can attach up to four devices (two devices on each cable).

[3] When referring to memory storage capacity, MB means approximately 1 000 000 bytes; total user-accessible capacity may vary depending on operating environment.

If your IDE cables have only one connector, you can replace one of the cables with the two-connector IDE cable that comes with this option package.

If you are attaching the HiFD drive to the same port as another device, such as a hard disk drive or tape drive, you might need to change the configuration of that device. For more information, refer to the documentation that comes with the device.

Power connector
You will need an unused power connector on a cable coming from the computer power supply in order to provide power to the drive.

HiFD drive mounting
The HiFD drive replaces the 1.44 MB diskette drive. You might need both a flat-blade and a Phillips-head screwdriver for the installation.

Installing the drive

Follow these steps to install the HiFD drive in your computer.

Step 1. Opening the computer

1. Be sure to back up your computer files before beginning installation.
2. Turn off the computer and all attached devices.
3. Unplug the cables from the power outlets for your computer and all attached devices.

   It is now safe to open your computer.

For specific information about opening your computer, see the documentation that comes with the computer.

Step 2. Unpacking the drive

Follow these steps when you unpack your drive.

1. Do not open the antistatic bag until you are ready to install the drive. Static electricity can damage the drive and other computer components.
2. Touch your hand and the inner conductive surface of the antistatic bag containing the drive to an unpainted metal surface on the computer for two seconds. This drains static electricity from the bag and your body.

3. Before handling the drive, ground yourself by touching an unpainted surface on the computer. Ground yourself again after leaving and returning to your work area.
4. Always handle the drive by its edges. Do not touch any exposed printed circuitry, components, or connector pins.
5. While installing the drive, avoid all unnecessary handling. Rough handling can damage the heads, rotating disks, and bearings inside the drive housing.
6. If you must put the drive down, place the antistatic bag on a flat padded surface, such as a magazine, and place the drive on the bag with the component side facing up.

Step 3. Removing an existing diskette drive

To remove an existing diskette drive:

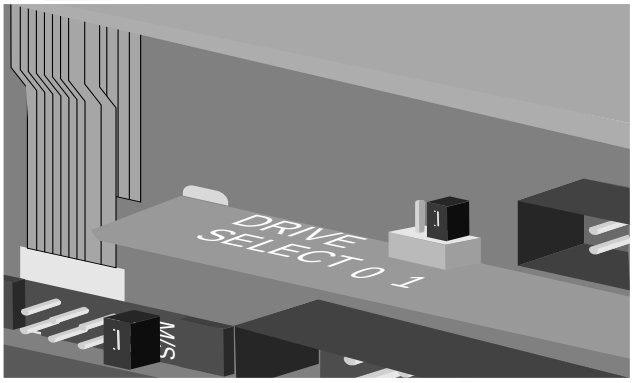
1. Remove the cables that connect the diskette drive to the computer.
2. Remove the existing diskette drive from the drive bay using one of the following procedures:
   - If the diskette drive is attached directly to the drive bay:
     a. Remove the screws that attach the drive to the bay.
     b. Remove the drive from the bay.
   - If the diskette drive is attached to the drive bay by a slide mount:
     a. Slide the drive out of the bay.
     b. Remove the screws from the slide attachments.
     c. Remove the slide attachments from the drive.
   - If the diskette drive is attached to the drive bay by an insert bracket:
     a. Remove the screws attaching the insert bracket to the drive bay.
     b. Remove the bracket from the bay.
     c. Remove the screws attaching the drive to the bracket.
     d. Remove the drive from the bracket.

Step 4. Configuring the drive

This section provides information on configuring the HiFD drive so that you can use it in 1.44 MB diskette mode and in HiFD diskette mode.

Configuring the drive for the 1.44 MB diskette mode

The HiFD drive comes with a jumper placed on position **1**, as shown.

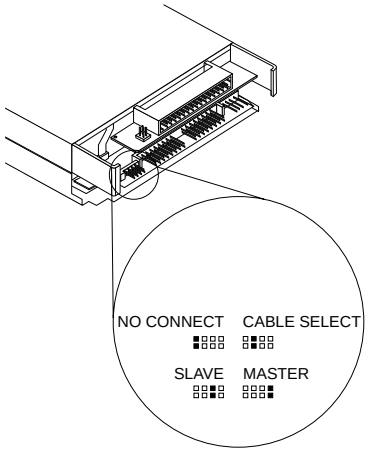


This jumper placement configures the drive in 1.44 MB mode so that you can replace an existing diskette drive with the HiFD drive and use the HiFD drive as the A drive. The drive will only work in the supported IBM computer systems when the jumper is on position **1**.

Configuring the drive for the HiFD mode

You must configure the drive as Slave or Master so that it will work in HiFD mode. The jumper setting configurations for your drive are shown in the following diagram.

Note: The Cable Select and No Connection configurations do not apply to IBM computers.



If you will be connecting the drive to an IDE cable that already has a Master device connected to the cable, be sure that your HiFD is configured as a Slave (factory setting).

If you are installing the drive as the only drive on the IDE cable, configure the drive as a Master.

Step 5. Mounting the drive in the bay

Attention: Be sure to use the mounting screws that come with your drive. You might damage your drive if you use mounting screws that are too long.

To attach the HiFD drive directly to a 3.5-inch drive bay, align the bay screw holes with the drive screw holes; then hand thread the drive screws through the holes.

Step 6. Connecting the drive and the cables

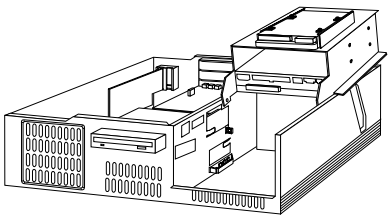
This section provides information on connecting the drive to the IDE cable, the diskette-drive cable, and the diskette-drive power cable.

Connecting the drive to the option package IDE cable

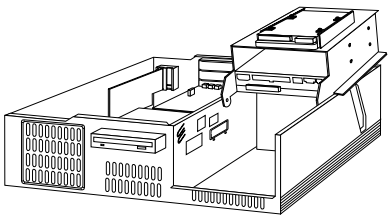
If you will be connecting the drive to an IDE cable already installed in your computer, go to “Connecting the drive to the computer cables” on page 1-8.

If you will be using the included two-drop IDE cable to connect the drive to a tower computer, unwrap the cable and continue with “Connecting the drive to the computer cables” on page 1-8.

If you will be using the included two-drop IDE cable to connect the drive to a desktop computer, review the following diagrams to determine the correct way to wrap the cable in your computer system.



