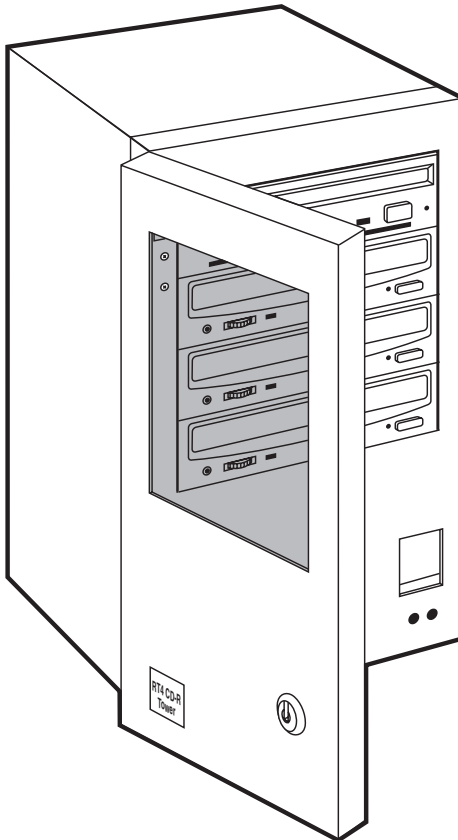




RT4 CD-R Tower for Macintosh



**CUSTOMER
SUPPORT
INFORMATION**

Order toll-free in the U.S. 24 hours, 7 A.M. Monday to midnight Friday: **877-877-BBOX**
FREE technical support, 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mail order: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

**FEDERAL COMMUNICATIONS COMMISSION
and CANADIAN DEPARTMENT OF COMMUNICATIONS
RADIO FREQUENCY INTERFERENCE STATEMENT**

Class B Digital Device. This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular 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. If this equipment does cause harmful interference to radio or telephone reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one 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 experienced radio/TV technician for help.

Caution:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To meet FCC requirements, shielded cables and power cords are required to connect this device to a personal computer or other Class B certified device.

This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

**NORMAS OFICIALES MEXICANAS (NOM)
ELECTRICAL SAFETY STATEMENT****INSTRUCCIONES DE SEGURIDAD**

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.

11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

WARNING!

Follow the instructions carefully! Using this equipment without following the instructions in this manual could expose you to hazardous radiation.

TRADEMARKS USED IN THIS MANUAL

Photo CD® is a registered trademark of Eastman Kodak.

Any other trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

Contents

1. Specifications.....	8
2. Introduction	10
2.1 Hardware Requirements.....	10
2.2 Software Requirements.....	10
3. Installation.....	11
3.1 Setting the Address Switches	11
3.2 Connecting the Cables.....	12
4. Using the CD-R Drive	14
4.1 Loading the Caddy.....	15
4.2 How to Use the CD-R Drive.....	16
4.2.1 Starting Up	16
4.2.2 Ejecting a Caddy.....	17
4.2.3 Ejecting a Caddy Manually in an Emergency.....	18
5. Using the CD-ROM Drives.....	19
5.1 Starting Up	20
5.2 Ejecting a Disc	21
5.3 Ejecting a Disc Manually in an Emergency	22

1. Specifications

For the Tower:

Operating Temperature — 41 to 122°F (5 to 50°C)

Humidity Tolerance — 10 to 90%, noncondensing

Vibration Tolerance —

Operating: 1.47 m/s² (0.3 G_{o-p}) at 5 to 300 Hz (sweep)

Non-Operating: 19.6 m/s² (2 G_{o-p}) at 7 to 300 Hz

Transportation: 1.44 m²/s⁴-Hz (0.015G²/Hz) at 5 to 50 Hz (with standard package)

Shock Tolerance —

Operating: 49 m/s² (5 G_{o-p}) at 11 ms half sine wave (includes 5 retries)

Non-Operating: 490 m²/s² (50 G_{o-p}) at 11 ms trapezoidal wave

Transportation: 75-cm drop (with standard package)

Power —

Input: 115 or 240 VAC, 3 or 1.5 amps, 60 or 50 Hz (selectable)

