



# ThinkPad 4X/4X/20X CD-ReWritable Ultrabay 2000 Drive

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*User's Guide*

**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 2-2.

### **First Edition (May 2000)**

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## Safety: Read first



Before installing this product, read the Safety Information.

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).

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 pečítajte 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」。

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## Product registration

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.

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## About this book

This manual contains information on the IBM ThinkPad 4X/4X/20X CD-RW Ultrabay 2000 Drive. It is divided into the following parts:

**Part 1:** Installation and user's guide

This section contains product and software descriptions, installation requirements, installation instructions, handling and operating information, and problem solving in the following languages:

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

**Part 2:** Appendixes

This section contains the product specifications, help and service information, the product warranties and notices.

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

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## Part 1: Installation and user's guide

This guide contains information on installing and using the drive. For problem-solving information, go to "Problem solving" on page 1-10.

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### Product description

The IBM ThinkPad 4X/4X/20X CD-RW Ultrabay 2000 Drive can write to and read from CD-ReWritable (CD-RW) and CD-Recordable (CD-R) discs, and can read mass-produced, stamped CDs. The drive is compatible with Multi-Read (MR) CD-ROM and DVD-ROM drives that can read CD-RW discs and other media types, and with older non-MR CD-ROM drives that can read only CD-R and CD-ROM discs.

The drive writes to CD-RW and CD-R discs at different speeds. The drive can write to a CD-RW or CD-R disc at up to four times the standard CD-ROM speed, recording data at up to 1200 KB<sup>1</sup> per second. At this rate, the drive can record approximately 650 MB<sup>2</sup> of information on a CD-RW or CD-R disc in about 18 minutes. The drive can also read data at up to 20 times the standard CD-ROM speed, or 6000 KB per second.

**Note:** To use the drive's CD-recording function, you must install the Easy CD Creator/DirectCD software (included) for Microsoft Windows 2000 Professional, Windows 98, Windows 95, or Microsoft Windows NT 4.0 Workstation. For more information on the Easy CD Creator/DirectCD software, see "Software description" on page 1-2.

In addition to this book, the option kit includes:

- CD-ReWritable drive
- Carrying case
- Blank CD-RW disc
- Blank CD-R disc
- Easy CD Creator/DirectCD* software CD
- Laser Safety Guide for CD-ROMs*

**Note:** Your option kit might also contain an update diskette for Adaptec software.

Contact your place of purchase if an item is missing or damaged. Be sure to retain your proof of purchase. It might be required to receive warranty service. See Appendix B, "Help and service information" on page 2-1 for technical support information.

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<sup>1</sup> KB equals approximately 1024 bytes when referring to data transfer speeds.

<sup>2</sup> MB equals approximately 1 000 000 bytes when referring to storage capacity.

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## Software description

The Easy CD Creator/DirectCD software CD contains programs that work with Windows 2000, Windows 98, Windows 95, and Windows NT 4.0. You can use the programs with your CD-ReWritable drive to create audio and data CDs, to copy CDs, and to make jewel-case inserts or CD labels. This manual provides basic instructions on using the software to create CDs. For more information on using the software, go to the online user's guide on the software CD.

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## Installation requirements

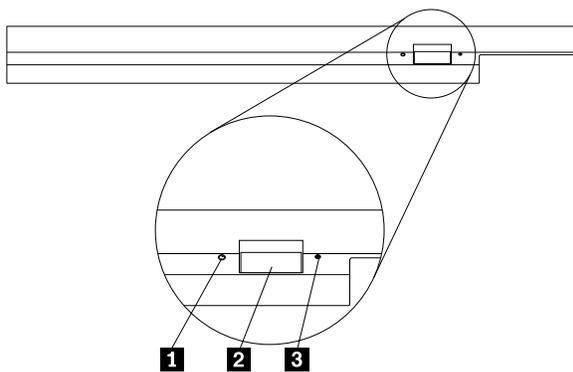
To install the CD-ReWritable drive, your computer must meet the following minimum requirements:

- ThinkPad A or T series computer with Ultrabay 2000 drive bay
- 32 MB of Memory
- 3.5-inch diskette drive
- Windows 2000, Windows 98, Windows 95, or Windows NT 4.0 operating system

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## Locating the drive controls

The following diagram shows the location of the controls on the front of the drive.



**1 Power light**

This light is visible when drive is in use.

**2 Eject button**

Press this button to eject the CD when the drive is in use.

