



**ThinkPad 770**  
**Enhanced DVD Drive**  
*User's Guide*

**OPTIONS**  
*by* **IBM**

**First Edition (August 1998)**

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## Part 1. Using the ThinkPad 770 Enhanced DVD Drive

The *ThinkPad 770 Enhanced DVD Drive* supports the ThinkPad 770 series computer, including the 770, 770E, 770ED, or 770X in the Windows 95 or Windows 98 environment. You can view a CD-ROM or a DVD by using this DVD drive. In the Windows NT environment, you can use the DVD drive only for reading CD-ROMs or DVDs—that is, you cannot view DVD movies.

This book explains how to install the ThinkPad 770 Enhanced DVD drive and software programs.

To install the ThinkPad 770 Enhanced DVD drive into your computer, insert it into the UltraBay II.

If you are using the ThinkPad 770, 770E, or 770ED computer, you should update the BIOS, with the version available on March 13, 1998 (BIOS P/N:97H4596), or a later version. For more information →  
<http://www.pc.ibm.com/support>

**Note:** Audio or video streams are decoded in software. MPEG or DVD playback performance is contingent upon the speed and power of the system. The audio or video subsystem needs to be fully functional. For optimal performance, we recommend you also install the DVD and Enhanced Video Adapter option.

Before you begin the installation, make sure that the following items are included.

DVD drive

This user's guide

DVD Software CD-ROM  
(includes software programs for  
DVD movies)

Video Features Diskette IV for  
Windows 95/98 (includes the  
display driver)

## Installing the ThinkPad 770 Enhanced DVD Drive

This section describes how to install the ThinkPad 770 Enhanced DVD Drive.

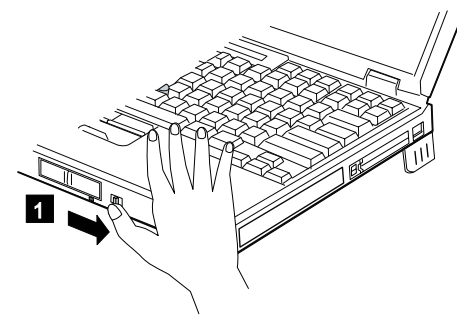
If a device is already installed in the UltraBay II, go to “Removing a Device from the UltraBay II.”

If no device is installed, go on “Installing the DVD Drive in the UltraBay II” on page 1-3.

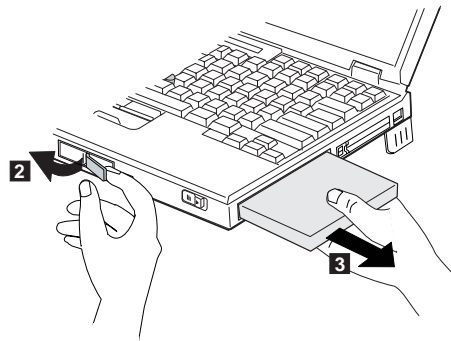
## Removing a Device from the UltraBay II

To remove a device from the UltraBay II, do as follows:

- 1** Make sure there is no storage media installed in the device.
- 2** Power off the computer, and remove the AC Adapter and cables.
- 3** Slide the right **release latch** to the right **1**.



- 4 Gently lift up the **bay eject lever** 2 and remove the device from the bay 3 .



**Notes:**

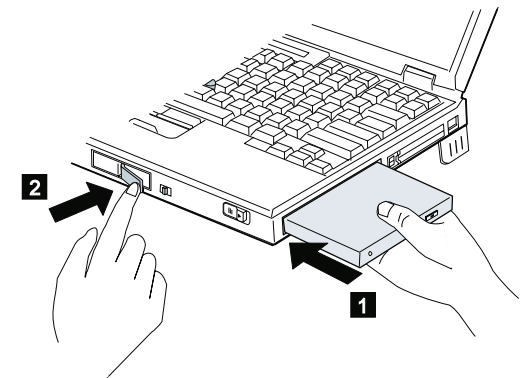
1. You can use only one bay eject lever at a time. When opening a bay eject lever, make sure that the other bay eject lever is closed.
2. You can hot- or warm-swap the ThinkPad 770 Enhanced DVD Drive if you are in the appropriate mode. Refer to the manuals shipped with your computer.
3. Make sure the bay LED stays green and there is no beep; then swap the device. If the bay LED is blinking orange, you cannot swap the device.

You have finished removing a device.

## Installing the DVD Drive in the UltraBay II

To install the ThinkPad 770 Enhanced DVD Drive in the UltraBay II, do the following:

- 1 Insert the DVD drive into the UltraBay II 1 . Make sure you connect the drive firmly.
- 2 Close the right bay release latch 2 if it remains open.