Output: +5 VDC at 10 A, +12 VDC at 8 A, 12 A peak

Cooling — 33-cfm rear-wall fan; 52-cfm power-supply fan

For the CD-R Drive:

Disc Diameter — 12 cm

Format Used for Write Function —

CD-ROM Mode 1

ISO 9660

CD-ROM XA

CD-DA (Red Book)

CD-I (Green Book)

Photo CD®

CD-Bridge

CD-R (Orange Book and Yellow Book)

Average Access Time — 500 ms

Data-Transfer Rates — 614 kbps

Data-Buffer Size — 1024 KB

Mean Time Between Failures — 100,000 powered-on hours (25% duty)

For the CD-ROM Drives:

Host Interface — SCSI-2

Buffer Size — 256 KB

Disc Diameter — 12 or 8 cm

Formats Read — ISO 9660
CD-ROM Modes 1 and 2 Data Discs
CD-ROM XA (Orange Book)
CD-Audio discs
CD-DA (Red Book)
Audio-combined CD-ROM discs
CD-I discs (readable)
CD-I Ready (Green Book)
CD WO (fixed and variable packets)
Photo CD®
CD-Bridge
Yellow Book

Access Time — 220 ms

Drive Speed — 40X

Data-Transfer Rates — 600 kbps

Mean Time Between Failures — 70,000 powered-on hours

Read Error Rate (includes retry, with a standard disc) — ECC on:
<10⁻¹² Block/bits; ECC off: <10⁻⁹ Block/bits

2. Introduction

This manual explains how to install the RT4 CD-R Tower. There are also separate manuals for the CD-R drive and for the software; make sure you read them, too.

2.1 Hardware Requirements

To use the Tower, you'll probably need at least the following components:

- One or more host adapter interface cards
- Interface cables
- SCSI terminators

2.2 Software Requirements

Software drivers for the CD-R drive and the CD-ROM drives will be provided with either your host interface card or the operating system.

To read data from CD-ROM discs, install the appropriate application software.

3. Installation

Figure 3-1 shows the back of the RT4 CD-R Tower.

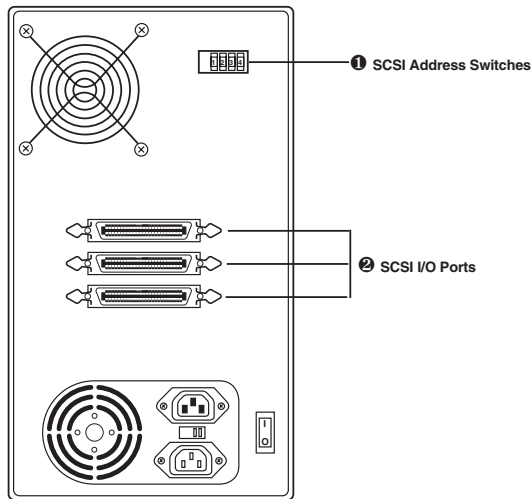


Fig. 3-1. The Back of the RT4 CD-R Tower.

- ❶ SCSI ID pushbutton address switches (see **Section 3.1**)
- ❷ SCSI I/O ports (see **Section 3.2**)

3.1 Setting the Address Switches

There is a SCSI address for any device on a SCSI bus. The host adapter is always address 7. The PC's bootable hard drive, C:, will be SCSI address 0. Other SCSI devices must each have a unique SCSI address from 1 to 6.

An RT4 CD-R Tower can be attached to a dedicated SCSI host adapter. Since it has four drives altogether (one CD-R and three CD-ROM), it needs four SCSI addresses—one for each drive.

To set the SCSI addresses, find the row of address switches on the back of the Tower. (See Fig. 3-1 on the previous page.) The CD-ROM drives, from top to bottom, correspond to the first three switches, from left to right. The fourth switch is for the CD-R drive.