**3 Manual eject hole**

Use this emergency release to eject the CD when the Eject button does not work. For more information on manually ejecting a CD, go to "Manually ejecting a CD" on page 1-5.

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## Installing the drive

The ThinkPad 4X/4X/20X CD-RW Ultrabay 2000 Drive works with any ThinkPad computer that has an Ultrabay 2000 drive bay.

Your ThinkPad computer includes an online user's guide that provides drive installation instructions specific to your computer. To correctly install the CD-RW Drive into the Ultrabay 2000 drive bay in your ThinkPad computer, be sure to use the instructions given in the online user's guide.

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## Using the drive

This section provides information on how to handle and care for CDs and your CD-RW drive, how to load CDs into your CD-RW drive, and how to get started using the Easy CD Creator and DirectCD software applications.

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### Before you begin

Review the following guidelines before using the drive:

Movement of your ThinkPad while formatting or writing a disc may cause data errors. Also, minimize typing while formatting or writing to a disc, as this may also cause data errors.

For best results:

- Keep the ThinkPad on a flat surface when writing to a disc.
- Use the CD-RW drive when the ThinkPad is plugged into an ac outlet. If the battery runs out while writing to a disc, the disc may be damaged.
- Turn screensavers off. Using a screensaver may interrupt the formatting and writing process.

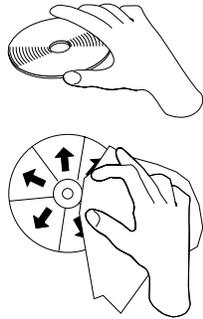
The read and write results of the CD-RW drive depend upon the quality and characteristics of the CD-R and CD-RW media used. Poor results may be obtained with some CD-R and CD-RW suppliers.

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### Handling and caring for a CD

Carefully handle and clean CDs, especially writable media types such as CD-R and CD-RW discs, so that they remain readable. You can prolong the life of your CDs by using the following precautions.

<b>Attention:</b> Wiping a CD using a circular motion can cause loss of data.
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Handle the CD by the edges or the center hole. Do not touch the surface of the CD.

To remove dust or fingerprints, wipe the CD from the center to the edge with a soft, lint-free cloth.

Do not write on the surface.

Do not place the CD in direct sunlight.

Do not use commercial cleaners to clean the CD.

Do not bend the CD.

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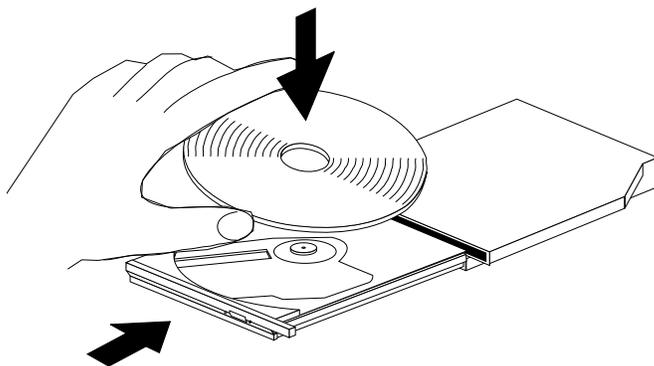
## Caring for the CD-RW drive

To protect your CD-ReWritable drive during operation, observe the following precautions:

- Remove any CD from the drive before moving the drive.
- Do not insert foreign objects into the drive.
- Do not stack objects on the drive.
- Do not remove the drive cover or attempt to service the drive.
- Do not operate the drive under any of the following conditions:
  - High temperature, high humidity, or direct sunlight
  - Excessive vibration, sudden shock, or inclined surface
  - Excessive dust

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## Loading a CD



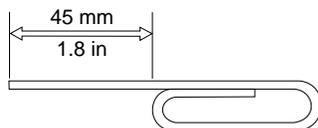
1. Press the Eject button. The tray slides out of the drive.
2. Place the CD in the tray with the label facing up.
3. Close the tray by gently pushing the tray in until it latches.

**Attention:** Do not use force or insert foreign objects to open the CD tray. If your tray does not open when you press the Eject button, see “Manually ejecting a CD” for more information.

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## Manually ejecting a CD

If you press the Eject button and the tray does not slide out, turn off the computer and straighten a large paper clip to form a tool, as shown in the illustration. The straightened end must extend at least 45 mm (1.8 in.). Insert the extended end into the manual-eject hole on the front of the drive. Push the paper clip until the tray opens. Gently pull out the tray until you can remove the CD.



