35/70 GB DLT Internal Tape Drive

User's Guide

OPTIONS
by IBM

Note: If you are using this product in the United States, Canada, or Puerto Rico, be sure to read the information under Appendix E, "Warranty and Notices" on page 3-16 before using this information and the product it supports.

For all other countries, the warranty terms and conditions applicable in the country of purchase are available from IBM or your reseller.

First Edition (September 1998)

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Safety: Read First

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CAUTION: Read the Safety Information in the Appendix, page 3-1, before installing this product.

Bitte beachten: Vor der Installation dieses Produkts bitte die Sicherheitsinformationen im Anhang (Seite 3-1) durchlesen.

ATTENTION: Lire les Consignes de Sécurité en Annexe, page 3-1, avant d'installer ce produit.

Precaución: Antes de instalar este producto, lea la información sobre seguridad que aparece en el apéndice, páginas 3 a 1.

注意：この製品をインストールする前に、付録ページ 3-1 の安全に関する表示をお読み下さい。

ATTENZIONE: Prima di procedere all'installazione di questo dispositivo, leggere le Informazioni sulla sicurezza nell'Appendice a

ADVERTÊNCIA: Leia a informação sobre segurança no Apêndice, página 3-1, antes de instalar este produto.

OPOZORNĚNÍ: Před instalací tohoto výrobku si přečtěte Informace o bezpečnosti v Dodatku, str. 3-1.

BEMÆRK: Læs sikkerhedsinformationen i tillægget, side 3-1, før du installerer dette produkt.

LET OP: Voordat dit produkt wordt geïnstalleerd dient de informatie over veiligheid in de bijlage op pagina 3-1 gelezen te worden.

ATTENTION: Avant d'installer ce produit, veuillez lire les renseignements en matière de sécurité à la page 3-1 de l'Annexe.

VAROITUS: Lue liitteen sivulla 3-1 olevat turvallisuusohjeet, ennen tämän laitteen asentamista.

זהירות: קרא את הוראות הבטיחות המופיעות בנספח, עמ' 3-1, לפני התקנת מכשיר זה.

FIGYELMEZTETÉS: Mielôtt beszerelné a terméket, olvassa el a függelék 3-1 oldalán található biztonsági információkat.

주의 : 본 제품을 설피하기 전에 부록의 3쪽 1항에 있는 안전 수칙을 숙독한다.

ADVARSEL: Les informasjonen om sikkerhet i Appendiks, side 3-1, før du installerer dette produktet.

UWAGA: Przed zainstalowaniem tego wyrobu należy przeczytać informację dotyczącą bezpieczeństwa w Załączniku na str. 3-1.

CUIDADO: Leia as Informações de Segurança no Anexo, página 3-1, antes de instalar este produto.

小心：請在安裝本產品之前仔細閱讀3-1頁附錄中的安全信息。

Opozorilo: Upoštevajte varnostna obvestila v dodatku, stran 3.-1., preden napravo instalirate.

VARNING: Läs säkerhetsinformationen i bilagan, sid. 3-1 innan du installerar denna produkt.

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.pc.ibm.com/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 information on the 35/70 GB DLT™ Internal Tape Drive. The manual is divided into the following parts:

Part 1: Abbreviated installation instructions and usage information in the following languages:

English	German
French	Spanish
Italian	Brazilian Portuguese
Japanese	

Part 2: More detailed information on:

- Installation
- Operation
- Problem-solving

Part 3: Safety information, power-on self-test, specifications, service, warranty, and notices

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

Part 1: Quick Installation Guide

This section contains abbreviated installation instructions. For more detailed information, go to "Installing the Drive" on page 2-3.

The 35/70 GB[1] DLT Internal Tape Drive is a fast/wide SCSI-2 tape drive for backing up and restoring data and archiving files. Each tape cartridge can store up to 35 GB of data (uncompressed), or up to 70 GB of data (compressed).

In addition to this book, the option package contains:

- IBM 35/70 GB DLT Internal Tape Drive
- Mounting screws
- Jumpers
- Data cartridge
- Backup application CD
- Warranty registration card
- 68-pin SCSI cable

Contact your place of purchase if an item is missing or damaged. Be sure to retain your proof of purchase and packing material. They might be required to receive warranty service.

Installing the Drive in IBM Servers

The tape drive is compatible with the Netfinity 7000, Netfinity 5500, and PC Server 704 servers. For instructions on installing the tape drive in a server, go to the "Installing Internal Drives" section in the server's *User's Handbook* and follow the directions for "Installing a 5.25-inch Removable-Media Drive."

Note: The server *User's Handbook* instructions refer specifically to installing a half-high drive in a single bay in the server. Your tape drive is a full-high drive and must be installed in **both** drive bays in the server.

[1] *GB equals approximately 1 000 000 000 bytes.*

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Backup and Restore Server Software

The 35/70 GB DLT Internal Tape Drive includes a backup application CD for IBM servers. This CD includes the following applications that support the tape drive:

- Seagate Backup Exec Version 6.11 (or later) for Microsoft Windows NT
- Seagate Backup Exec Version 7.11 (or later) for Novell NetWare

The CD also contains backup applications that are used with other products but are not applicable to the 35/70 GB DLT Internal Tape Drive. Other supported tape drive configurations can be found on the IBM Server Compatibility Web page at http://www.pc.ibm.com/us/compat.

If you have questions or problems with your backup application CD, contact Seagate Software, Inc. at 1-800-SEAGATE.

Installing the Drive in Other Computers

Selecting a SCSI ID

All devices attached to a SCSI adapter must have a unique SCSI identification number (ID). Usually, your PC or SCSI adapter comes with a configuration program that lets you see which SCSI IDs are in use. Refer to the documentation that comes with your adapter or computer for more information. Otherwise, you might need to physically inspect each device to identify its SCSI ID.

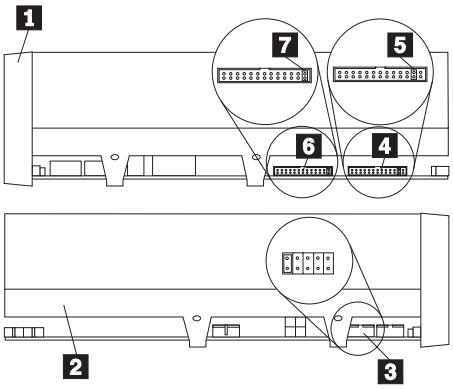
Select a SCSI ID from 0 to 15 for the tape drive. The SCSI ID must be supported by your SCSI adapter. The tape drive is shipped with the SCSI ID preset to 5. If you decide to change the preset ID, give the tape drive a low priority address (0, 1, 2, etc.), because disk drives need the higher priority. Do not assign an ID of 7, because this is normally used by the SCSI adapter.

Installation Instructions

Follow these instructions to install your tape drive:

1. Turn off all attached devices. Turn off the computer. Unplug the power cords for the computer and all attached devices; then open the computer.
2. Before opening the static-protective bag containing the tape drive, touch the bag to an unpainted metal surface on the computer for at least two seconds. Remove the drive from the static-protective bag. If you must put the drive down, place the drive on the static-protective bag. Do not touch any exposed components on the drive.

   The following illustration shows the location of the configuration jumper blocks.

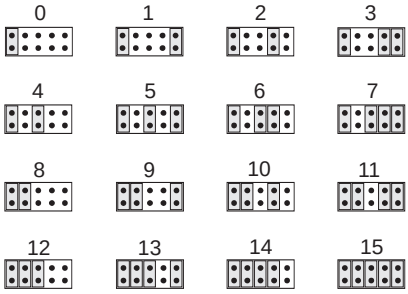


1 Right side view
2 Left side view
3 SCSI ID jumper block
4 SCSI termination power jumper block
5 SCSI termination power jumper
6 SCSI parity jumper block
7 SCSI parity disable jumper

3. If the tape drive is the last device on the SCSI bus, the bus must be terminated at the drive. To terminate the bus, be sure there is a jumper in position 5 on jumper block 4, and attach a fast/wide, inline SCSI terminator (not provided) to the drive connector, before attaching the SCSI cable to the terminator. Some SCSI cables are self-terminating. Check the information that came with you PC or SCSI adapter for more information.

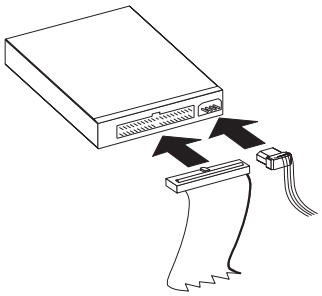
4. If your system does not generate parity, you can disable parity checking by adding a jumper in position 7 on the parity jumper block 6.