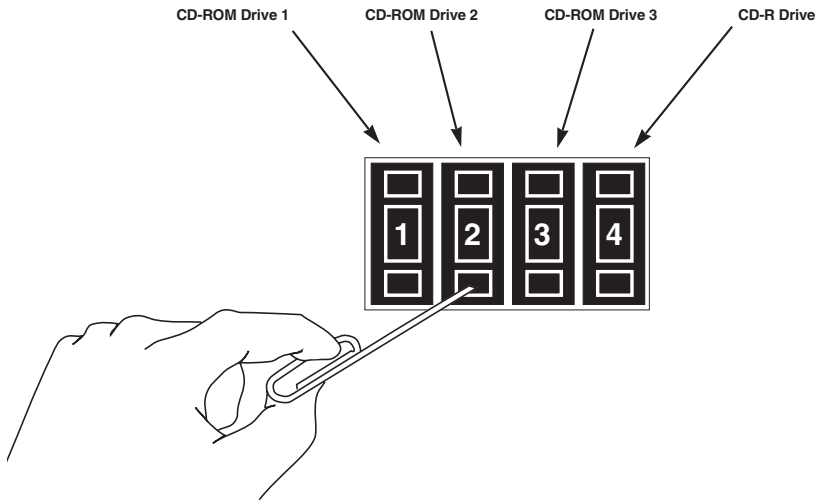


Fig. 3-2. Setting the Address Switches.

To set the address, push the small button below the address window until the address you want appears in the window. (Pressing the upper button steps through the numbers backwards.)

3.2 Connecting the Cables

The Tower has three SCSI I/O ports. There are two ways to connect them.

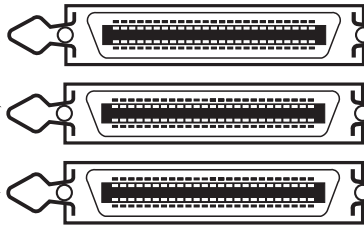
If you'll be using *one host adapter* for all the drives, both CD-R and CD-ROM:

1. Connect the top port (#1) to the middle port (#2) with the jumper cable that came with your Tower.
2. Connect the bottom port (#3) to the host adapter interface card.

If you're using
one host adapter:

Connect the
jumper cable
between these
two ports

Connect this
port to the host
adapter



If you're using two
host adapters:

Connect this port
to the CD-R host
adapter

Connect this port
to the CD-ROM
host adapter

Plug the
terminator into
this port

Fig. 3-3. The SCSI I/O Ports.

You can also connect the jumper between ports #1 and #3, and connect #2 to the host adapter. Either way will work.

Since the top port is internally terminated, you don't need to use any external termination when the cables are connected this way.

If you'll be using a *separate host adapter* for the CD-R drive:

1. Connect the top port (#1) to the host adapter for the CD-R drive.
2. Connect the middle port (#2) to the host adapter for the CD-ROM drives.
3. Plug the terminator that came with your tower into the bottom port (#3).

You can also connect port #3 to the host adapter, and terminate #2. Either way will work.

4. Using the CD-R Drive

Figure 4-1 shows the front of the CD-R drive, which is the top drive in the Tower.

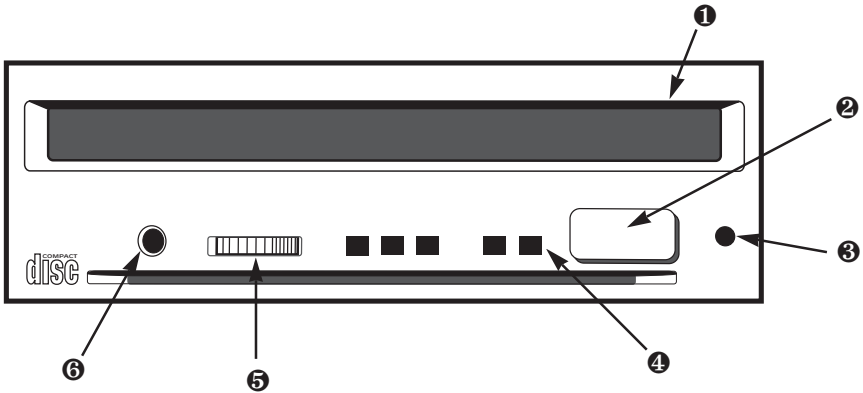


Fig. 4-1. The CD-R Drive.