Desktop Computer A

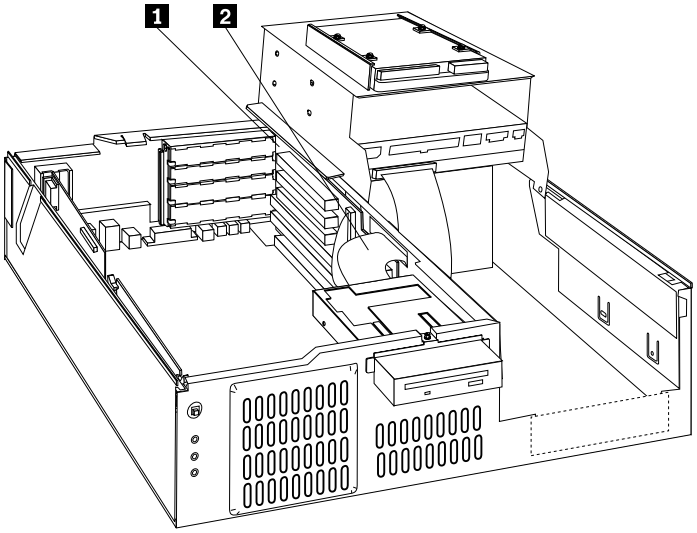


Desktop Computer B

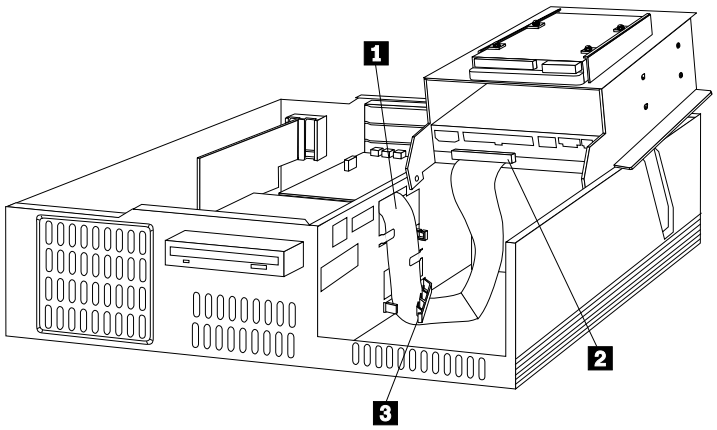
If your system looks like **Desktop Computer A**, connect the included two-drop IDE cable using instructions given in “Connecting the IDE cable in Desktop Computer A” on page 1-7.

If your system looks like **Desktop Computer B**, connect the included two-drop IDE cable using instructions given in “Connecting the IDE cable in Desktop Computer B” on page 1-8.

Connecting the IDE cable in Desktop Computer A

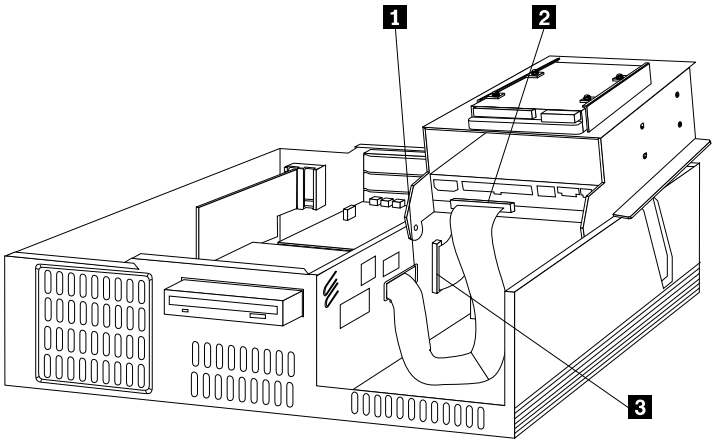


1. Connect the middle cable connector to the HiFD drive **2**.
2. Find the connector at the end of the cable that is closer to the middle cable connector; then connect it to the computer IDE port **1**.



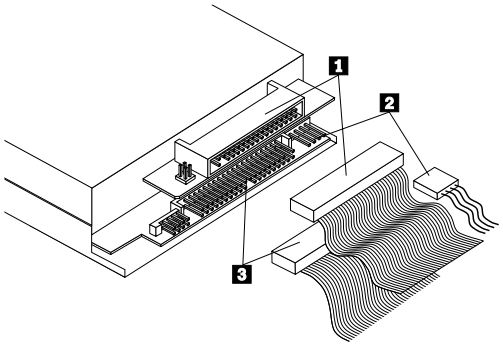
3. Thread the connector on the other end of the cable through the divider bracket slot and the notches **1** on the system board.
4. Secure the cable by closing the clip on the divider bracket **3**.
5. Connect the other end cable connector to a CD-ROM drive or another IDE device installed in the computer **2**.
6. Go to “Connecting the drive to the computer cables” on page 1-8 for information on connecting the diskette-drive cable and the diskette-drive power cable.

Connecting the IDE cable in Desktop Computer B



1. Connect the middle cable connector to a CD-ROM drive or another IDE device already installed in the computer **2** .
2. Find the connector on the end of the cable that is closer to the middle cable connector and connect it to the computer IDE port **3** .
3. Thread the connector on the other end of the cable through the divider bracket on the system board **1** ; then connect it to the HiFD drive.
4. Go to "Connecting the drive to the computer cables" for information on connecting the diskette-drive cable and the diskette-drive power cable.

Connecting the drive to the computer cables



Note: If you have connected the drive to the included two-drop IDE cable, go to step 2 below.

1. Connect the drive to the computer IDE cable.

a. Connect the drive to an available 40-pin connector on the computer IDE cable.

b. Align the cable so that the color-coded edge is closest to the power-cable connector **3**. The cable connector is keyed and fits only one way.

c. The IDE cable can have up to three connectors. For the best signal quality when you are connecting only one Master device on the IDE cable, connect one end of the cable to the IDE port and connect the device to the connector to the other end of the cable. Do not use the middle connector.

d. If you are connecting two devices on the IDE cable, connect one end of the cable to the IDE port and connect the Master and Slave devices to the remaining connectors on the other end. If you need a second cable, you can use the IDE cable that comes with the option package. For more information on the option package IDE cable, go to "Connecting the drive to the option package IDE cable" on page 1-6.

2. Connect one end of the diskette-drive cable to the diskette drive connector on the HiFD drive, as shown **1**, and connect the other end of the diskette-drive cable to the computer diskette drive connector. The cable connector is keyed and fits only one way.

3. Connect an available dc diskette-drive power-cable connector to the four-pin dc power connector on the HiFD drive, as shown **2**. Be sure that the cables will not be pinched or crowded by the computer cover and that all other cable and power connections are secure.

Step 7. Completing the hardware installation

To complete the installation of the drive:

1. Verify that the drive is securely mounted and the cables are firmly attached.

2. Verify that the startup hard disk drive is connected as the Master on the primary IDE port. For more information on the computer IDE ports, refer to the documentation that came with your computer.

3. Verify that the cables do not interfere with the computer cover and do not block the power-supply fan blades or air-flow paths.

4. Reinstall the computer cover.

5. Reconnect all devices. Make sure that the keyboard, mouse, and monitor cables are firmly connected.

6. Reconnect all ac power cords.

Step 8. Installing the HiFD drive device driver

Note: The label on the HiFD installation CD provides instructions on installing the HiFD drive device driver. If you have any problems with the instructions on the CD label, return to the installation instructions in this section.