5. If you choose the default SCSI address of 5, proceed to the next step. Use the SCSI jumper block 3 to set your SCSI ID. The following illustration shows how to set the jumper block for each ID. Use the larger jumpers which came with your tape drive. You must install a jumper in the leftmost position.



6. Mount the tape drive in either a horizontal or vertical position. The drive has one set of mounting holes that fit a standard 5.25-inch drive bay. Insert each of the screws through a drive-bay mounting hole into a threaded screw hole on the tape drive; then tighten with a screwdriver. If space is limited, you might need to attach the SCSI and power cables before mounting the drive.

7. To install the cables, refer to the following view of the back of the tape drive.



When you connect SCSI drives to the SCSI adapter, start with the SCSI connector on the cable that is farthest from the adapter. Then, with each additional device, work your way in from the far end back towards the adapter. Connecting the devices in this order ensures better signal quality. Connect the SCSI cable to the tape drive. Connect the power cable to the power connector.

8. Replace the computer cover. Reconnect the power cord and any other signal cables. Turn on all attached devices; then turn on the computer. Ensure that the appropriate advanced SCSI programming interface (ASPI) device drivers are installed to support the tape drive. These device drivers are usually provided with the SCSI adapter. You might need to reconfigure your SCSI adapter. See the documentation that comes with your computer or adapter.

9. When the tape drive receives power from the computer, it does a power-on self-test (POST) within 15 seconds, and is ready to use.

   If all the indicators on either side of the tape drive blink in unison, there is a problem with the tape drive. Press the **Unload** button to eject any tape that might be inserted and to reset the drive. If the problem persists, power off the system; then turn the power back on. If the problem continues, see "Solving Problems" on page 2-12 for further steps.

10. In order to use the drive, you must install the appropriate backup and restore software for your computer's operating system. For more information, refer to the documentation that comes with your computer. If you are installing the drive in an IBM server, you must use the backup application CD provided in your option package. See "Backup and Restore Server Software" on page 1-2 for supported software packages for servers. Follow the installation and operating instructions included with your software to begin using the tape drive.

Using the Drive

The following section contains instructions for using your tape drive. For more detailed information, see "Using the Drive" on page 2-7.

> **Important:** If you power on the drive with a tape inserted and the handle unlatched, it might damage the tape or drive.

Loading a Tape

1. Be sure the Operate Handle indicator (green) is on.
2. Lift the Cartridge Insert/Release handle.
3. Insert the cartridge into the tape drive.
4. Push the Cartridge Insert/Release handle down.

Unloading a Tape

1. Push the **Unload** button.
2. Wait for the Operate Handle indicator (green) to light.
3. Lift the Cartridge Insert/Release handle.
4. Remove the cartridge.
5. Push the Cartridge Insert/Release handle down.

Cleaning the Drive

When the Use Cleaning Tape indicator lights:

1. Make sure the drive does not have a data tape loaded.
2. Insert an IBM Cleaning Cartridge (part: 59H3092) or DLT cleaning tape.
3. Wait for the tape drive to beep.
4. Unload the cleaning cartridge.

Write-Protecting a Tape

The write-protect switch is located on the front of the tape cartridge. (See the illustration on page 2-9.) A window on the switch shows an orange square when the tape is write-protected. You can change write protection while the tape is inserted in the drive.

Selecting Tape Recording Capacity

For writing data, use only the IBM Data Cartridge (part: 59H3040), or DLTtape IV, DLTtape IIIxt, or DLTtape III cartridges. The tape cartridge you choose affects your choices in recording capacity. The IBM Data Cartridge and DLTtape IV Cartridge support the highest performance and storage capacities.

1. Insert a tape cartridge.
2. Wait for tape motion to stop and the Tape in Use indicator to light steady.
3. Press the **Select** button.
4. Wait for the Density Override light to come on.
5. Press the **Select** button until the light next to the capacity you want is flashing.
6. Start your backup software.

Note: Your choice of capacities is limited by the data cartridge you use. See the table on page 3-12.

Resetting the tape drive

Press the **Unload** button to reset the tape drive.

Quick Installation (German)

The 35/70 GB[2] DLT Internal Tape Drive is a fast/wide SCSI-2 tape drive for backing up and restoring data and archiving files. Each tape cartridge can store up to 35 GB of data (uncompressed), or up to 70 GB of data (compressed).

In addition to this book, the option package contains:

- IBM 35/70 GB DLT Internal Tape Drive
- Mounting screws
- Jumpers
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Contact your place of purchase if an item is missing or damaged. Be sure to retain your proof of purchase and packing material. They might be required to receive warranty service.

Installing the Drive in IBM Servers

The tape drive is compatible with the Netfinity 7000, Netfinity 5500, and PC Server 704 servers. For instructions on installing the tape drive in a server, go to the "Installing Internal Drives" section in the server's *User's Handbook* and follow the directions for "Installing a 5.25-inch Removable-Media Drive."

> **Note:** The server *User's Handbook* instructions refer specifically to installing a half-high drive in a single bay in the server. Your tape drive is a full-high drive and must be installed in **both** drive bays in the server.

Backup and Restore Server Software

The 35/70 GB DLT Internal Tape Drive includes a backup application CD for IBM servers. This CD includes the following applications that support the tape drive:

- Seagate Backup Exec Version 6.11 (or later) for Microsoft Windows NT
- Seagate Backup Exec Version 7.11 (or later) for Novell NetWare

The CD also contains backup applications that are used with other products but are not applicable to the 35/70 GB DLT Internal Tape

[2] *GB equals approximately 1 000 000 000 bytes.*

Drive. Other supported tape drive configurations can be found on the IBM Server Compatibility Web page at http://www.pc.ibm.com/us/compat.

If you have questions or problems with your backup application CD, contact Seagate Software, Inc. at 1-800-SEAGATE.

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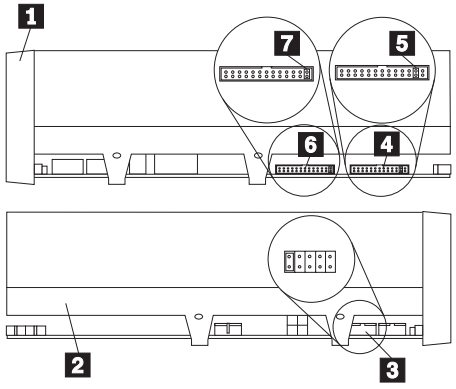

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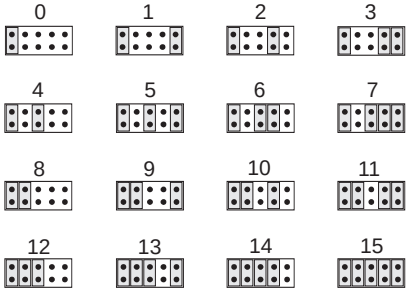

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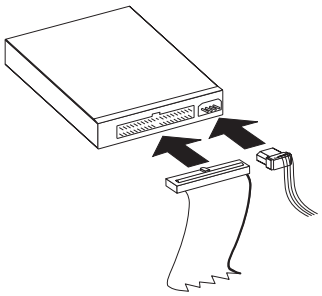

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Note: Your choice of capacities is limited by the data cartridge you use. See the table on page 3-12.

Resetting the tape drive

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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.pc.ibm.com/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.

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.

Quick Installation (French)

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Installing the Drive in Other Computers

Selecting a SCSI ID

All devices attached to a SCSI adapter must have a unique SCSI identification number (ID). Usually, your PC or SCSI adapter comes with a configuration program that lets you see which SCSI IDs are in use. Refer to the documentation that comes with your adapter or computer for more information. Otherwise, you might need to physically inspect each device to identify its SCSI ID.

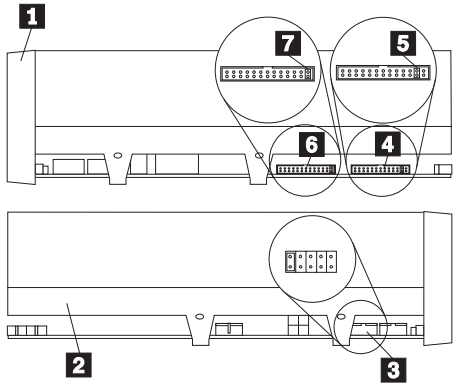
Select a SCSI ID from 0 to 15 for the tape drive. The SCSI ID must be supported by your SCSI adapter. The tape drive is shipped with the SCSI ID preset to 5. If you decide to change the preset ID, give the tape drive a low priority address (0, 1, 2, etc.), because disk drives need the higher priority. Do not assign an ID of 7, because this is normally used by the SCSI adapter.