- ❶ Caddy-loading mechanism.
- ❷ Eject button—ejects the caddy (and the disc) from the drive.
- ❸ Emergency eject hole—Push a fine rod, such as an unbent paper clip, into this hole to eject the disc in an emergency. See **Section 4.2.3**.
- ❹ Indicator lights—
 - Disc—green when the disc is recognized
 - Read—green during reads
 - Write—orange during writing
 - 2X—Green in 2X mode
 - 4X—Green in 4X mode

- ⑤ Volume control—controls the volume of the audio output through the headphone jack
- ⑥ Headphone jack—two-channel audio output for standard headphones.

4.1 Loading the Caddy

The CD-R drive uses disc caddies. Before you put a disc in the drive, you have to put it in a caddy

1. Remove the protective film on the caddy lid, if there is any, before using the caddy.

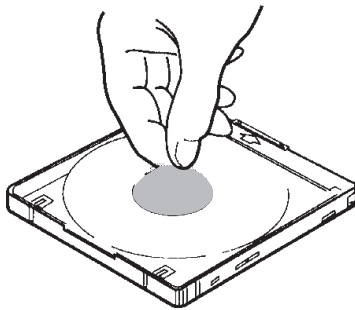


Fig. 4-2. Removing the Film.

2. Set a disc, with its label upward, in the caddy. The front of the disc should slide below the lip of the caddy.

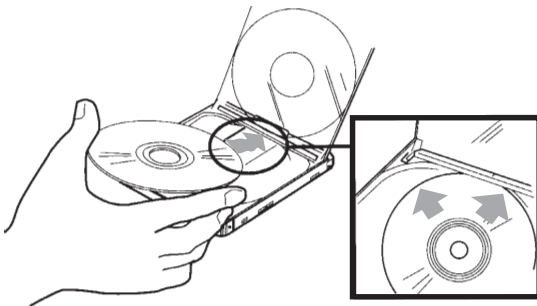


Fig. 4-3. Setting the Disc in the Caddy.

3. Close the lid firmly.

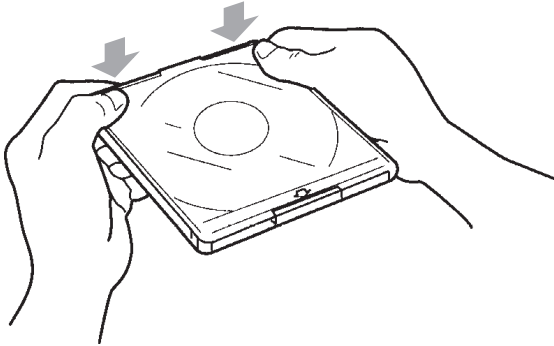


Fig. 4-4. Closing the Caddy.

Important:

- Do not drop the disc or caddy.
- The caddy is designed so that its shutter automatically opens when it is inserted in the drive. Do not open the shutter manually and touch the disc.
- The caddy is precisely adjusted at the factory. Do not disassemble it.

4.2 How to Use the CD-R Drive

Make sure the software to operate the CD-R drive is installed in the host computer before you use the drive.

4.2.1 STARTING UP

1. Turn on the power supply; the green Power light will come on.
2. Insert the caddy in the slot (number ❶ in Fig. 4-1) with the disc's label facing up, and push the caddy until it is accepted into the drive completely.