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## Installing the Easy CD Creator/DirectCD software

**Note:** Be sure to see the README file on the software CD for the latest information about the Easy CD Creator/DirectCD software.

The Easy CD Creator/DirectCD software CD contains the following programs:

Easy CD Creator  
DirectCD

To take full advantage of the capabilities of your CD-ReWritable drive, you must install both the Easy CD Creator and DirectCD programs. If you also have an MR CD-ROM or DVD-ROM drive in your computer, you might need to install the UDF Reader program to read certain CD-R or CD-RW discs in these drives.

To install the Easy CD Creator/DirectCD software for Windows 2000, Windows 98, Windows 95 or Windows NT 4.0:

1. Insert the Easy CD Creator/DirectCD software CD into your CD-ReWritable drive.
2. If the Adaptec Easy CD Creator Installation window opens, follow the on-screen instructions and then go to step 6. If the window does not open, continue to the next step.
3. Click **Start Settings Control Panel**.
4. Double-click **Add/Remove Programs**.
5. Follow the on-screen instructions to complete the installation. Repeat as necessary to install each of the Easy CD Creator, DirectCD, and UDF Reader components.
6. If your option package includes an update diskette for the Adaptec software, insert it into the diskette drive when prompted.
7. Restart your operating system.

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## Using CD-R and CD-RW discs

The CD-ReWritable drive can write to both CD-R and CD-RW discs. CD-R discs cannot be erased, but can be used with standard CD-ROM drives and CD players. You can use CD-R discs to record audio tracks, store data, archive files, and copy files from another CD.

CD-RW discs can be erased and rewritten, but can be used only with newer MR- and CD-RW-compatible CD-ROM and DVD-ROM drives. You can use CD-RW discs to back up, store, and update files or to copy files from another CD.

**Note:** CD-R discs are playable on audio CD players. CD-RW discs are *not* playable on most audio CD players.

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## Using the Easy CD Creator/DirectCD programs

To use the Easy CD Creator/DirectCD software, insert a blank or partially-recorded CD-R or CD-RW disc (this option kit includes a blank CD-R disc and a blank CD-RW disc) into your CD-RW drive.

To open DirectCD:

1. Click **Start Programs Adaptec DirectCD**.
2. Click **DirectCD Wizard**.

### Formatting CDs

You must format a blank CD-RW disc before you can copy files to it.

To format a CD<sup>3</sup> with the DirectCD program:

1. Insert a blank disc (included) in the drive. The DirectCD Wizard Welcome window opens.

If the DirectCD Wizard Welcome window does not open, click **Start Programs Adaptec DirectCD** then click **DirectCD Wizard**.

2. Click **Next** twice. The Format Disc window opens.

**Attention:** Formatting completes in about 30 minutes. The DirectCD program configures the disc to receive data, verifies the integrity of the disc surface, and writes DirectCD file-system structures to the disc.

3. Click **Next** to continue. The Name Your Disc window opens.
4. In the Name Your Disc window, type the title of your disc. The disc name can be up to 11 characters.
5. If you plan to use data compression with this disc, place a check in the **Enable compression on this disc** check box.
6. Click **Finish** to start disc formatting. When the disc is finished formatting, the Disc Ready window opens.
7. In the Disc Ready window, click **OK**.

You can now write information to the disc.

**Note:** If you have a problem formatting a CD-RW disc, go to “Problem solving” on page 1-10.

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<sup>3</sup> Some CDs, such as multisession CDs, do not require formatting. For more information, see the online user’s guide.

If you want to read a DirectCD-formatted disc in another computer that has an MR drive, you might have to install a UDF Reader program on the other computer.

## Creating data CDs

**Note:** When using a DirectCD-formatted CD-RW discs, please use DirectCD to create the data CDs.

To create data CDs:

1. Click **Start Programs Adaptec Easy CD. Creator Create CD.**
2. In the Easy CD Creator window, click **Data.**
3. Click **Data CD.**  
**Note:** If you click **DirectCD** instead of **Data CD**, the Easy CD Creator program closes and the DirectCD Wizard opens instead.
4. The window that opens is similar to the Windows Explorer window. In the top section, click to select the files or directories that you want to add to the CD.
5. At the top of the window, click **Add** to add the files to your CD.

For information on advanced features such as making a multisession CD, or creating a CD using the **File** menu instead of the Easy CD Creator Wizard, see the Adaptec software online user's guide.