Installation Instructions

Follow these instructions to install your tape drive:

1. Turn off all attached devices. Turn off the computer. Unplug the power cords for the computer and all attached devices; then open the computer.
2. Before opening the static-protective bag containing the tape drive, touch the bag to an unpainted metal surface on the computer for at least two seconds. Remove the drive from the static-protective bag. If you must put the drive down, place the drive on the static-protective bag. Do not touch any exposed components on the drive.

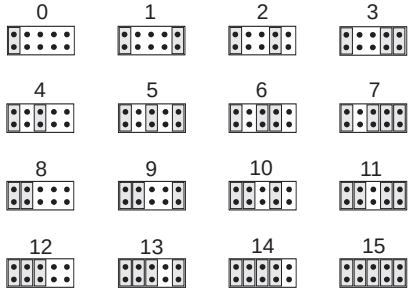
   The following illustration shows the location of the configuration jumper blocks.



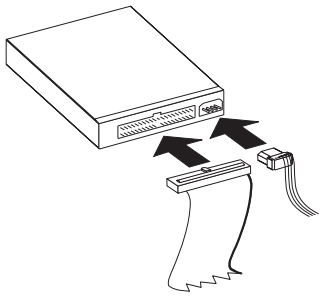
1 Right side view
2 Left side view
3 SCSI ID jumper block
4 SCSI termination power jumper block

5 SCSI termination power jumper
6 SCSI parity jumper block
7 SCSI parity disable jumper

3. If the tape drive is the last device on the SCSI bus, the bus must be terminated at the drive. To terminate the bus, be sure there is a jumper in position **5** on jumper block **4**, and attach a fast/wide, inline SCSI terminator (not provided) to the drive connector, before attaching the SCSI cable to the terminator. Some SCSI cables are self-terminating. Check the information that came with you PC or SCSI adapter for more information.
4. If your system does not generate parity, you can disable parity checking by adding a jumper in position **7** on the parity jumper block **6**.
5. If you choose the default SCSI address of 5, proceed to the next step. Use the SCSI jumper block **3** to set your SCSI ID. The following illustration shows how to set the jumper block for each ID. Use the larger jumpers which came with your tape drive. You must install a jumper in the leftmost position.



6. Mount the tape drive in either a horizontal or vertical position. The drive has one set of mounting holes that fit a standard 5.25-inch drive bay. Insert each of the screws through a drive-bay mounting hole into a threaded screw hole on the tape drive; then tighten with a screwdriver. If space is limited, you might need to attach the SCSI and power cables before mounting the drive.
7. To install the cables, refer to the following view of the back of the tape drive.



When you connect SCSI drives to the SCSI adapter, start with the SCSI connector on the cable that is farthest from the adapter. Then, with each additional device, work your way in from the far end back towards the adapter. Connecting the devices in this order ensures better signal quality. Connect the SCSI cable to the tape drive. Connect the power cable to the power connector.

8. Replace the computer cover. Reconnect the power cord and any other signal cables. Turn on all attached devices; then turn on the computer. Ensure that the appropriate advanced SCSI

programming interface (ASPI) device drivers are installed to support the tape drive. These device drivers are usually provided with the SCSI adapter. You might need to reconfigure your SCSI adapter. See the documentation that comes with your computer or adapter.

9. When the tape drive receives power from the computer, it does a power-on self-test (POST) within 15 seconds, and is ready to use.

   If all the indicators on either side of the tape drive blink in unison, there is a problem with the tape drive. Press the **Unload** button to eject any tape that might be inserted and to reset the drive. If the problem persists, power off the system; then turn the power back on. If the problem continues, see "Solving Problems" on page 2-12 for further steps.

10. In order to use the drive, you must install the appropriate backup and restore software for your computer's operating system. For more information, refer to the documentation that comes with your computer. If you are installing the drive in an IBM server, you must use the backup application CD provided in your option package. See "Backup and Restore Server Software" on page 1-11 for supported software packages for servers. Follow the installation and operating instructions included with your software to begin using the tape drive.

Using the Drive

The following section contains instructions for using your tape drive. For more detailed information, see "Using the Drive" on page 2-7.

Important: If you power on the drive with a tape inserted and the handle unlatched, it might damage the tape or drive.

Loading a Tape

1. Be sure the Operate Handle indicator (green) is on.
2. Lift the Cartridge Insert/Release handle.
3. Insert the cartridge into the tape drive.
4. Push the Cartridge Insert/Release handle down.

Unloading a Tape

1. Push the **Unload** button.
2. Wait for the Operate Handle indicator (green) to light.
3. Lift the Cartridge Insert/Release handle.
4. Remove the cartridge.
5. Push the Cartridge Insert/Release handle down.

Cleaning the Drive

When the Use Cleaning Tape indicator lights:

1. Make sure the drive does not have a data tape loaded.
2. Insert an IBM Cleaning Cartridge (part: 59H3092) or DLT cleaning tape.
3. Wait for the tape drive to beep.
4. Unload the cleaning cartridge.

Write-Protecting a Tape

The write-protect switch is located on the front of the tape cartridge. (See the illustration on page 2-9.) A window on the switch shows an orange square when the tape is write-protected. You can change write protection while the tape is inserted in the drive.

Selecting Tape Recording Capacity

For writing data, use only the IBM Data Cartridge (part: 59H3040), or DLTtape IV, DLTtape IIIxt, or DLTtape III cartridges. The tape cartridge you choose affects your choices in recording capacity. The IBM Data Cartridge and DLTtape IV Cartridge support the highest performance and storage capacities.

1. Insert a tape cartridge.
2. Wait for tape motion to stop and the Tape in Use indicator to light steady.
3. Press the **Select** button.
4. Wait for the Density Override light to come on.
5. Press the **Select** button until the light next to the capacity you want is flashing.
6. Start your backup software.

Note: Your choice of capacities is limited by the data cartridge you use. See the table on page 3-12.

Resetting the tape drive

Press the **Unload** button to reset the tape drive.

Product Registration

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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.

Quick Installation (Spanish)

The 35/70 GB[4] DLT Internal Tape Drive is a fast/wide SCSI-2 tape drive for backing up and restoring data and archiving files. Each tape cartridge can store up to 35 GB of data (uncompressed), or up to 70 GB of data (compressed).

In addition to this book, the option package contains:

- IBM 35/70 GB DLT Internal Tape Drive
- Mounting screws
- Jumpers
- Data cartridge
- Backup application CD
- Warranty registration card
- 68-pin SCSI cable

Contact your place of purchase if an item is missing or damaged. Be sure to retain your proof of purchase and packing material. They might be required to receive warranty service.

Installing the Drive in IBM Servers

The tape drive is compatible with the Netfinity 7000, Netfinity 5500, and PC Server 704 servers. For instructions on installing the tape drive in a server, go to the "Installing Internal Drives" section in the server's *User's Handbook* and follow the directions for "Installing a 5.25-inch Removable-Media Drive."

> **Note:** The server *User's Handbook* instructions refer specifically to installing a half-high drive in a single bay in the server. Your tape drive is a full-high drive and must be installed in **both** drive bays in the server.

Backup and Restore Server Software

The 35/70 GB DLT Internal Tape Drive includes a backup application CD for IBM servers. This CD includes the following applications that support the tape drive:

- Seagate Backup Exec Version 6.11 (or later) for Microsoft Windows NT
- Seagate Backup Exec Version 7.11 (or later) for Novell NetWare

The CD also contains backup applications that are used with other products but are not applicable to the 35/70 GB DLT Internal Tape

[4] *GB equals approximately 1 000 000 000 bytes.*

Drive. Other supported tape drive configurations can be found on the IBM Server Compatibility Web page at http://www.pc.ibm.com/us/compat.

If you have questions or problems with your backup application CD, contact Seagate Software, Inc. at 1-800-SEAGATE.

Installing the Drive in Other Computers

Selecting a SCSI ID

All devices attached to a SCSI adapter must have a unique SCSI identification number (ID). Usually, your PC or SCSI adapter comes with a configuration program that lets you see which SCSI IDs are in use. Refer to the documentation that comes with your adapter or computer for more information. Otherwise, you might need to physically inspect each device to identify its SCSI ID.