Installing the HiFD drive device driver for Windows 98 or Windows 95 OSR2 or later

To install the HiFD drive device driver for Windows 98 or Windows 95 OSR2 or later:

1. Turn on your computer and start your operating system.
2. Insert the HiFD device driver CD into the computer CD-ROM drive.

   If the installation program starts automatically, follow the on-screen instructions; then go to “Using the HiFD drive” on page 1-11 when installation completes.

   If the installation program does not start automatically, continue with the next step.
3. Click **Start**.
4. Select **Settings**.
5. Click **Control Panel**.
6. Double-click **Add New Hardware**.
7. Click **Next** twice.
8. Place a check in the **No I want to select the hardware from a list** check box.
9. Click **Next**.
10. In the displayed list, select **Floppy disk controllers**.
11. Click **Next**.
12. Click **Have Disk...**.
13. Type *x*`:\disk1\driver\win95` where *x* is the drive letter for your CD-ROM drive.
14. Click **OK**.
15. Restart your computer.

Installing the HiFD drive device driver for Windows NT

To install the HiFD drive device driver for Windows NT:

1. Turn on your computer and start your operating system.
2. Insert the HiFD device driver CD into the computer CD-ROM drive.

   If the installation program starts automatically, follow the on-screen instructions; then go to “Using the HiFD drive” on page 1-11 when installation completes.

   If the installation program does not start automatically, continue with the next step.
3. Click **Start**.
4. Select **Settings**.
5. Click **Control Panel**.
6. Double-click **SCSI Adapters**.

7. Click **Drivers**.
8. Click **Add**.
9. Click **Have Disk...**.
10. Type *x*:\disk1\driver\winnt4 where *x* is the drive letter for your CD-ROM drive.
11. Click **OK**.
12. Restart your computer.

Step 9. Installing the HiFD drive utility software

To install the HiFD drive utility software:

1. Turn on your computer and operating system.
2. Insert the HiFD device driver CD into the computer CD-ROM drive.
3. Click **Run**.
4. Type *x*:\disk1\setup.exe where *x* is the drive letter for your CD-ROM drive.
5. Follow the on-screen instructions.

For more information on the HiFD drive utility software, go to "Using the HiFD utility software" on page 1-12.

Using the HiFD drive

You can use your HiFD drive in place of your computer diskette drive. Depending on the configured mode, your HiFD drive will be drive A for 1.44 MB or 720 KB diskettes or the next available drive letter (such as D or E) for HiFD 200 MB diskettes.

You can use the HiFD drive and diskettes to:

- Read from and write to 1.44 MB or 720 KB diskettes.
- Conserve hard disk drive space by storing up to 200 MB of data on a HiFD diskette.
- Transport large amounts of information on HiFD diskettes.
- Back up and archive files.
- Store multimedia files that require large amounts of storage space.

Using the HiFD utility software

The HiFD utility software includes the following features:

- **HiFD icon**

  The **HiFD** icon displays in **My Computer** after you install the utility software.

- **HiFD Eject**

  You can eject a diskette from the HiFD drive by using the right-click button to click the **HiFD** icon and selecting **EJECT** in the pull-down menu. For information on using the emergency diskette eject procedure, refer to "Ejecting a diskette from a HiFD drive" on page 1-12.

- **HiFD Copy**

  You can copy files on a HiFD to the HiFD drive by using the right-click button to click the **HiFD** icon and selecting **Copy Disk** in the pull-down menu.

- **HiFD Format**

  Note: You cannot use the Windows **Format** command to format the HiFD drive or HiFD diskettes.

  You can format the HiFD drive or a HiFD diskette by using the right-click button to click the **HiFD** icon and selecting **Format** in the pull-down menu.

Write-protecting HiFD diskettes

HiFD diskettes have a sensing hole so that they can be recognized by HiFD drives. A small insertion-protection indentation prevents you from inserting a HiFD diskette into a non-HiFD diskette drive. You can write-protect a HiFD diskette by pushing up the Write-Protect tab on the diskette.

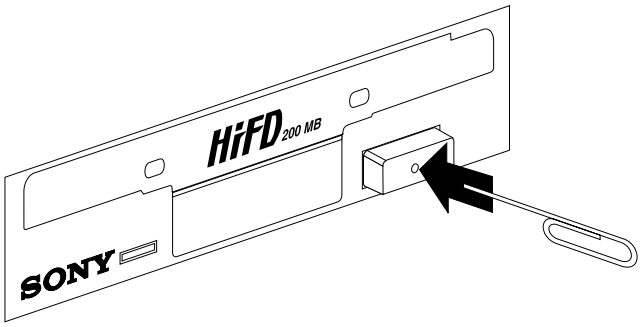
Ejecting a diskette from a HiFD drive

Attention: You might damage the HiFD drive if you press the Eject button too hard.

If a diskette cannot be ejected with the Eject button, you can use the following emergency eject instructions:

1. Turn off the computer and all attached devices.
2. Unplug the cables from the power outlets for your computer and all attached devices.
3. Remove the system faceplate or cover.
4. Straighten a large paper clip to form a tool. The straightened end must extend at least 45 mm (1.8 in.).

5. Insert the extended end into the manual-eject hole on the front of the drive, as shown.



6. Push the paper clip until the diskette is ejected.
7. Gently remove the diskette.

Installation and user's guide (Translate)

This guide contains the product description, installation requirements, installation instructions, and usage information. For problem-solving information, go to Appendix A, "Problem solving" on page 2-1.

Product description

The IBM HiFD 200 MB Internal Drive is a 3.5-inch ATAPI (AT Attachment Packet Interface) drive that replaces your existing diskette drive. The HiFD drive is supported in computers that use the industry-standard AT attachment/integrated drive electronics (ATA/IDE) architecture.

The HiFD drive is more versatile than a 1.44 MB[4] or 2.88 MB diskette drive because in addition to reading from and writing to standard 1.44 MB and 720 KB[5] diskettes, the HiFD drive can read from and write to HiFD 200 MB diskettes. You can conserve space on your hard disk by using your HiFD drive to store and organize large files on HiFD 200 MB diskettes. HiFD 200 MB diskettes can easily hold multimedia, imaging, transaction-processing, or database files. The HiFD drive and HiFD diskettes are supported by Microsoft® Windows® 98, Windows 95 OSR2 or later, and Microsoft Windows NT® Workstation.

In addition to this User's Guide, your option package contains:

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- HiFD 200 MB diskette
- Quick Installation poster
- User's Guide (this booklet)
- IDE cable
- Mounting screws
- Safety Information booklet

Contact your place of purchase if parts are missing or damaged. Be sure to retain your proof of purchase. It might be required to receive warranty service.

4 MB equals approximately 1 000 000 bytes.

5 KB equals approximately 1 000 bytes.

Installation requirements

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Hardware

You must have the following hardware.