4.2.2 EJECTING A CADDY

1. Make sure the power is on.
2. Press the eject button on the drive.

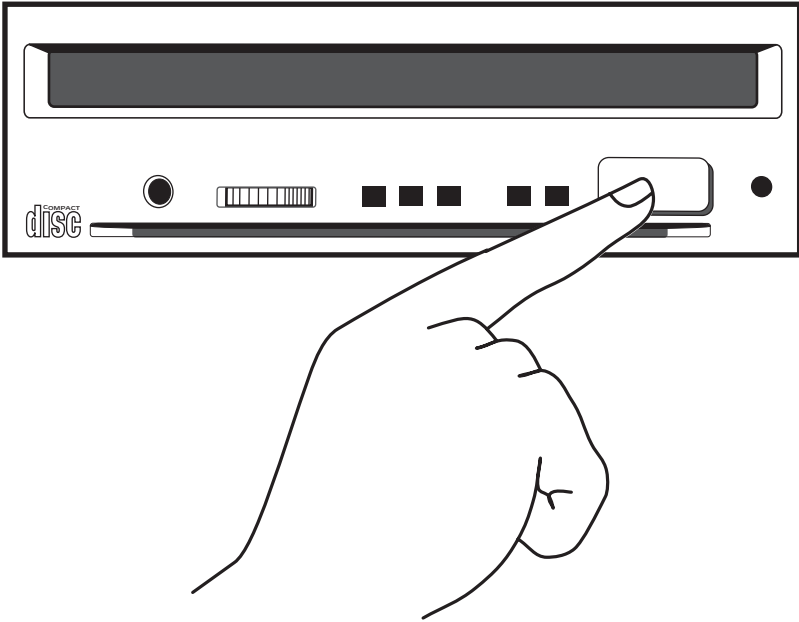


Fig. 4-5. Ejecting the Caddy.

NOTE: The eject button won't work if it's disabled by the software. To eject a caddy when the button is disabled, turn your computer's power off, then turn it on again. If that fails, see the next section.

4.2.3 EJECTING A CADDY MANUALLY IN AN EMERGENCY

If something goes wrong with the drive, you can still get the disc out. Naturally, you should use this procedure only when the normal eject button isn't working.

1. Turn off both the Tower and your computer.
2. Insert a thin rod, such as an unbent paper clip, into the emergency-eject hole, and push firmly.

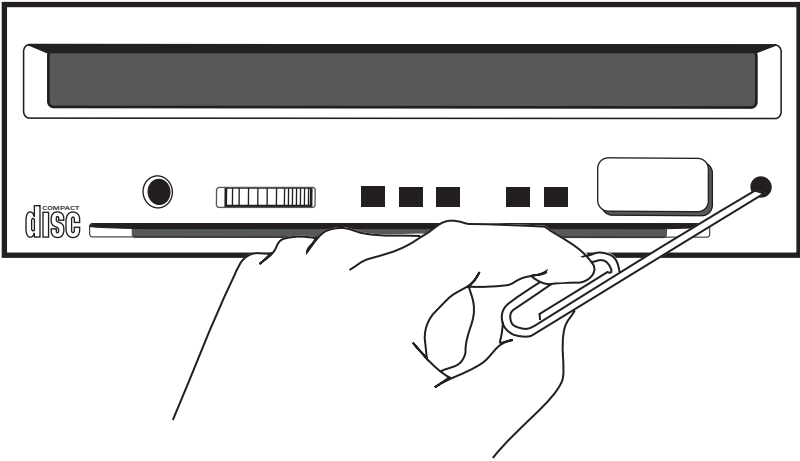


Fig. 4-6. Using the Emergency Eject.

If you have to use the emergency eject often, something is wrong with your Tower. Call for technical support.

5. Using the CD-ROM Drives

Figure 5-1 shows the front of one of the CD-ROM drives. All three CD-ROM drives are the same.

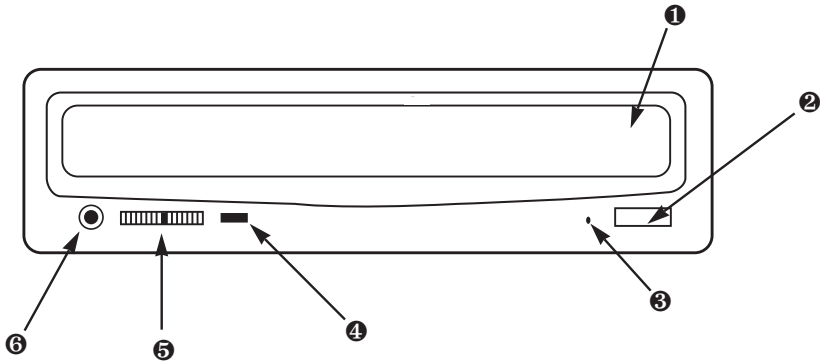


Fig. 5-1. The Front of One of the CD-ROM Drives.