You have finished installing the DVD drive.

**Note:** To prevent others from gaining access to the device in the UltraBay II, you can insert a security screw (shipped with your computer) from the bottom of your computer.

## Installing Programs

If you want to view DVD movies and MPEG motion videos, install the following programs (depending on your ThinkPad model).

ThinkPad 770X	ThinkPad 770, 770E, or 770ED
<ol style="list-style-type: none"><li>1. DVD Movie Player (DVD Express)</li><li>2. MPEG driver (optional)</li></ol>	<ol style="list-style-type: none"><li>1. Display driver</li><li>2. DirectX 5.0 (for Windows 95 users)</li><li>3. DVD Movie Player (DVD Express)</li><li>4. MPEG driver</li></ol>

After installing the programs, you need to select the region code.

### Attention

The DVD movie player program is supported by Windows 98 and by Windows 95 (OSR2.0 or later version).

If you are using the DVD and Enhanced Video Adapter in your computer, **you need to install the MPEG feature** in some models.

**For the ThinkPad 770, 770E, and 770ED computer:**

You need to install the DVD and Enhanced Video Adapter to use the DVD Movie Player program.

**For the ThinkPad 770X computer:**

The DVD and Enhanced Video Adapter is optional for using the DVD Movie Player program. You can get advanced performance and clear output with this adapter, however, because processor overhead is reduced.

If you are not going to view DVD movies or MPEG motion videos—that is, if you are going to use the DVD drive only for reading CD-ROMs or DVDs—you do not need to install these programs. To install the software program, do the following:

**I Install the display driver.**

If you are using the ThinkPad 770, 770E, or 770ED computer, you need to install the display driver.

If you are using the ThinkPad 770X computer, skip this step and go to step 2 on page 1-7.



### Installation Instructions for Windows 98

- a.* Start Windows 98.
- b.* Click on **Start**.
- c.* Move the cursor to **Settings**; then click on **Control Panel**.
- d.* Double-click on the **Display** icon; then click on the **Settings** tab.
- e.* Click on **Advanced...**
- f.* Click on the **Adapter** tab; then click on **Change...**

The “Update Device Driver Wizard” runs.

- g.* Click on **Next**.
- h.* Select **Search for a better driver than the one your device is using now. (Recommended)** by clicking on it. Then click on **Next**.
- i.* Put a check mark in the **Floppy disk drives** check box by clicking on it.
- j.* Insert the Video Features Diskette IV for Windows 95/98 into the diskette drive, and click on **Next**.
- k.* When a message appears that Windows has found the display driver, click on **Next**.

If you prompt the source directory, type A:\

- l.* Click on **Finish**.

- m.* Remove the diskette from the diskette drive, and click on **Yes** to restart the computer.
- n.* When the computer start, select screen parameters from the color palette, desktop area, and font size; then click on **Close**.
- o.* Click on **Start**.
- p.* Move the cursor to **Settings**; then click on **Control Panel**.
- q.* Double-click on the **Display** icon.
- r.* Click on the **Setting** tab.
- s.* Set the Colors and Screen area in the “Display Properties.”
- t.* Click on **OK** to close the window.

### Installation Instructions for Windows 95

- a.* Start Windows 95.
- b.* Click on **Start**.
- c.* Move the cursor to **Settings**; then click on **Control Panel**.
- d.* Double-click on **Display**; then click on the **Settings** tab.
- e.* Click on **Advanced Properties**.
- f.* Click on the **Adapter** tab; then click on **Change...**
- g.* Click on **Have Disk...**
- h.* Insert the Video Features Diskette IV for Windows 95/98 into the diskette drive, and click on **OK**.

ThinkPad display driver information appears on the screen.

- i.* Click on the title of the display driver; then click on **OK**.
- j.* Click on **Close**.
- k.* Remove the diskette from the diskette drive.
- l.* Select your screen parameters from the color palette, desktop area, and font size; then click on **Close**.
- m.* Specify the type of monitor as follows. (If you do not specify the type of monitor you want to use, your new settings might not function correctly.)
  - 1)* Open the “Display Properties” window.
  - 2)* Click on the **Settings** tab.
  - 3)* Click on **Advanced Properties**.
  - 4)* In the “Advanced Display Properties” window, click on the **Monitor** tab.
  - 5)* Click on **Change...**
  - 6)* Click on **Show all devices**.

- 7)* Specify **Manufacturers** and **Models** in the next window.