- IBM computer or compatible computer with an Intel® Pentium® microprocessor and 16 MB[6] RAM (random-access memory)
- 3.5-inch, 1.44 MB diskette drive slot or bay

IDE bus

Your computer must have an IDE port on the system board or on an IDE bus adapter. If the interface cable connectors in your computer have 40 pins, your computer uses the IDE architecture. If you are not sure about your IDE bus adapter, see the documentation that comes with your computer.

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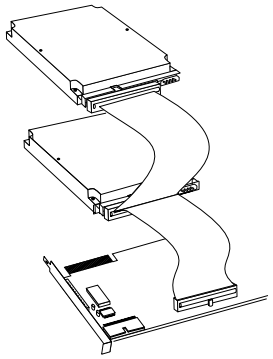


If your computer has two IDE ports (one IDE cable on each port), you can attach up to four devices (two devices on each cable).

6 When referring to memory storage capacity, MB means approximately 1 000 000 bytes; total user-accessible capacity may vary depending on operating environment.

If your IDE cables have only one connector, you can replace one of the cables with the two-connector IDE cable that comes with this option package.

If you are attaching the HiFD drive to the same port as another device, such as a hard disk drive or tape drive, you might need to change the configuration of that device. For more information, refer to the documentation that comes with the device.

Power connector
You will need an unused power connector on a cable coming from the computer power supply in order to provide power to the drive.

HiFD drive mounting
The HiFD drive replaces the 1.44 MB diskette drive. You might need both a flat-blade and a Phillips-head screwdriver for the installation.

Installing the drive

Follow these steps to install the HiFD drive in your computer.

Step 1. Opening the computer

1. Be sure to back up your computer files before beginning installation.
2. Turn off the computer and all attached devices.
3. Unplug the cables from the power outlets for your computer and all attached devices.

   It is now safe to open your computer.

For specific information about opening your computer, see the documentation that comes with the computer.

Step 2. Unpacking the drive

Follow these steps when you unpack your drive.

1. Do not open the antistatic bag until you are ready to install the drive. Static electricity can damage the drive and other computer components.
2. Touch your hand and the inner conductive surface of the antistatic bag containing the drive to an unpainted metal surface on the computer for two seconds. This drains static electricity from the bag and your body.

3. Before handling the drive, ground yourself by touching an unpainted surface on the computer. Ground yourself again after leaving and returning to your work area.
4. Always handle the drive by its edges. Do not touch any exposed printed circuitry, components, or connector pins.
5. While installing the drive, avoid all unnecessary handling. Rough handling can damage the heads, rotating disks, and bearings inside the drive housing.
6. If you must put the drive down, place the antistatic bag on a flat padded surface, such as a magazine, and place the drive on the bag with the component side facing up.

Step 3. Removing an existing diskette drive

To remove an existing diskette drive:

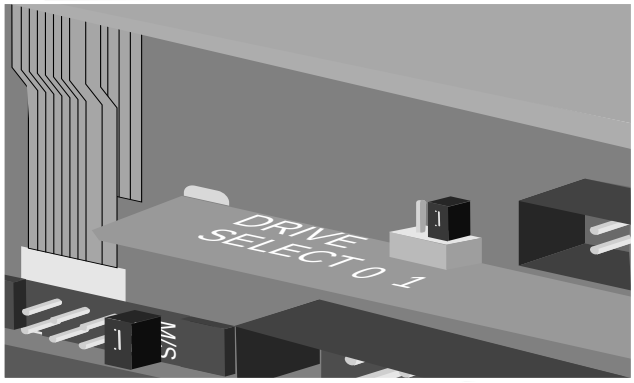
1. Remove the cables that connect the diskette drive to the computer.
2. Remove the existing diskette drive from the drive bay using one of the following procedures:
   - If the diskette drive is attached directly to the drive bay:
     a. Remove the screws that attach the drive to the bay.
     b. Remove the drive from the bay.
   - If the diskette drive is attached to the drive bay by a slide mount:
     a. Slide the drive out of the bay.
     b. Remove the screws from the slide attachments.
     c. Remove the slide attachments from the drive.
   - If the diskette drive is attached to the drive bay by an insert bracket:
     a. Remove the screws attaching the insert bracket to the drive bay.
     b. Remove the bracket from the bay.
     c. Remove the screws attaching the drive to the bracket.
     d. Remove the drive from the bracket.

Step 4. Configuring the drive

This section provides information on configuring the HiFD drive so that you can use it in 1.44 MB diskette mode and in HiFD diskette mode.

Configuring the drive for the 1.44 MB diskette mode

The HiFD drive comes with a jumper placed on position **1**, as shown.

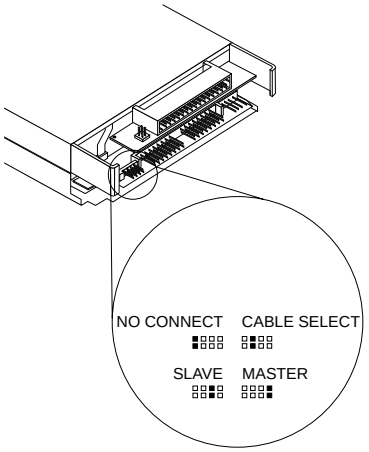


This jumper placement configures the drive in 1.44 MB mode so that you can replace an existing diskette drive with the HiFD drive and use the HiFD drive as the A drive. The drive will only work in the supported IBM computer systems when the jumper is on position **1**.

Configuring the drive for the HiFD mode

You must configure the drive as Slave or Master so that it will work in HiFD mode. The jumper setting configurations for your drive are shown in the following diagram.

Note: The Cable Select and No Connection configurations do not apply to IBM computers.



If you will be connecting the drive to an IDE cable that already has a Master device connected to the cable, be sure that your HiFD is configured as a Slave (factory setting).

If you are installing the drive as the only drive on the IDE cable, configure the drive as a Master.

Step 5. Mounting the drive in the bay

Attention: Be sure to use the mounting screws that come with your drive. You might damage your drive if you use mounting screws that are too long.

To attach the HiFD drive directly to a 3.5-inch drive bay, align the bay screw holes with the drive screw holes; then hand thread the drive screws through the holes.

Step 6. Connecting the drive and the cables

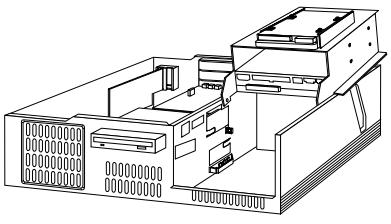
This section provides information on connecting the drive to the IDE cable, the diskette-drive cable, and the diskette-drive power cable.

Connecting the drive to the option package IDE cable

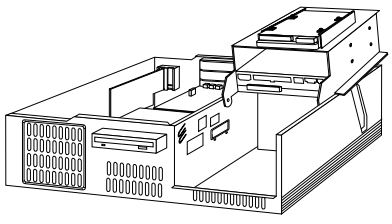
If you will be connecting the drive to an IDE cable already installed in your computer, go to “Connecting the drive to the computer cables” on page 1-21.