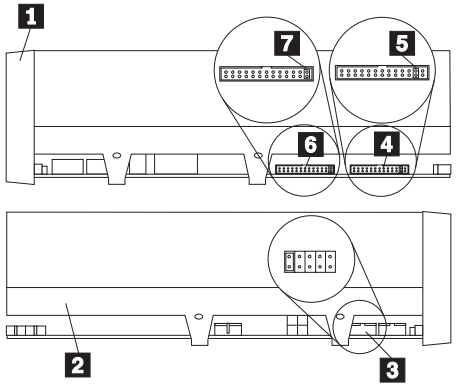
Select a SCSI ID from 0 to 15 for the tape drive. The SCSI ID must be supported by your SCSI adapter. The tape drive is shipped with the SCSI ID preset to 5. If you decide to change the preset ID, give the tape drive a low priority address (0, 1, 2, etc.), because disk drives need the higher priority. Do not assign an ID of 7, because this is normally used by the SCSI adapter.

Installation Instructions

Follow these instructions to install your tape drive:

1. Turn off all attached devices. Turn off the computer. Unplug the power cords for the computer and all attached devices; then open the computer.
2. Before opening the static-protective bag containing the tape drive, touch the bag to an unpainted metal surface on the computer for at least two seconds. Remove the drive from the static-protective bag. If you must put the drive down, place the drive on the static-protective bag. Do not touch any exposed components on the drive.

   The following illustration shows the location of the configuration jumper blocks.



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2 Left side view
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5 SCSI termination power jumper
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7 SCSI parity disable jumper

3. If the tape drive is the last device on the SCSI bus, the bus must be terminated at the drive. To terminate the bus, be sure there is a jumper in position **5** on jumper block **4**, and attach a fast/wide, inline SCSI terminator (not provided) to the drive connector, before attaching the SCSI cable to the terminator. Some SCSI cables are self-terminating. Check the information that came with you PC or SCSI adapter for more information.
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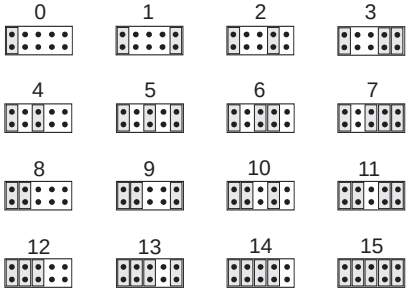
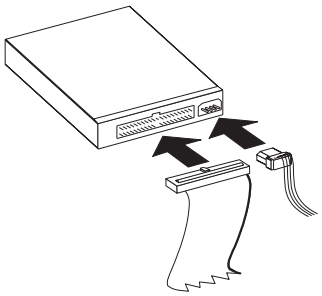


6. Mount the tape drive in either a horizontal or vertical position. The drive has one set of mounting holes that fit a standard 5.25-inch drive bay. Insert each of the screws through a drive-bay mounting hole into a threaded screw hole on the tape drive; then tighten with a screwdriver. If space is limited, you might need to attach the SCSI and power cables before mounting the drive.
7. To install the cables, refer to the following view of the back of the tape drive.



When you connect SCSI drives to the SCSI adapter, start with the SCSI connector on the cable that is farthest from the adapter. Then, with each additional device, work your way in from the far end back towards the adapter. Connecting the devices in this order ensures better signal quality. Connect the SCSI cable to the tape drive. Connect the power cable to the power connector.

8. Replace the computer cover. Reconnect the power cord and any other signal cables. Turn on all attached devices; then turn on the computer. Ensure that the appropriate advanced SCSI

programming interface (ASPI) device drivers are installed to support the tape drive. These device drivers are usually provided with the SCSI adapter. You might need to reconfigure your SCSI adapter. See the documentation that comes with your computer or adapter.

9. When the tape drive receives power from the computer, it does a power-on self-test (POST) within 15 seconds, and is ready to use.

   If all the indicators on either side of the tape drive blink in unison, there is a problem with the tape drive. Press the **Unload** button to eject any tape that might be inserted and to reset the drive. If the problem persists, power off the system; then turn the power back on. If the problem continues, see "Solving Problems" on page 2-12 for further steps.

10. In order to use the drive, you must install the appropriate backup and restore software for your computer's operating system. For more information, refer to the documentation that comes with your computer. If you are installing the drive in an IBM server, you must use the backup application CD provided in your option package. See "Backup and Restore Server Software" on page 1-16 for supported software packages for servers. Follow the installation and operating instructions included with your software to begin using the tape drive.

Using the Drive

The following section contains instructions for using your tape drive. For more detailed information, see "Using the Drive" on page 2-7.

Important: If you power on the drive with a tape inserted and the handle unlatched, it might damage the tape or drive.

Loading a Tape

1. Be sure the Operate Handle indicator (green) is on.
2. Lift the Cartridge Insert/Release handle.
3. Insert the cartridge into the tape drive.
4. Push the Cartridge Insert/Release handle down.

Unloading a Tape

1. Push the **Unload** button.
2. Wait for the Operate Handle indicator (green) to light.
3. Lift the Cartridge Insert/Release handle.
4. Remove the cartridge.
5. Push the Cartridge Insert/Release handle down.

Cleaning the Drive

When the Use Cleaning Tape indicator lights:

1. Make sure the drive does not have a data tape loaded.
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Selecting Tape Recording Capacity

For writing data, use only the IBM Data Cartridge (part: 59H3040), or DLTtape IV, DLTtape IIIxt, or DLTtape III cartridges. The tape cartridge you choose affects your choices in recording capacity. The IBM Data Cartridge and DLTtape IV Cartridge support the highest performance and storage capacities.

1. Insert a tape cartridge.
2. Wait for tape motion to stop and the Tape in Use indicator to light steady.
3. Press the **Select** button.
4. Wait for the Density Override light to come on.
5. Press the **Select** button until the light next to the capacity you want is flashing.
6. Start your backup software.

Note: Your choice of capacities is limited by the data cartridge you use. See the table on page 3-12.

Resetting the tape drive

Press the **Unload** button to reset the tape drive.

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Quick Installation (Italian)

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In addition to this book, the option package contains:

- IBM 35/70 GB DLT Internal Tape Drive
- Mounting screws
- Jumpers
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The tape drive is compatible with the Netfinity 7000, Netfinity 5500, and PC Server 704 servers. For instructions on installing the tape drive in a server, go to the "Installing Internal Drives" section in the server's *User's Handbook* and follow the directions for "Installing a 5.25-inch Removable-Media Drive."

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Drive. Other supported tape drive configurations can be found on the IBM Server Compatibility Web page at http://www.pc.ibm.com/us/compat.

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1. Turn off all attached devices. Turn off the computer. Unplug the power cords for the computer and all attached devices; then open the computer.
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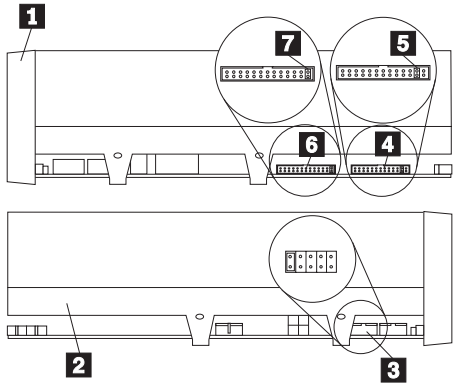

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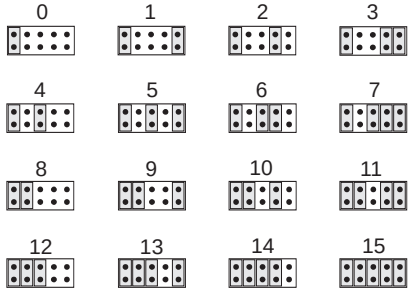

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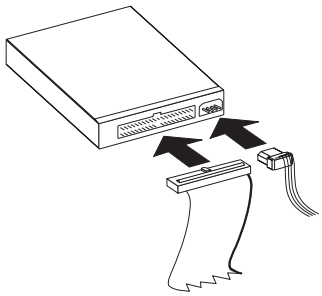

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Using the Drive

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2. Wait for tape motion to stop and the Tape in Use indicator to light steady.
3. Press the **Select** button.
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Installing the Drive in IBM Servers

The tape drive is compatible with the Netfinity 7000, Netfinity 5500, and PC Server 704 servers. For instructions on installing the tape drive in a server, go to the "Installing Internal Drives" section in the server's *User's Handbook* and follow the directions for "Installing a 5.25-inch Removable-Media Drive."