For example,

If you are using the XGA (14.1-inch) LCD:

**Manufacturers:** (Standard monitor types)  
**Models:** Laptop Display Panel  
(1024x768)

If you are using the external monitor:

**Manufacturers:** (Standard monitor types)  
**Models:** Plug and Play Monitor

- 8)* Click on **OK**.
- 9)* Close all windows.

- n.* Follow the instructions on the screen.

Windows 95 prompts you to restart Windows 95 to make the display driver change effective.

## 2 Enable the DMA setting.

- a.* Click on **Start**, move the cursor to **Settings**, and click on **Control Panel**.
- b.* Double-click on **System**.
- c.* Click on the **Device Manager** tab.
- d.* Double-click on the **CDROM** icon.  
The DVD driver name appears under the **CDROM** icon.
- e.* Double-click on the DVD driver name.
- f.* Click on the **Settings** tab.
- g.* Put check marks in the **DMA** and **Auto insert notification** check boxes by clicking on them. If the alert dialog appears, click on **OK** to close it.
- h.* Click on **OK**.
- i.* Click on **Close** to close the “System Properties” window.  
The system settings change dialog appears.
- j.* Click on **OK** to restart the system.

## 3 Install the DVD Movie Player Program.

The following display modes do not support the enhanced video features (MPEG, DVD playback, or video image capture and overlay using the Video-In Recorder):

### For the ThinkPad 770X computer:

1024x768 resolution and 16M colors  
1600x1200 resolution  
16M colors on the LCD

**Note:** Other refresh rate settings might not be supported. For information on the ThinkPad 770, 770E, or 770ED computer

➔ <http://www.pc.ibm.com/thinkpad>.

### Installation Instructions for Windows 98

To install the DVD Movie Player program for Windows 98, do as follows:

- a.* Insert the DVD Software CD-ROM into the DVD drive.
- b.* Click on **Start** and **Run...**
- c.* Type `x:\DVDPLAYR\SETUP` and press **Enter**.

**Note:** `x` is the drive letter of the DVD drive.

Follow the instructions on the screen.

### Installation Instructions for Windows 95

To install the DirectX5 program, do as follows:

- a. Insert the DVD Software CD-ROM into the DVD drive.
- b. Click on **Start** and **Run...**
- c. Type `x:\DX5 \SETUPDX5` and press **Enter**.

**Note:** x is the drive letter of the DVD drive.

- d. Shut down and restart the system.

To install the DVD Movie Player program, continue the following steps:

- e. Click on **Start** and **Run...**
- f. Type `x:\DVDPLAYER\SETUP` and press **Enter**.

**Note:** x is the drive letter of the DVD drive.

- g. Follow the instructions on the screen.

If you are using the DVD and Enhanced Video Adapter in your computer, you need to install the MPEG feature. Even if your computer has the MPEG feature already installed, you need to reinstall it after you install the DVD and Enhanced Video Adapter. Refer to the manual shipped with the DVD and Enhanced Video Adapter Option or ThinkPad Web site.

➔ <http://www.pc.ibm.com/thinkpad>

### 4 Select the region code.

#### DVD Region Codes

Regional coding is part of the protection scheme for DVD content. The world is divided into six regions, so that specific content can be viewed only in the region where it is appropriate. For example, Region 1 (U.S. and Canada) content can be viewed only in Region 1. The DVD Movie Player Program application is also region-specific.

You must select a region to play DVD content. After you have selected a region, you can play content only from that region. *You cannot change the region code without reformatting the drive and reinstalling Windows 98.*

Make sure the first DVD content you play is from the appropriate region. You can verify the region code of the content by looking at the region code symbol on the back of the content packaging.

*Attention: If the first DVD you play is from a region other than the region you selected, your system will no longer play DVD content. Contact the IBM PC HelpCenter. See Appendix A, "Help and Service Information" on page 2-1.*

- a. Click on **Start**, move the cursor to **Programs** and **Mediamatics DVD Express**, and then click on **Mediamatics DVD Player**.

The "Select DVD Region" window appears.

b. Select the region code and click on **OK**.

Region Code	Country
1	U.S. and Canada
2	Europe, Middle East, South Africa, Japan
3	Southeast Asia, Taiwan, Korea
4	Latin America, Australia, New Zealand
5	Former Soviet Union, the rest of Africa, India
6	People's Republic of China

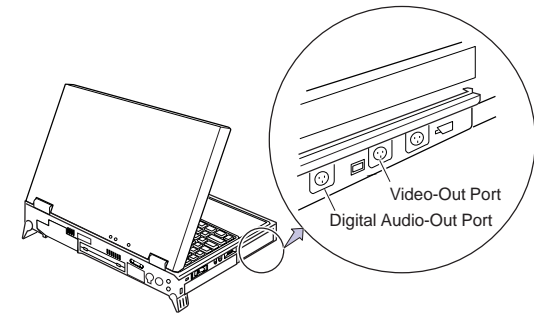
## Viewing a DVD Movie

After you install the DVD drive and the programs, you can view a DVD movie by doing the following:

**1** Insert a DVD into the DVD drive.

If you want to use the digital audio-out port, go to “Using the Digital Audio-Out Port.”