If you will be using the included two-drop IDE cable to connect the drive to a tower computer, unwrap the cable and continue with “Connecting the drive to the computer cables” on page 1-21.

If you will be using the included two-drop IDE cable to connect the drive to a desktop computer, review the following diagrams to determine the correct way to wrap the cable in your computer system.



Desktop Computer A

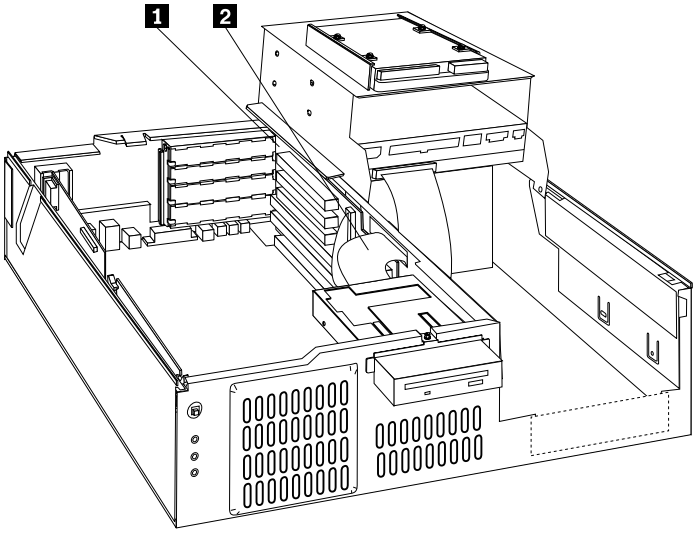


Desktop Computer B

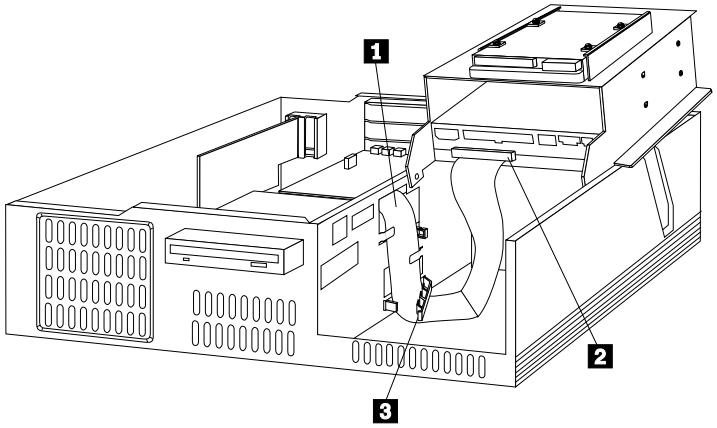
If your system looks like **Desktop Computer A**, connect the included two-drop IDE cable using instructions given in “Connecting the IDE cable in Desktop Computer A” on page 1-20.

If your system looks like **Desktop Computer B**, connect the included two-drop IDE cable using instructions given in “Connecting the IDE cable in Desktop Computer B” on page 1-21.

Connecting the IDE cable in Desktop Computer A

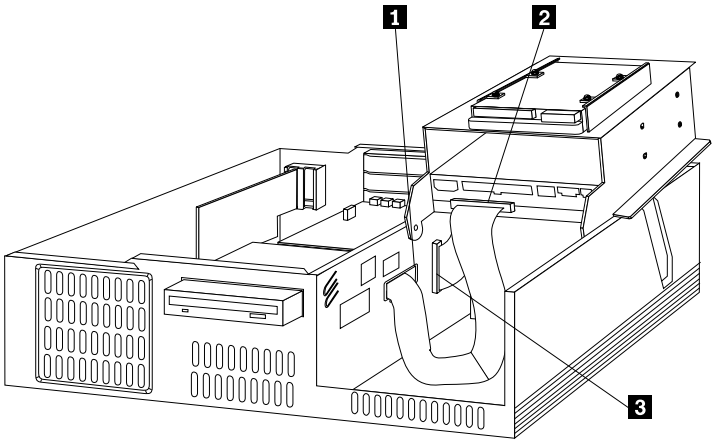


1. Connect the middle cable connector to the HiFD drive **2**.
2. Find the connector at the end of the cable that is closer to the middle cable connector; then connect it to the computer IDE port **1**.



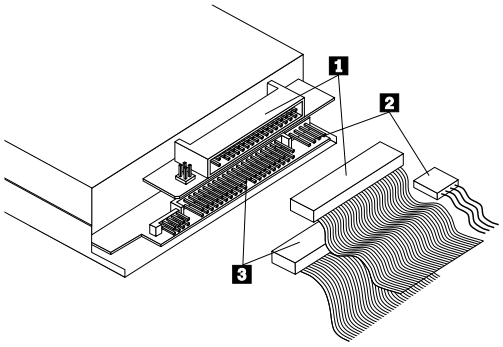
3. Thread the connector on the other end of the cable through the divider bracket slot and the notches **1** on the system board.
4. Secure the cable by closing the clip on the divider bracket **3**.
5. Connect the other end cable connector to a CD-ROM drive or another IDE device installed in the computer **2**.
6. Go to “Connecting the drive to the computer cables” on page 1-21 for information on connecting the diskette-drive cable and the diskette-drive power cable.

Connecting the IDE cable in Desktop Computer B



1. Connect the middle cable connector to a CD-ROM drive or another IDE device already installed in the computer **2**.
2. Find the connector on the end of the cable that is closer to the middle cable connector and connect it to the computer IDE port **3**.
3. Thread the connector on the other end of the cable through the divider bracket on the system board **1**; then connect it to the HiFD drive.
4. Go to "Connecting the drive to the computer cables" for information on connecting the diskette-drive cable and the diskette-drive power cable.

Connecting the drive to the computer cables



Note: If you have connected the drive to the included two-drop IDE cable, go to step 2 below.

1. Connect the drive to the computer IDE cable.

a. Connect the drive to an available 40-pin connector on the computer IDE cable.

b. Align the cable so that the color-coded edge is closest to the power-cable connector **3**. The cable connector is keyed and fits only one way.

c. The IDE cable can have up to three connectors. For the best signal quality when you are connecting only one Master device on the IDE cable, connect one end of the cable to the IDE port and connect the device to the connector to the other end of the cable. Do not use the middle connector.

d. If you are connecting two devices on the IDE cable, connect one end of the cable to the IDE port and connect the Master and Slave devices to the remaining connectors on the other end. If you need a second cable, you can use the IDE cable that comes with the option package. For more information on the option package IDE cable, go to "Connecting the drive to the option package IDE cable" on page 1-19.

2. Connect one end of the diskette-drive cable to the diskette drive connector on the HiFD drive, as shown **1**, and connect the other end of the diskette-drive cable to the computer diskette drive connector. The cable connector is keyed and fits only one way.

3. Connect an available dc diskette-drive power-cable connector to the four-pin dc power connector on the HiFD drive, as shown **2**. Be sure that the cables will not be pinched or crowded by the computer cover and that all other cable and power connections are secure.