## Creating audio CDs

To create audio CDs:

1. Click **Start Programs Adaptec Easy CD. Creator Create CD.**
2. In the Easy CD Creator window, click **Audio.**
3. Click **Audio CD.**
4. The window that opens is similar to the Windows Explorer window. In the top section, click to select the files or directories that you want to add to the CD.
5. At the top of the window, click **Add** to add the files to your CD.

For information on advanced features such as making a multisession CD, or creating a CD using the **File** menu instead of the Easy CD Creator Wizard, see the Adaptec software online user's guide.

## Making a jewel-case insert

You can use Easy CD Creator to create a jewel-case insert or CD cover. When you create a data or audio CD, the Easy CD Creator program creates a jewel-case insert using the information in your CD layout, such as CD title, artist name, and song list.

To print a jewel-case insert or disc label:

1. Click **Start Adaptec Easy CD Creator Create CD**.
2. Click **Jewel Case Creator**.
3. In the left panel, click to select the front cover, inside front cover, back cover, or CD label.
4. You can change your selections in the main editing window. To change the background theme, click **Format** and then select **Change Themes**.
5. When you are finished making changes, click **File** and then select **Print**.
6. Click **OK**.

For more information on changing the information in the Jewel Case Layout window, see the Adaptec software online user's guide.

## Backing up a CD

**Attention:** The CD Copier program copies files from one CD to another CD. To copy a commercial CD, you must own the copyright or obtain permission from the copyright owner. If you do not own the copyright or do not obtain permission from the copyright owner, you might be violating copyright law and might be subject to payment of damages or other remedies. For more information on copyright law, consult your legal advisor.

To back up or copy a CD using your CD-ReWritable drive:

1. Click **Start Programs Adaptec Easy CD Creator Features**.
2. Click **CD Copier**.  
The CD Copier window opens.
3. Click the **Source and Destination** tab if it is not the displayed window.
4. In the Copy From section, select the source drive from the pull-down menu.  
**Note:** This is the drive containing the CD that you want to copy.
5. In the Record To section, select the CD-RW drive from the pull-down menu. Be sure that there is a blank CD-R or CD-RW disc in the CD-ReWritable drive.
6. In the Advanced window, you can select the following options.  
**Note:** If you select any of these options, the drive will copy the CD at a slower rate.

Test the CD for the best possible recording speed.

Change the number of copies made.

Copy the CD to your hard disk before copying it to the blank CD.

7. When you are finished choosing the settings, place the CD you are going to copy into the source drive.
8. Click **Copy** to start copying your CD.

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## 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 to gather helpful information you can pass on to a service technician. You might also need to refer to your computer, operating-system, or sound-adaptor publications.

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

### **You cannot create a multisession disc.**

Be sure that there is enough space left on the disc for another session. Writing a session requires lead-in and lead-out space (about 15 MB) in addition to the data that is recorded.

### **You cannot successfully write to a CD-R or CD-RW disc.**

Take the following actions:

1. Verify that the process is not being interrupted by a screen saver, an antivirus program, an Internet or e-mail program, or other software. Disable the functions that might interrupt the write operation.
2. Verify that the hard disk has been defragmented.
3. Consult the hard disk drive manufacturer or vendor if an older hard disk drive is conducting a thermal recalibration during a write operation.
4. Replace the CD if it is bad or scratched.
5. Try disabling the Windows Auto Insert Notify function on your CD-ROM and CD-RW drives.

### **You cannot eject a CD.**

Take the following actions after ensuring that the drive is not in the process of writing to a disc:

1. Eject the CD through software.
2. Use the Eject button.
3. Turn off the computer. Wait 45 seconds; then turn on the computer and try using the Eject button again.
4. If other methods do not work, use the manual-eject hole, using instructions given in "Manually ejecting a CD" on page 1-5.

**You cannot read from the CD after successfully writing to it.**

Take the following actions:

1. If you can read the CD in another CD player or you can see previous sessions, the directory information might be damaged on the volume, making it unreadable. Check the documentation that comes with the Adaptec Easy CD Creator/Direct CD software for troubleshooting ideas.
2. You might have a damaged CD-R or CD-RW disc. Try a new CD-R disc or CD-RW disc, or another brand of CD.
3. If you can read from a CD-RW disc in the writing drive, but not in another MR drive, be sure that a UDF Reader program is installed in the computer. For more information on installing the UDF Reader program, go to “Installing the Easy CD Creator/DirectCD software” on page 1-6.
4. Avoid writing at the slower 1X speed unless required by your computer.