If you want to view a DVD movie on your TV, go to “Using the Video-Out Port.”



**2** Click on **Start**, and move the cursor to **Programs** and then **Mediamatics DVD Express**.

**3** Click on **Mediamatics DVD Player**.

The “Mediamatics DVD Player” window appears. For more information on how to play the DVD Movie Player program, see the *Online User's Guide*.

**Notes:**

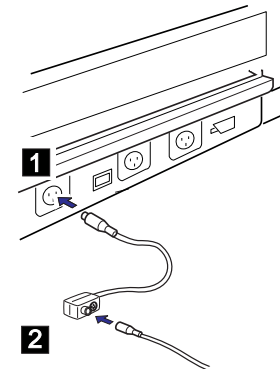
1. Your computer has been configured to provide the highest quality audio and video playback based on the available system resources. You may alter the default settings by changing the video resolution setting within the **Control Panel** of Windows 95 or Windows 98. Some systems do not have enough resources to provide full quality audio and video playback at all resolution settings. If you experience poor playback performance, adjust the resolution to a lower setting.
2. If you are viewing a DVD movie and your computer enters suspend mode, the movie will restart from the beginning of the title when you resume.
3. The **Digital Audio Output** setting is effective only for Dolby\*\* Digital\*\* Audio with DVD. If the audio is LPCM (not Dolby Digital), for instance, the setting is ignored.
4. If you pause a DVD movie on the TV, the MPEG video screen might shake slightly.

### Using the Digital Audio-Out Port

To view a DVD movie and to hear Dolby Digital sound on a Dolby Digital processor, do the following:

**Note:** You need to install the DVD and Enhanced Video Adapter option to use this port.

- 1** Make sure that the Dolby Digital processor is on and the surround speakers are connected to it.
- 2** Connect the video in/out cable to the digital audio-out port 1 .
- 3** Connect the other end 2 of the video in/out cable to a video cable from a Dolby Digital processor.



From a Dolby Digital Processor

- 4 Enable sound on the Dolby Digital processor by doing the following:
  - a. Click on **Start**, and move the cursor to **Programs** and then **Mediamatics DVD Express**.
  - b. Click on **Mediamatics DVD Player**. The “Mediamatics DVD Player” window appears.
  - c. Click on the **DVD Options** button. The “DVD Options” window appears.
  - d. Click on the **Audio** tab.
  - e. Put a check mark in the **Digital Audio Out** check box.
  - f. Click on **OK** to close the window.

You can now hear the sound from the speakers connected to the Dolby Digital processor.

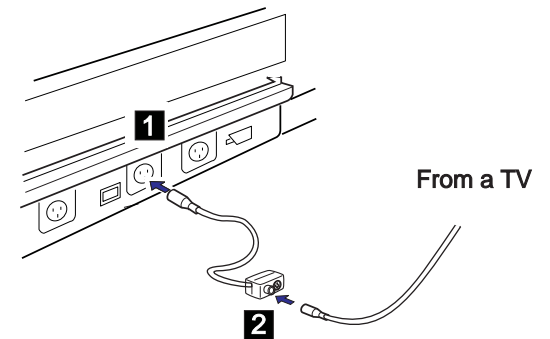
**Note:** You will not hear any sound if the sound source is not a Dolby Digital sound source—for example, if the sound source is LPCM.

## Using the Video-Out Port

To view a DVD movie on your TV, do the following:

**Note:** You need to install the DVD and Enhanced Video Adapter option to use this port.

- 1 Connect the video in/out cable to the video-out port 1.
- 2 Connect the other end of the video in/out cable 2 to a video cable from the TV.



You can now view a DVD movie on your TV.

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## Part 2. Appendixes

### ***Appendix A. Help and Service Information***

If you have questions about your new Options by IBM product, or require technical assistance, visit the IBM Personal Computing Support Web site at <http://www.pc.ibm.com/support>. For information about IBM, IBM PC products, or Options by IBM visit the IBM Personal Computing Web site at <http://www.pc.ibm.com>. Additionally, you can receive information from the IBM Automated Fax system at 1-800-426-3395 (in Canada, 1-800-465-3299), or from the Personal Systems Group Bulletin Board System (PSG BBS) at 1-919-517-0001. You can also get help and information through the IBM PC HelpCenter, 24 hours a day, seven days a week. Response time might vary depending on the number and nature of the calls received.