> **Note:** The server *User's Handbook* instructions refer specifically to installing a half-high drive in a single bay in the server. Your tape drive is a full-high drive and must be installed in **both** drive bays in the server.

Backup and Restore Server Software

The 35/70 GB DLT Internal Tape Drive includes a backup application CD for IBM servers. This CD includes the following applications that support the tape drive:

- Seagate Backup Exec Version 6.11 (or later) for Microsoft Windows NT
- Seagate Backup Exec Version 7.11 (or later) for Novell NetWare

The CD also contains backup applications that are used with other products but are not applicable to the 35/70 GB DLT Internal Tape

6 *GB equals approximately 1 000 000 000 bytes.*

Drive. Other supported tape drive configurations can be found on the IBM Server Compatibility Web page at http://www.pc.ibm.com/us/compat.

If you have questions or problems with your backup application CD, contact Seagate Software, Inc. at 1-800-SEAGATE.

Installing the Drive in Other Computers

Selecting a SCSI ID

All devices attached to a SCSI adapter must have a unique SCSI identification number (ID). Usually, your PC or SCSI adapter comes with a configuration program that lets you see which SCSI IDs are in use. Refer to the documentation that comes with your adapter or computer for more information. Otherwise, you might need to physically inspect each device to identify its SCSI ID.

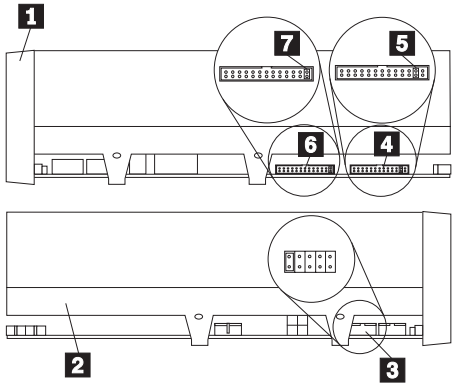
Select a SCSI ID from 0 to 15 for the tape drive. The SCSI ID must be supported by your SCSI adapter. The tape drive is shipped with the SCSI ID preset to 5. If you decide to change the preset ID, give the tape drive a low priority address (0, 1, 2, etc.), because disk drives need the higher priority. Do not assign an ID of 7, because this is normally used by the SCSI adapter.

Installation Instructions

Follow these instructions to install your tape drive:

1. Turn off all attached devices. Turn off the computer. Unplug the power cords for the computer and all attached devices; then open the computer.
2. Before opening the static-protective bag containing the tape drive, touch the bag to an unpainted metal surface on the computer for at least two seconds. Remove the drive from the static-protective bag. If you must put the drive down, place the drive on the static-protective bag. Do not touch any exposed components on the drive.

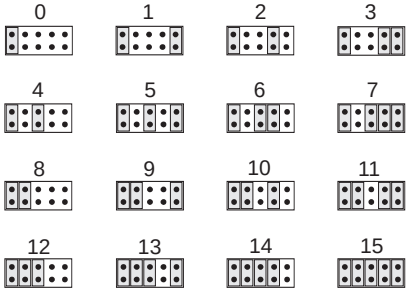
   The following illustration shows the location of the configuration jumper blocks.



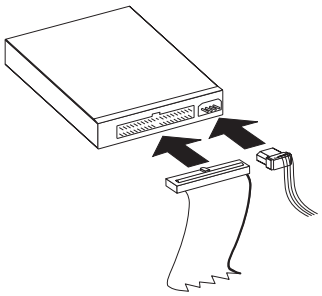
1 Right side view
2 Left side view
3 SCSI ID jumper block
4 SCSI termination power jumper block

5 SCSI termination power jumper
6 SCSI parity jumper block
7 SCSI parity disable jumper

3. If the tape drive is the last device on the SCSI bus, the bus must be terminated at the drive. To terminate the bus, be sure there is a jumper in position **5** on jumper block **4**, and attach a fast/wide, inline SCSI terminator (not provided) to the drive connector, before attaching the SCSI cable to the terminator. Some SCSI cables are self-terminating. Check the information that came with you PC or SCSI adapter for more information.
4. If your system does not generate parity, you can disable parity checking by adding a jumper in position **7** on the parity jumper block **6**.
5. If you choose the default SCSI address of 5, proceed to the next step. Use the SCSI jumper block **3** to set your SCSI ID. The following illustration shows how to set the jumper block for each ID. Use the larger jumpers which came with your tape drive. You must install a jumper in the leftmost position.



6. Mount the tape drive in either a horizontal or vertical position. The drive has one set of mounting holes that fit a standard 5.25-inch drive bay. Insert each of the screws through a drive-bay mounting hole into a threaded screw hole on the tape drive; then tighten with a screwdriver. If space is limited, you might need to attach the SCSI and power cables before mounting the drive.
7. To install the cables, refer to the following view of the back of the tape drive.



When you connect SCSI drives to the SCSI adapter, start with the SCSI connector on the cable that is farthest from the adapter. Then, with each additional device, work your way in from the far end back towards the adapter. Connecting the devices in this order ensures better signal quality. Connect the SCSI cable to the tape drive. Connect the power cable to the power connector.

8. Replace the computer cover. Reconnect the power cord and any other signal cables. Turn on all attached devices; then turn on the computer. Ensure that the appropriate advanced SCSI

programming interface (ASPI) device drivers are installed to support the tape drive. These device drivers are usually provided with the SCSI adapter. You might need to reconfigure your SCSI adapter. See the documentation that comes with your computer or adapter.

9. When the tape drive receives power from the computer, it does a power-on self-test (POST) within 15 seconds, and is ready to use.

   If all the indicators on either side of the tape drive blink in unison, there is a problem with the tape drive. Press the **Unload** button to eject any tape that might be inserted and to reset the drive. If the problem persists, power off the system; then turn the power back on. If the problem continues, see "Solving Problems" on page 2-12 for further steps.

10. In order to use the drive, you must install the appropriate backup and restore software for your computer's operating system. For more information, refer to the documentation that comes with your computer. If you are installing the drive in an IBM server, you must use the backup application CD provided in your option package. See "Backup and Restore Server Software" on page 1-26 for supported software packages for servers. Follow the installation and operating instructions included with your software to begin using the tape drive.

Using the Drive

The following section contains instructions for using your tape drive. For more detailed information, see "Using the Drive" on page 2-7.

Important: If you power on the drive with a tape inserted and the handle unlatched, it might damage the tape or drive.

Loading a Tape

1. Be sure the Operate Handle indicator (green) is on.
2. Lift the Cartridge Insert/Release handle.
3. Insert the cartridge into the tape drive.
4. Push the Cartridge Insert/Release handle down.

Unloading a Tape

1. Push the **Unload** button.
2. Wait for the Operate Handle indicator (green) to light.
3. Lift the Cartridge Insert/Release handle.
4. Remove the cartridge.
5. Push the Cartridge Insert/Release handle down.

Cleaning the Drive

When the Use Cleaning Tape indicator lights:

1. Make sure the drive does not have a data tape loaded.
2. Insert an IBM Cleaning Cartridge (part: 59H3092) or DLT cleaning tape.
3. Wait for the tape drive to beep.
4. Unload the cleaning cartridge.

Write-Protecting a Tape

The write-protect switch is located on the front of the tape cartridge. (See the illustration on page 2-9.) A window on the switch shows an orange square when the tape is write-protected. You can change write protection while the tape is inserted in the drive.

Selecting Tape Recording Capacity

For writing data, use only the IBM Data Cartridge (part: 59H3040), or DLTtape IV, DLTtape IIIxt, or DLTtape III cartridges. The tape cartridge you choose affects your choices in recording capacity. The IBM Data Cartridge and DLTtape IV Cartridge support the highest performance and storage capacities.

1. Insert a tape cartridge.
2. Wait for tape motion to stop and the Tape in Use indicator to light steady.
3. Press the **Select** button.
4. Wait for the Density Override light to come on.
5. Press the **Select** button until the light next to the capacity you want is flashing.
6. Start your backup software.

Note: Your choice of capacities is limited by the data cartridge you use. See the table on page 3-12.

Resetting the tape drive

Press the **Unload** button to reset the tape drive.