Step 7. Completing the hardware installation

To complete the installation of the drive:

1. Verify that the drive is securely mounted and the cables are firmly attached.

2. Verify that the startup hard disk drive is connected as the Master on the primary IDE port. For more information on the computer IDE ports, refer to the documentation that came with your computer.

3. Verify that the cables do not interfere with the computer cover and do not block the power-supply fan blades or air-flow paths.

4. Reinstall the computer cover.

5. Reconnect all devices. Make sure that the keyboard, mouse, and monitor cables are firmly connected.

6. Reconnect all ac power cords.

Step 8. Installing the HiFD drive device driver

Note: The label on the HiFD installation CD provides instructions on installing the HiFD drive device driver. If you have any problems with the instructions on the CD label, return to the installation instructions in this section.

Installing the HiFD drive device driver for Windows 98 or Windows 95 OSR2 or later

To install the HiFD drive device driver for Windows 98 or Windows 95 OSR2 or later:

1. Turn on your computer and start your operating system.
2. Insert the HiFD device driver CD into the computer CD-ROM drive.

   If the installation program starts automatically, follow the on-screen instructions; then go to "Using the HiFD drive" on page 1-24 when installation completes.

   If the installation program does not start automatically, continue with the next step.
3. Click **Start**.
4. Select **Settings**.
5. Click **Control Panel**.
6. Double-click **Add New Hardware**.
7. Click **Next** twice.
8. Place a check in the **No I want to select the hardware from a list** check box.
9. Click **Next**.
10. In the displayed list, select **Floppy disk controllers**.
11. Click **Next**.
12. Click **Have Disk...**.
13. Type *x*:\disk1\driver\win95 where *x* is the drive letter for your CD-ROM drive.
14. Click **OK**.
15. Restart your computer.

Installing the HiFD drive device driver for Windows NT

To install the HiFD drive device driver for Windows NT:

1. Turn on your computer and start your operating system.
2. Insert the HiFD device driver CD into the computer CD-ROM drive.

   If the installation program starts automatically, follow the on-screen instructions; then go to "Using the HiFD drive" on page 1-24 when installation completes.

   If the installation program does not start automatically, continue with the next step.
3. Click **Start**.
4. Select **Settings**.
5. Click **Control Panel**.
6. Double-click **SCSI Adapters**.

7. Click **Drivers**.
8. Click **Add**.
9. Click **Have Disk...**.
10. Type *x*:\disk1\driver\winnt4 where *x* is the drive letter for your CD-ROM drive.
11. Click **OK**.
12. Restart your computer.

Step 9. Installing the HiFD drive utility software

To install the HiFD drive utility software:

1. Turn on your computer and operating system.
2. Insert the HiFD device driver CD into the computer CD-ROM drive.
3. Click **Run**.
4. Type *x*:\disk1\setup.exe where *x* is the drive letter for your CD-ROM drive.
5. Follow the on-screen instructions.

For more information on the HiFD drive utility software, go to "Using the HiFD utility software" on page 1-25.

Using the HiFD drive

You can use your HiFD drive in place of your computer diskette drive. Depending on the configured mode, your HiFD drive will be drive A for 1.44 MB or 720 KB diskettes or the next available drive letter (such as D or E) for HiFD 200 MB diskettes.

You can use the HiFD drive and diskettes to:

- Read from and write to 1.44 MB or 720 KB diskettes.
- Conserve hard disk drive space by storing up to 200 MB of data on a HiFD diskette.
- Transport large amounts of information on HiFD diskettes.
- Back up and archive files.
- Store multimedia files that require large amounts of storage space.

Using the HiFD utility software

The HiFD utility software includes the following features:

- **HiFD icon**

  The **HiFD** icon displays in **My Computer** after you install the utility software.

- **HiFD Eject**

  You can eject a diskette from the HiFD drive by using the right-click button to click the **HiFD** icon and selecting **EJECT** in the pull-down menu. For information on using the emergency diskette eject procedure, refer to "Ejecting a diskette from a HiFD drive" on page 1-25.

- **HiFD Copy**

  You can copy files on a HiFD to the HiFD drive by using the right-click button to click the **HiFD** icon and selecting **Copy Disk** in the pull-down menu.

- **HiFD Format**

  Note: You cannot use the Windows **Format** command to format the HiFD drive or HiFD diskettes.

  You can format the HiFD drive or a HiFD diskette by using the right-click button to click the **HiFD** icon and selecting **Format** in the pull-down menu.

Write-protecting HiFD diskettes

HiFD diskettes have a sensing hole so that they can be recognized by HiFD drives. A small insertion-protection indentation prevents you from inserting a HiFD diskette into a non-HiFD diskette drive. You can write-protect a HiFD diskette by pushing up the Write-Protect tab on the diskette.

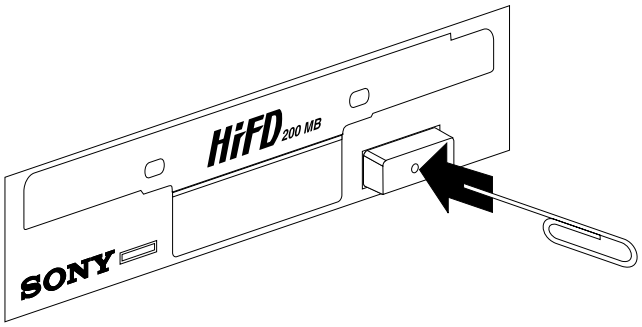
Ejecting a diskette from a HiFD drive

Attention: You might damage the HiFD drive if you press the Eject button too hard.

If a diskette cannot be ejected with the Eject button, you can use the following emergency eject instructions:

1. Turn off the computer and all attached devices.
2. Unplug the cables from the power outlets for your computer and all attached devices.
3. Remove the system faceplate or cover.
4. Straighten a large paper clip to form a tool. The straightened end must extend at least 45 mm (1.8 in.).

5. Insert the extended end into the manual-eject hole on the front of the drive, as shown.



6. Push the paper clip until the diskette is ejected.
7. Gently remove the diskette.

Product service and warranty information

For technical support, support hours, and warranty terms and conditions, see the enclosed inserts, or contact your IBM reseller or IBM marketing representative.

Part 2: Appendixes

The following appendixes contain problem-solving, help and service information, the product warranties, and notices.

Appendix A. Problem solving

Computer problems can be caused by hardware, software, or user error. You might be able to use the information in this section to solve problems yourself, or gather helpful information you can pass on to a service technician.

Review the following list for any problem descriptions that might fit your situation.

- **The computer screen does not display during computer startup.**

  Check that all devices are properly connected to the computer and the electrical outlet.

- **You do not see the HiFD drive or the HiFD drive icon in My Computer (Windows 98, Windows 95 OSR2 or later, and Windows NT).**

  Take the following actions.