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.

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.

#### **Step 1. Problem Solving**

You may be able to solve the problem yourself. Before calling the HelpCenter, please prepare for the call by following these steps:

1. If you are having installation or configuration problems, refer to the detailed sections on installation found in this manual, and review any README.TXT files found on the installation diskettes.
2. Visit the Personal Computing Support Web site specific to the model of option you have purchased. Updated installation instructions, hints and tips, or updated system-specific notes are often published in this section. You might find that later device drivers are available that will improve the performance and compatibility for your new option.

If you are installing this option in an IBM computer, also visit the applicable support Web page for that computer model. These pages might also contain useful hints and tips related to installation of this option and might refer to BIOS or device-driver updates required for your computer model. If you are installing the option in a non-IBM computer, refer to the manufacturer's Web site.



3. Uninstall and then reinstall the option. During the uninstallation process, be sure to remove any files that were installed during the previous installation. Many IBM options include uninstallation programs.
4. Check all cabling to be sure that it is correct as shown in this manual. When you connect a cable to a cable connector, pay close attention to the colored stripes along the edge of the cable, and ensure that they are matched with PIN 1 on both the computer connector and the option connector.
5. If your option contains jumpers or switches, be sure their positions and orientation match the instructions in this manual.

## Step 2. Preparing for the Call

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.

## Step 3. Placing the Call to IBM

If you call 90 days or more after the date of withdrawal or after your warranty has expired, you might be charged a fee.

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.

<i>Support 24 hours a day, 7 days a week</i>	
Canada	1-800-565-3344
U.S.A. or Puerto Rico	1-800-772-2227

## Additional Technical Support Resources

Online technical support is available during the life of your product. Online assistance can be obtained through the Personal Computing Support Web site, the PSG Electronic Bulletin Board System (BBS), and the IBM Automated Fax System.

<i>Online Technical Support</i>	
IBM Personal Computing Support Web site	<a href="http://www.pc.ibm.com/support">http://www.pc.ibm.com/support</a>
IBM PSG BBS	1-919-517-0001
IBM Automated Fax System	1-800-426-3395 1-800-465-3299 (in Canada)

## Appendix B. Product Warranty

The following warranty information applies to products purchased in the United States, Canada, and Puerto Rico. For warranty terms and conditions for products purchased in other countries, see the enclosed warranty insert, or contact your IBM reseller or IBM marketing representative.

International Business Machines Corporation

Armonk, New York 10504

### Statement of Limited Warranty

*The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you originally 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. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. If you have any questions, contact IBM or your reseller.*

**Machine:** ThinkPad 770 Enhanced DVD Drive

**Warranty Period\*:** One year

*\*Contact your place of purchase for warranty service information.*

### Production Status

Each 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 warranty terms apply.

### 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 receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if authorized by IBM, will provide warranty service under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

For IBM or your reseller to provide warranty service for a feature, conversion, or upgrade, IBM or your reseller may require that the Machine on which it is installed be 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many of these transactions involve the removal of parts and their return to IBM. You represent that all removed parts are genuine and unaltered. A part that replaces a removed part will assume the warranty service status of the replaced part.

If a Machine does not function as warranted during the warranty period, IBM or your reseller will repair it or replace it with one that is at least functionally equivalent, without charge. The replacement may not be new, but will be in good working order. If IBM or your reseller is unable to repair or replace the Machine, you may return it to your place of purchase and your money will be refunded.

If you transfer a Machine to another user, warranty service is available to that user for the remainder of the warranty period. You should give your proof of purchase and this Statement to that user. However, for Machines which have a lifetime warranty, this warranty is not transferable.

### **Warranty Service**

To obtain warranty service for the Machine, you should contact your reseller or call IBM. In the United States, call IBM at **1-800-772-2227**. In Canada, call IBM at **1-800-565-3344**. You may be required to present proof of purchase.

IBM or your reseller will provide certain types of repair and exchange service, either at your location or at IBM's or your reseller's service center, to restore a Machine to good working order.

When a type of 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. 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 ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange.

You agree to:

1. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
2. where applicable, before service is provided —
  - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provide,
  - b. secure all programs, data, and funds contained in a Machine, and
  - c. 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.

### **Extent of Warranty**

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

The warranties may be voided by misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, removal or alteration of Machine or parts identification labels, or failure caused by a product for which IBM is not responsible.

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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 or loss, up to the greater of U.S. \$100,000 or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING:

1. THIRD-PARTY CLAIMS AGAINST YOU FOR LOSSES OR 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 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 EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU.

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