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.pc.ibm.com/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.

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.

Quick Installation (Japanese)

The 35/70 GB[7] DLT Internal Tape Drive is a fast/wide SCSI-2 tape drive for backing up and restoring data and archiving files. Each tape cartridge can store up to 35 GB of data (uncompressed), or up to 70 GB of data (compressed).

In addition to this book, the option package contains:

- IBM 35/70 GB DLT Internal Tape Drive
- Mounting screws
- Jumpers
- Data cartridge
- Backup application CD
- Warranty registration card
- 68-pin SCSI cable

Contact your place of purchase if an item is missing or damaged. Be sure to retain your proof of purchase and packing material. They might be required to receive warranty service.

Installing the Drive in IBM Servers

The tape drive is compatible with the Netfinity 7000, Netfinity 5500, and PC Server 704 servers. For instructions on installing the tape drive in a server, go to the "Installing Internal Drives" section in the server's *User's Handbook* and follow the directions for "Installing a 5.25-inch Removable-Media Drive."

> **Note:** The server *User's Handbook* instructions refer specifically to installing a half-high drive in a single bay in the server. Your tape drive is a full-high drive and must be installed in **both** drive bays in the server.

Backup and Restore Server Software

The 35/70 GB DLT Internal Tape Drive includes a backup application CD for IBM servers. This CD includes the following applications that support the tape drive:

- Seagate Backup Exec Version 6.11 (or later) for Microsoft Windows NT
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The CD also contains backup applications that are used with other products but are not applicable to the 35/70 GB DLT Internal Tape

[7] *GB equals approximately 1 000 000 000 bytes.*

Drive. Other supported tape drive configurations can be found on the IBM Server Compatibility Web page at http://www.pc.ibm.com/us/compat.

If you have questions or problems with your backup application CD, contact Seagate Software, Inc. at 1-800-SEAGATE.

Installing the Drive in Other Computers

Selecting a SCSI ID

All devices attached to a SCSI adapter must have a unique SCSI identification number (ID). Usually, your PC or SCSI adapter comes with a configuration program that lets you see which SCSI IDs are in use. Refer to the documentation that comes with your adapter or computer for more information. Otherwise, you might need to physically inspect each device to identify its SCSI ID.

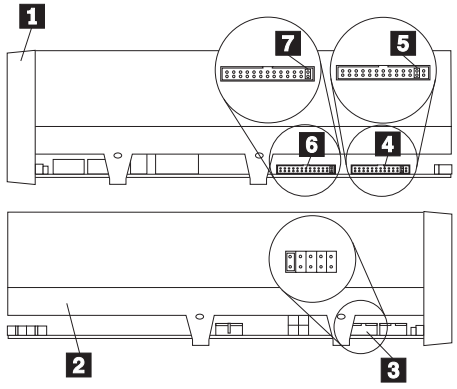
Select a SCSI ID from 0 to 15 for the tape drive. The SCSI ID must be supported by your SCSI adapter. The tape drive is shipped with the SCSI ID preset to 5. If you decide to change the preset ID, give the tape drive a low priority address (0, 1, 2, etc.), because disk drives need the higher priority. Do not assign an ID of 7, because this is normally used by the SCSI adapter.

Installation Instructions

Follow these instructions to install your tape drive:

1. Turn off all attached devices. Turn off the computer. Unplug the power cords for the computer and all attached devices; then open the computer.
2. Before opening the static-protective bag containing the tape drive, touch the bag to an unpainted metal surface on the computer for at least two seconds. Remove the drive from the static-protective bag. If you must put the drive down, place the drive on the static-protective bag. Do not touch any exposed components on the drive.

   The following illustration shows the location of the configuration jumper blocks.



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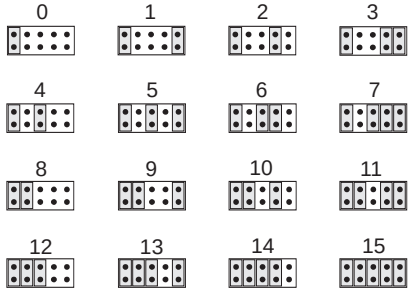
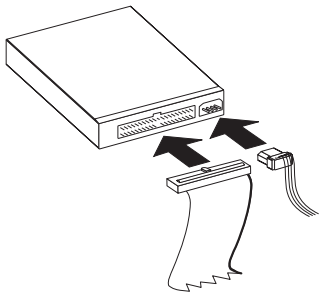


6. Mount the tape drive in either a horizontal or vertical position. The drive has one set of mounting holes that fit a standard 5.25-inch drive bay. Insert each of the screws through a drive-bay mounting hole into a threaded screw hole on the tape drive; then tighten with a screwdriver. If space is limited, you might need to attach the SCSI and power cables before mounting the drive.
7. To install the cables, refer to the following view of the back of the tape drive.



When you connect SCSI drives to the SCSI adapter, start with the SCSI connector on the cable that is farthest from the adapter. Then, with each additional device, work your way in from the far end back towards the adapter. Connecting the devices in this order ensures better signal quality. Connect the SCSI cable to the tape drive. Connect the power cable to the power connector.

8. Replace the computer cover. Reconnect the power cord and any other signal cables. Turn on all attached devices; then turn on the computer. Ensure that the appropriate advanced SCSI

programming interface (ASPI) device drivers are installed to support the tape drive. These device drivers are usually provided with the SCSI adapter. You might need to reconfigure your SCSI adapter. See the documentation that comes with your computer or adapter.

9. When the tape drive receives power from the computer, it does a power-on self-test (POST) within 15 seconds, and is ready to use.

   If all the indicators on either side of the tape drive blink in unison, there is a problem with the tape drive. Press the **Unload** button to eject any tape that might be inserted and to reset the drive. If the problem persists, power off the system; then turn the power back on. If the problem continues, see "Solving Problems" on page 2-12 for further steps.

10. In order to use the drive, you must install the appropriate backup and restore software for your computer's operating system. For more information, refer to the documentation that comes with your computer. If you are installing the drive in an IBM server, you must use the backup application CD provided in your option package. See "Backup and Restore Server Software" on page 1-31 for supported software packages for servers. Follow the installation and operating instructions included with your software to begin using the tape drive.

Using the Drive

The following section contains instructions for using your tape drive. For more detailed information, see "Using the Drive" on page 2-7.

Important: If you power on the drive with a tape inserted and the handle unlatched, it might damage the tape or drive.

Loading a Tape

1. Be sure the Operate Handle indicator (green) is on.
2. Lift the Cartridge Insert/Release handle.
3. Insert the cartridge into the tape drive.
4. Push the Cartridge Insert/Release handle down.

Unloading a Tape

1. Push the **Unload** button.
2. Wait for the Operate Handle indicator (green) to light.
3. Lift the Cartridge Insert/Release handle.
4. Remove the cartridge.
5. Push the Cartridge Insert/Release handle down.

Cleaning the Drive

When the Use Cleaning Tape indicator lights:

1. Make sure the drive does not have a data tape loaded.
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3. Wait for the tape drive to beep.
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Write-Protecting a Tape

The write-protect switch is located on the front of the tape cartridge. (See the illustration on page 2-9.) A window on the switch shows an orange square when the tape is write-protected. You can change write protection while the tape is inserted in the drive.

Selecting Tape Recording Capacity

For writing data, use only the IBM Data Cartridge (part: 59H3040), or DLTtape IV, DLTtape IIIxt, or DLTtape III cartridges. The tape cartridge you choose affects your choices in recording capacity. The IBM Data Cartridge and DLTtape IV Cartridge support the highest performance and storage capacities.

1. Insert a tape cartridge.
2. Wait for tape motion to stop and the Tape in Use indicator to light steady.
3. Press the **Select** button.
4. Wait for the Density Override light to come on.
5. Press the **Select** button until the light next to the capacity you want is flashing.
6. Start your backup software.

Note: Your choice of capacities is limited by the data cartridge you use. See the table on page 3-12.

Resetting the tape drive

Press the **Unload** button to reset the tape drive.

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.pc.ibm.com/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.

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: User's Guide

Introduction

The 35/70 GB[8] DLT Internal Tape Drive is a high-capacity, fast/wide SCSI-2 tape drive for backing up and restoring data, and archiving files. These files can include multimedia, imaging, transaction processing, large databases, and other storage-intensive applications.

Tape cartridges can each store up to 35 GB of data at a transfer rate of up to 5 MB[9] per second. Depending on the data content, using data compression lets you store up to 70 GB on a cartridge at a transfer rate of up to 10 MB per second.