  1. Check the CMOS configuration for the computer system. For information on configuring CMOS, see the documentation that came with your computer.
  2. Turn off the computer, unplug the cables from the electrical outlets for your computer and all attached devices, and remove the computer cover.
  3. Be sure that the cables are properly attached. For more information, see “Step 6. Connecting the drive and the cables” on page 1-6.
  4. Verify that there is one device configured as Master and one device configured as Slave on each IDE cable connected to a computer IDE port.
  5. Verify that the cable connections on the drive and the computer are secure.
  6. Be sure that the drive and other devices on the device chain are correctly configured. For more information, see “Step 4. Configuring the drive” on page 1-5.
  7. Be sure that there are only IDE devices on the device chain.
  8. Reinstall the HiFD device driver and the utility software. For more information on installing the HiFD software, see “Step 8. Installing the HiFD drive device driver” on page 1-10. For more information on installing the HiFD utility software, see “Using the HiFD utility software” on page 1-12.

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- **You do not see drive A in My Computer (Windows 98, Windows 95 OSR2 or later, and Windows NT).**

  Take the following actions.

  1. Check the CMOS configuration for the computer system.
  2. Turn off the computer, unplug the cables from the electrical outlets for your computer and all attached devices, and remove the computer cover.
  3. Be sure that the diskette-drive cable is connected to the HiFD drive. For more information, see “Step 6. Connecting the drive and the cables” on page 1-6.
  4. Verify that the dc power cable is securely connected to the drive. For more information, refer to “Step 6. Connecting the drive and the cables” on page 1-6.

- **The computer displays an error message.**

  Take the following actions.

  1. Be sure that there are only IDE devices on the device chain and that there is one device configured as a Master and one device configured as a Slave on each IDE cable connected to a computer IDE port.
  2. You might be using a damaged diskette. Try using another diskette.

Appendix B. Help and service information

This section contains information on how to obtain online and telephone technical support.

Online technical support

Online technical support is available during the life of your product. Online assistance can be obtained through the Personal Computing Support Web site and the IBM Automated Fax System.

Online technical support	
IBM Personal Computing Support Web Site	http://www.ibm.com/pc/support
IBM Automated Fax System	1-800-426-3395 (U.S. and Canada)

During the warranty period, assistance for replacement or exchange of defective components is available. In addition, if your IBM option is installed in an IBM computer, you might be entitled to service at your location. Your technical support representative can help you determine the best alternative.

Telephone technical support

Marketing, installation, and configuration support through the HelpCenter will be withdrawn or made available for a fee, at IBM's discretion, 90 days after the option has been withdrawn from marketing. Additional support offerings, including step-by-step installation assistance, are available for a nominal fee.

To assist the technical support representative, have available as much of the following information as possible:

1. Option name
2. Option number
3. Proof of purchase
4. Computer manufacturer, model, serial number (if IBM), and manual
5. Exact wording of the error message (if any)
6. Description of the problem
7. Hardware and software configuration information for your system

If possible, be at your computer. Your technical support representative might want to walk you through the problem during the call.

For the support telephone number and support hours by country, refer to the following table or to the enclosed technical support insert. If the number is not provided, contact your IBM reseller or IBM marketing representative. Response time may vary depending on the number and nature of the calls received.

Support 24 hours a day, 7 days a week	
Canada (Toronto only)	416-383-3344
Canada (all other)	1-800-565-3344
U.S.A./Puerto Rico	1-800-772-2227

Appendix C. Product warranties and notices

Warranty Statements

The warranty statements consist of two parts: Part 1 and Part 2. Part 1 varies by country. Part 2 is the same for both statements. Be sure to read both the Part 1 that applies to your country and Part 2.

- **United States, Puerto Rico, and Canada (Z125-4753-05 11/97)**
  (Part 1 - General Terms on page 2-4)
- **Worldwide except Canada, Puerto Rico, Turkey, and United States (Z125-5697-01 11/97)**
  (Part 1 - General Terms on page 2-7)
- **Worldwide Country-Unique Terms**
  (Part 2 - Country-Unique Terms on page 2-9)

IBM Statement of Limited Warranty for United States, Puerto Rico, and Canada (Part 1 - General Terms)

This Statement of Limited Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. **The terms of Part 2 may replace or modify those of Part 1**. *The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.*

Machine - HiFD 200 MB Internal Drive

Warranty Period* - One Year

**Contact your place of purchase for warranty service information. Some IBM Machines are eligible for On-site warranty service depending on the country where service is performed.*

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally

equivalent, you may return it to your place of purchase and your money will be refunded. The replacement may not be new, but will be in good working order.

Extent of Warranty
The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty
IBM does not warrant uninterrupted or error-free operation of a Machine.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND.**

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with "how-to" questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service
To obtain warranty service for the Machine, contact your reseller or IBM. In the United States, call IBM at 1-800-772-2227. In Canada, call IBM at 1-800-565-3344. (In Toronto, call 416-383-3344.) You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. IBM may repair the failing Machine or exchange it at its discretion.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided
   a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides,
   b. secure all programs, data, and funds contained in a Machine,
   c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations, and
   d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Production Status

Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

Limitation of Liability

Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and

2. the amount of any other actual direct damages, up to the greater of U.S. $100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

   This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL

DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

IBM Statement of Warranty Worldwide except Canada, Puerto Rico, Turkey, United States (Part 1 - General Terms)

This Statement of Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. **The terms of Part 2 may replace or modify those of Part 1**. *The warranties provided by IBM in this Statement of Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.*

Machine - HiFD 200 MB Internal Drive

Warranty Period* - One Year

**Contact your place of purchase for warranty service information. Some IBM Machines are eligible for On-site warranty service depending on the country where service is performed.*

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if approved by IBM to provide warranty service, will provide repair and exchange service for the Machine, without charge, under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded. The replacement may not be new, but will be in good working order.

Extent of Warranty

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU

SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

Unless specified otherwise, IBM provides non-IBM machines **WITHOUT WARRANTIES OF ANY KIND.**

Any technical or other support provided for a Machine under warranty, such as assistance via telephone with "how-to" questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service

To obtain warranty service for the Machine, contact your reseller or IBM. You may be required to present proof of purchase.

IBM or your reseller provides certain types of repair and exchange service, either at your location or at a service center, to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. IBM may repair the failing Machine or exchange it at its discretion.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item.

Any feature, conversion, or upgrade IBM or your reseller services must be installed on a Machine which is 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to

1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided
   a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides,
   b. secure all programs, data, and funds contained in a Machine,
   c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfil their obligations, and

d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Production Status
Each IBM Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's appropriate warranty terms apply.

Limitation of Liability
Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and
2. the amount of any other actual direct damages, up to the greater of U.S. $100,000 (or equivalent in local currency) or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

   This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Part 2 - Worldwide Country-Unique Terms

ASIA PACIFIC

AUSTRALIA: The IBM Warranty for Machines: The following paragraph is added to this Section:
The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other legislation and are only limited to the extent permitted by the applicable legislation.

Extent of Warranty: The following replaces the first and second sentences of this Section:

The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, operation in other than the Specified Operating Environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible.