- ❶ Disc tray.
- ❷ Eject button—ejects the tray (and the disc) from the drive.
- ❸ Emergency eject hole—Push a fine rod, such as an unbent paper clip, into this hole to eject the disc in an emergency. See **Section 5.3**.
- ❹ Indicator light—
 - Green: Power on.
 - Flashing yellow: Seeking and reading.
 - Steady yellow: Error.
- ❺ Volume control—controls the volume of the audio output through the headphone jack.
- ❻ Headphone jack—two-channel audio output for standard headphones.

5.1 Starting Up

1. Turn on the power; the green Power light should come on.
2. Push the eject button on the CD-ROM drive. The tray will come out.
3. Set a disc in the tray with the disc's label facing up, and push the tray or the eject button until the tray is completely closed.

The busy light changes from green to yellow while the drive is reading the disc's table of contents. When the light turns green again, the drive is ready to use. From here on, follow the instructions for your CD-ROM software.

If the light stays yellow, the disc is probably not seated on the tray correctly. Push the eject button and try again. If the light stays yellow again, try another disc. If the light is still yellow, there's a problem with the drive; call for technical support.

When you play an audio disc, the light will stay yellow while the disc is playing. Otherwise, it should be green, flashing yellow only when data is being read from the disc.

5.2 Ejecting a Disc

To eject a disc:

1. Make sure the power is on.
2. Push the eject button.

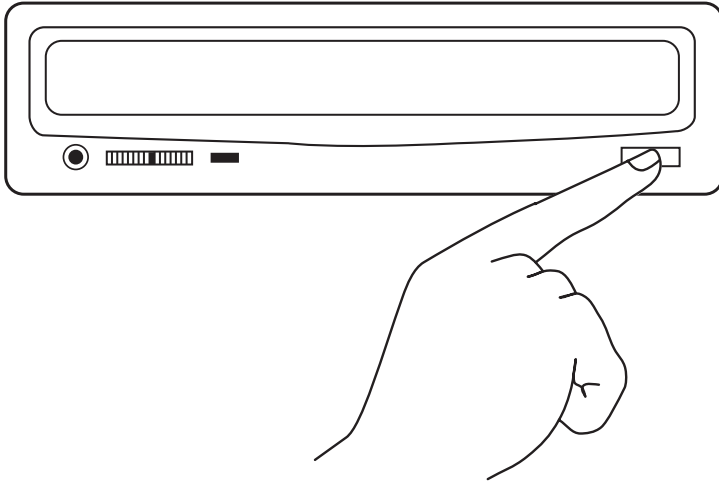


Fig. 5-2. Ejecting the Disc.

NOTE: The eject button won't work if it's disabled by the software. To eject a caddy when the button is disabled, turn your computer's power off, then turn it on again. If that fails, see the next section.

5.3 Ejecting a Disc Manually in an Emergency

If something goes wrong with the drive, you can still get the disc out. Naturally, you should use this procedure only when the normal eject button isn't working.

1. Turn off both the Tower and your computer.
2. Insert a thin rod, such as an unbent paper clip, into the emergency-eject hole, and push firmly.

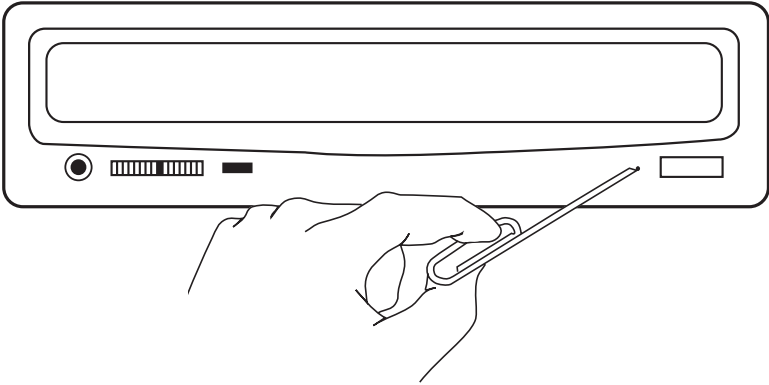


Fig. 5-3. Using the Emergency Eject.

If you have to use the emergency eject often, something is wrong with your Tower. Call for technical support.



© Copyright 2000. Black Box Corporation. All rights reserved.

1000 Park Drive • Lawrence, PA 15055-1018 • 724-746-5500 • Fax 724-746-0746