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

- 35/70 GB DLT Internal Tape Drive
- Data cartridge
- Four mounting screws
- Jumpers
- Backup application CD
- Warranty registration card
- 68-pin SCSI cable

Before You Begin

Installation Requirements

To install this drive, you must have the following:

- Single-ended SCSI host adapter meeting the SCSI-2 fast/wide standards.
- Documentation for your computer, SCSI bus adapter, or external enclosure.
- A single-ended fast/wide (16-bit) SCSI active, inline terminator (IBM 92F0322 or equivalent) if the drive ends the SCSI bus. (Optionally, put a hard disk drive at the end of the SCSI bus to terminate the bus. Disk drives typically have switchable active termination built in.)
- Phillips head and flat blade screwdrivers for the mounting screws, and opening your PC.
- Flat-nose pliers to install and remove jumpers (optional).

8 *GB equals approximately 1 000 000 000 bytes.*

9 *MB equals approximately 1 000 000 bytes.*

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- AMP 1-111623-7-7 cable to make the connection to the SCSI ID jumper block (if you are using a remote switch on a storage enclosure to set the SCSI ID).

Backup and Restore Server Software

The 35/70 GB DLT Internal Tape Drive includes a backup application CD. This CD includes several applications that support the tape drive:

- Seagate Backup Exec Version 6.0 Revision 90 for Microsoft Windows NT
- Seagate Backup Exec Version 7.01b for Novell NetWare

The CD also contains backup applications not applicable to the 35/70 GB DLT Internal Tape Drive. Other supported configurations can be found on the IBM Server Compatibility Web page (http://www.pc.ibm.com/compat/compat.html), or the Quantum DLT-7000 compatibility web page (http://www.quantum.com/products/dlt/tdmatrix).

Selecting a SCSI ID

Each device on a SCSI bus must have its own unique SCSI ID. You can select a SCSI ID from 0 to 15 for the tape drive. The SCSI ID must be supported by your SCSI adapter. Refer to your SCSI adapter documentation for the range and the relative priority of the IDs supported. The tape drive is shipped with the SCSI ID preset to 5.

Follow these guidelines to select a SCSI ID:

- Assign the tape drive to one of the lower priority IDs available (0-6).
- Assign the higher priority ID numbers (8-15) to those devices that are most often used or are faster than other devices in the chain.
- Do not assign an ID of 7 because this is normally used by the SCSI adapter.

Depending on your computer, there are several ways to view your current SCSI ID settings:

- For many IBM computers, press F1 during the startup, after the memory check completes. Other systems show SCSI settings when you press **Ctrl+A**. Micro Channel systems use a reference diskette or **Ctrl+Alt+Insert** during boot-up. Check the documentation that comes with your PC or SCSI adapter to be sure.
- Use SCSI adapter utility programs, if available.
- Inspect the installed SCSI devices to see how the IDs are set.

For more information, refer to the documentation that comes with your computer or SCSI adapter.

Installing the Drive

Step 1. Preparing for Installation

To prepare for installation:

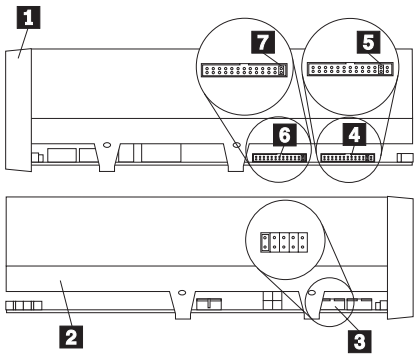
1. Turn off all attached devices. Turn off the computer. Unplug the power cords for the computer and all attached devices; then open the computer. For specific information on opening your computer refer to the documentation that comes with your computer.

> **Attention:** Tape drives are sensitive to static electricity discharge. The drives are wrapped in a static-protective bag to prevent damage.

2. Before opening the static-protective bag containing the tape drive, touch the bag to an unpainted metal surface on the computer for at least two seconds. Remove the drive from the static-protective bag. If you must put the drive down, place the drive on the static-protective bag. Do not touch any exposed components on the tape drive.

Step 2. Setting the SCSI ID, Termination, and Parity

Follow the illustration below to locate the SCSI configuration jumper blocks.



1 Right side view
2 Left side view
3 SCSI ID jumper block
4 SCSI termination power jumper block
5 SCSI termination power jumper
6 SCSI parity jumper block
7 SCSI parity disable jumper

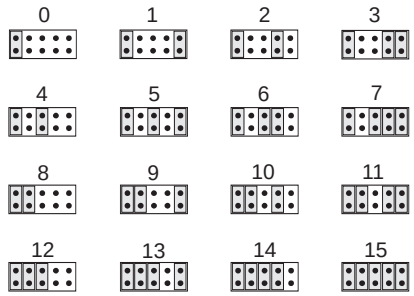
If the tape drive is the last device on the SCSI bus, it must terminate the bus, and provide power. Be sure there is a jumper in position 5 on jumper block 4. Attach a fast/wide inline, active terminator to the SCSI connector on the drive. (Optionally, put a hard disk drive at

the end of the SCSI cable to terminate the bus. Disk drives typically have a switchable active termination built in.)

If you install the tape drive in an external storage enclosure and the enclosure is at the end of the SCSI bus, refer to your enclosure documentation for information on termination.

Review the information that comes with your computer. If your system does not generate parity, be sure to disable parity checking by adding a jumper in position **7** on the parity jumper block **6**.

If you choose the default SCSI address of 5, proceed to the next step. You must install a jumper in the leftmost position of the SCSI ID jumper block to use the jumper block **3** to set your SCSI ID. Use the large jumpers which came with your tape drive. Remove and reposition jumpers to set the ID. If necessary, use a pair of flat-nose pliers to remove the jumpers. The following illustration shows how to set the jumper block for each ID.

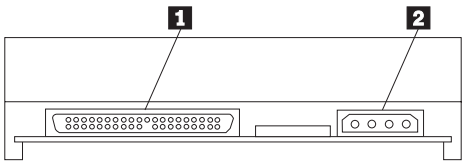


Step 3. Mounting the Drive

Mount the tape drive and then attach the signal and power cables to it. If there is insufficient working space to attach the connectors after mounting the drive, attach the cables first. To mount the drive:

1. Locate an available 5.25-inch bay in your computer to mount the tape drive. The drive can be mounted in either a horizontal or vertical position. Remove the cover plate from the bay selected.
2. Align the drive-bay screw holes with the threaded holes in the drive housing. When mounting the tape drive, follow these guidelines:
   - Ensure that no objects such as screw heads, cables, or adjacent devices are pressing against the frame.
   - Ensure no obstruction blocks the ventilation slots on the bottom and behind the tape drive.
3. Insert a screw through each of the drive-bay holes into the threaded holes in the drive and tighten with a screwdriver. Use only the screws that come with the tape drive. Other screws might be too long and cause electrical shorts.

Step 4. Connecting Cables



The rear tape drive connections are:

1 SCSI connector
2 Power connector

To attach the SCSI and power cables to the tape drive:

1. Locate the SCSI cable (usually a 68-pin ribbon cable with one end connected to the SCSI adapter) and find the next available connector that is farthest from the adapter. Use all empty bus connectors beginning with the one farthest from the adapter to ensure better signal quality.

Note: The SCSI adapter can be part of the computer system board or can be an adapter installed in an expansion slot.

2. Attach the SCSI cable to the tape drive SCSI connector **1**. The fast/wide SCSI connector will only attach to the drive one way. Do not force the cable onto the drive.

Attention: Do not force the power cable into the tape drive power connector. If the power cable is upside down and you force the connection, you might damage the drive.

3. Connect the power cable connector to the four-pin connector **2** on the tape drive as shown in the illustration on page 2-5. If all the power cables are used, purchase a DC Y-splitter cable at your computer dealer to add the tape drive.

Step 5. Completing the Installation

Check your work before closing the computer.

1. Be sure that the power and interface connectors are securely attached. Be sure that the cables are neatly routed.
2. Replace the computer cover and secure it in place. Reconnect the power cords and cables.

Step 6. Powering Up the Device

Turn on all attached devices; then press the **power switch** on your PC. The tape drive does a power-on self-test within 15 seconds and does a drive reset. Appendix B, “Power-On Self-Test (POST) Sequence” on page 3-11 has a detailed description of the self-test.