Limitation of Liability: The following is added to this Section:
Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974, IBM's liability is limited to the repair or replacement of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

PEOPLE'S REPUBLIC OF CHINA: Governing Law: The following is added to this Statement:
The laws of the State of New York govern this Statement.

INDIA: Limitation of Liability: The following replaces items 1 and 2 of this Section:
1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence;
2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

NEW ZEALAND: The IBM Warranty for Machines: The following paragraph is added to this Section:
The warranties specified in this Section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

Limitation of Liability: The following is added to this Section:
Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

EUROPE, MIDDLE EAST, AFRICA (EMEA)

The following terms apply to all EMEA countries.

The terms of this Statement of Warranty apply to Machines purchased from an IBM reseller. If you purchased this Machine from IBM, the terms and conditions of the applicable IBM agreement prevail over this warranty statement.

Warranty Service
If you purchased an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or United Kingdom, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchased an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

The applicable laws, Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided. However, the laws of Austria govern this Statement if the warranty service is provided in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Federal Republic of Yugoslavia, Georgia, Hungary, Kazakhstan, Kirghizia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, and Ukraine.

The following terms apply to the country specified:

EGYPT: Limitation of Liability: The following replaces item 2 in this Section:
2. as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

FRANCE: Limitation of Liability: The following replaces the second sentence of the first paragraph of this Section:
In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: (items 1 and 2 unchanged).

GERMANY: The IBM Warranty for Machines: The following replaces the first sentence of the first paragraph of this Section:
The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section:
The minimum warranty period for Machines is six months.

In case IBM or your reseller are unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

Extent of Warranty: The second paragraph does not apply.

Warranty Service: The following is added to this Section:
During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

Production Status: The following paragraph replaces this Section:
Each Machine is newly manufactured. It may incorporate in addition to new parts, re-used parts as well.

Limitation of Liability: The following is added to this Section:
The limitations and exclusions specified in the Statement of Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

In item 2, replace “U.S. $100,000” with “1.000.000 DEM.”

The following sentence is added to the end of the first paragraph of item 2:
IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

IRELAND: Extent of Warranty: The following is added to this Section:
Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

Limitation of Liability: The following replaces items one and two of the first paragraph of this Section:
1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and 2. the amount of any other actual direct damages, up to the greater of Irish Pounds 75,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section:
IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

ITALY: Limitation of Liability: The following replaces the second sentence in the first paragraph:
In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than: (item 1 unchanged) 2)as to any other actual damage arising in all situations involving non-performance by IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim.

Applicability of suppliers and resellers (unchanged).

The following replaces the second paragraph of this Section:
Unless otherwise provided by mandatory law, IBM and your reseller are not liable for any of the following: (items 1 and 2 unchanged) 3) indirect damages, even if IBM or your reseller is informed of their possibility.

SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND: Limitation of Liability: The following is added to this Section:
IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.

TURKIYE: Production Status: The following replaces this Section:
IBM fulfils customer orders for IBM Machines as newly manufactured in accordance with IBM's production standards.

UNITED KINGDOM: Limitation of Liability: The following replaces items 1 and 2 of the first paragraph of this Section:
1. death or personal injury or physical damage to your real property solely caused by IBM's negligence;
2. the amount of any other actual direct damages or loss, up to the greater of Pounds Sterling 150,000 or 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

The following item is added to this paragraph:
3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section:
IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default will be limited to damages.

NORTH AMERICA

CANADA: Warranty Service: The following is added to this Section:
To obtain warranty service from IBM, call **1-800-565-3344**. In Toronto, call **416-383-3344**.

UNITED STATES OF AMERICA: Warranty Service: The following is added to this Section:
To obtain warranty service from IBM, call **1-800-772-2227**.

Notices

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Subject to IBM's valid intellectual property or other legally protectable rights, any functionally equivalent product, program, or service may be used instead of the IBM product, program, or service. The evaluation and verification of operation in conjunction with other products, except those expressly designated by IBM, are the responsibility of the user.

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Other company, product, and service names may be trademarks or service marks of others.

Electronic emission notices

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Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible Party:

International Business Machines Corporation
New Orchard Road
Armonk, NY 10504
Telephone: 1-919-543-2193

Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

Industry Canada Class B emission compliance statement

This Class B digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de classe B est conforme à la norme NMB-003 du Canada.

Deutsche EMV-Direktive (electromagnetische Verträglichkeit)

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG vom 9.Nov.92 das EG-Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM UK, Greenock.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.

European Union - emission directive

This product is in conformity with the protection requirements of EU Council Directive 89/366/ECC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

IBM can not accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22 / European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Union Européenne - Directive Conformité électromagnétique

Ce produit est conforme aux exigences de protection de la Directive 89/336/EEC du Conseil de l'UE sur le rapprochement des lois des États membres en matière de compatibilité électromagnétique.

IBM ne peut accepter aucune responsabilité pour le manquement aux exigences de protection résultant d'une modification non recommandée du produit, y compris l'installation de cartes autres que les cartes IBM.

Ce produit a été testé et il satisfait les conditions de l'équipement informatique de Classe B en vertu de CISPR22 / Standard européen EN 55022. Les conditions pour l'équipement de Classe B ont été définies en fonction d'un contexte résidentiel ordinaire afin de fournir une protection raisonnable contre l'interférence d'appareils de communication autorisés.

Unione Europea - Directiva EMC (Conformidad électromagnética)

Este producto satisface los requisitos de protección del Consejo de la UE, Directiva 89/336/CEE en lo que a la legislatura de los Estados Miembros sobre compatibilidad electromagnética se refiere.

IBM no puede aceptar responsabilidad alguna si este producto deja de satisfacer dichos requisitos de protección como resultado de una modificación no recomendada del producto, incluyendo el ajuste de tarjetas de opción que no sean IBM.

Este producto ha sido probado y satisface los límites para Equipos Informáticos Clase B de conformidad con el Estándar CISPR22 y el Estándar Europeo EN 55022. Los límites para los equipos de Clase B se han establecido para entornos residenciales típicos a fin de proporcionar una protección razonable contra las interferencias con dispositivos de comunicación licenciados.

Union Europea - Normativa EMC

Questo prodotto è conforme alle normative di protezione ai sensi della Direttiva del Consiglio dell'Unione Europea 89/336/CEE sull'armonizzazione legislativa degli stati membri in materia di compatibilità elettromagnetica.

IBM non accetta responsabilità alcuna per la mancata conformità alle normative di protezione dovuta a modifiche non consigliate al prodotto, compresa l'installazione di schede e componenti di marca diversa da IBM.

Le prove effettuate sul presente prodotto hanno accertato che esso rientra nei limiti stabiliti per le le apparecchiature di informatica Classe B ai sensi del CISPR 22 / Norma Europea EN 55022. I limiti delle apparecchiature della Classe B sono stati stabiliti al fine di fornire ragionevole protezione da interferenze mediante dispositivi di comunicazione in concessione in ambienti residenziali tipici.

Korean B급 규격 증명서

이 장치는 옥내용으로 보증되었으며 모든 환경에서 사용할 수 있습니다.

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Part Number: P28L2254

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