Step 7. Updating the Configuration

For most computers, the configuration-setup utility program automatically recognizes the new tape drive. However, you might have to answer questions about your system changes when you restart (boot) your computer.

Ensure that the appropriate advanced SCSI programming interface (ASPI) device drivers are installed to support the tape drive. Device drivers are usually provided with the SCSI adapter.

If your computer does not recognize the tape drive after startup or you receive startup errors, run the configuration-setup utility program as described in the documentation that comes with your computer.

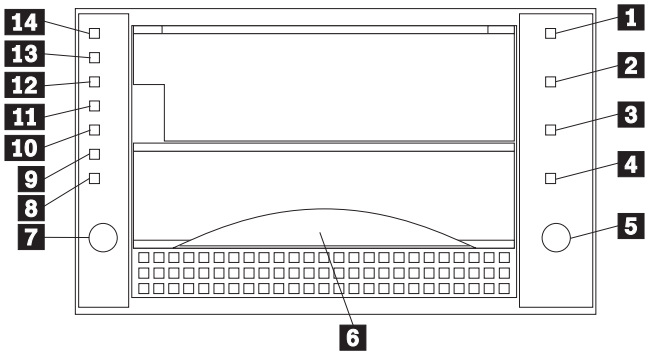
If your computer has Micro Channel architecture, you might have to update the computer configuration information when adding or removing a device.

Step 8. Installing Backup and Restore Software

You must install backup and restore software to use the drive. See “Backup and Restore Server Software” on page 2-2 for supported software packages. Follow the installation and operating instructions included with your software to begin using the tape drive.

Using the Drive

The illustration shows the drive front panel.



1 - **4** Status indicator lights
5 Unload button
6 Cartridge Insert/Release handle
7 Select button
8 Density Override indicator
9 Compress indicator
10 - **14** Capacity indicator lights

Understanding the Status Indicators

The indicator lights on the right side of the drive front panel are:

1 Write Protect indicator (orange): When this light is on, the tape is write-protected.

2 Tape in Use indicator (yellow): When this light is blinking, the tape is in motion. When this light is on, the tape is loaded and ready for use.

3 Use Cleaning Tape indicator (yellow): When this light is on, the drive head needs cleaning or the tape is damaged. Insert a cleaning cartridge as soon as possible. If the light stays on after you unload the cleaning cartridge, replace the cartridge. Cleaning tapes are good for approximately 20 uses. If the light turns on when you load a data cartridge after a cleaning cartridge, it indicates the data cartridge is damaged. If the light turns on with different cartridges, have the tape drive repaired.

4 Operate Handle indicator (green): When the light is on, you can lift the Cartridge Insert/Release handle. If the light is blinking, push the handle down and wait for the light to turn solid green.

Using the Controls

5 Unload button: Press this button to unload a tape or to reset the tape drive.

6 Cartridge Insert/Release handle: Lift this handle to insert or remove a cartridge when the Operate Handle indicator is lit.

7 Select button: When the Density Override indicator **8** is flashing, you can press this button to cycle through tape capacity options.

Reading the Capacity Indicators

The lights on the left side of the front panel indicate current tape cartridge capacity in gigabytes, as well as any change in capacity you have requested. The type of data cartridge you use determines the capacities available for your selection. See the "Maximum Data Capacity" table on page 3-12 for more details. Tape capacity cannot be changed in mid-tape. The tape must be rewritten from the beginning.

8 Density Override (yellow): When this light is on, it indicates you used the Select button to change tape capacity.

9 Compress (yellow): When this light is on, data compression is enabled. (Available in 10, 15, 20, and 35 GB densities only.)

10 35.0 (yellow): When this light is on, the tape is recorded at 35.0 GB capacity. When this light is blinking, it indicates you requested this capacity.

11 20.0 (yellow): When this light is on, the tape is recorded at 20.0 GB capacity. When this light is blinking, it indicates you requested this capacity.

12 10.0/15.0 (yellow): When this light is on, the tape is recorded at 10.0 or 15.0 GB capacity. When this light is blinking, it indicates you requested this capacity.

13 6.0 (yellow): When this light is on, the tape is recorded at 6.0 GB capacity. When this light is blinking, it indicates you requested this capacity.

14 2.6 (yellow): When this light is on, the tape is recorded at 2.6 GB capacity. When this light is blinking, it indicates you requested this capacity.

If all the indicator lights flash in unison, it indicates a hardware failure in your tape drive. Try to reset the drive to correct the problem.

Selecting Data Cartridges

For writing data, use only DLT data cartridges. Any of the following data cartridges are acceptable and require no formatting or other media conditioning before use. For maximum data rate and storage capacities, use the IBM Data Cartridge (part: 59H3040) and DLTtape IV Cartridge.

- IBM Data Cartridge (part: 59H3040) - 35 GB capacity (70 GB compressed)
- DLTtape III - 10 GB capacity (20 GB compressed)
- DLTtape IIIxt - 15 GB capacity (30 GB compressed)
- DLTtape IV - 35 GB capacity (70 GB compressed)

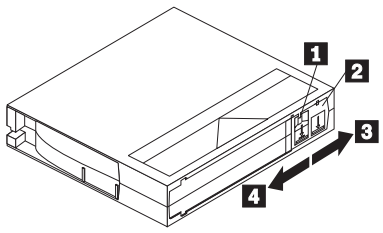
Selecting Recording Capacity

You might want to decrease tape capacity for compatibility with older tape drives, or increase capacity for better performance. Insert a tape cartridge, and wait for tape motion to stop and the Tape in Use indicator to light steady. The capacity indicators should show the current tape capacity. If they are not lit, it means the tape is blank.

Press the **Select** button to change density. When the Density Override indicator is blinking, you can press the **Select** button to change the recording capacity of the tape. Press the **Select** button until the desired capacity indicator is flashing. The indicator will continue flashing until the tape drive begins recording in the new capacity. Then the new capacity indicator lights steady, and the old capacity indicator turns off.

> **Note:** Your choice of capacities is limited by the data cartridge you use. See the table on page 3-12.

Setting Write-Protection



The front of the cartridge has an orange write-protect indicator **1**, and write-protect switch **2** to prevent accidental erasure. Slide the switch right to write-enable **3** or left to write-protect **4**. You can change the write-protect switch before or after inserting the tape. If you change the write-protect switch while the tape is inserted, there is a delay of a few seconds before the Write Protect indicator changes.

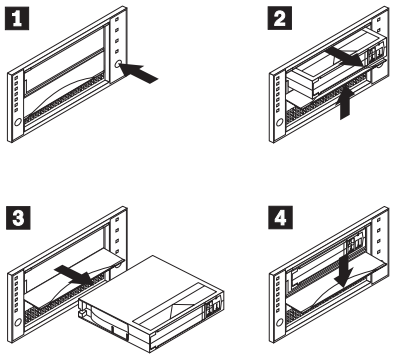
> **Note:** Your backup/restore software might also write-protect the cartridge.

Unloading and Loading Data Cartridges

> **Important:** If you power on the drive with a tape inserted and the handle unlatched, it might damage the tape or drive.

When the yellow Tape in Use indicator light is off and the green Operate Handle indicator is on, the tape drive is ready to accept a cartridge. If a cartridge is present during power-on self-test (POST) and the Cartridge Insert/Release handle is down, the tape drive will automatically load the tape once POST has completed.

To unload a cartridge:



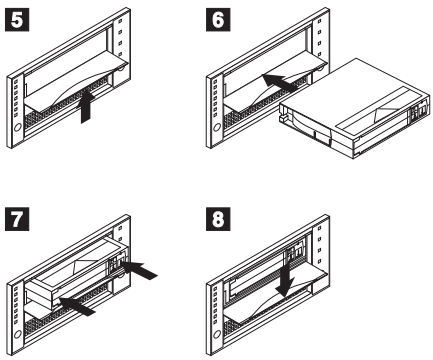
1. Press the **Unload** button and wait for the green Operate Handle indicator to light.
2. Lift the Cartridge Insert/Release handle up to pop the tape out.
3. Pull the tape out of the drive.
4. Push Cartridge Insert/Release handle down.

When you unload a cartridge, the tape drive:

- Completes any command in process
- Writes any buffered information to tape
- Rewinds the tape to the beginning
- Turns the green Operate Handle indicator on

If an error occurs before or during the unload procedure, the tape drive suspends the unload sequence. To clear the error, press the **Unload** button again.

To load a cartridge:



5. Lift the Cartridge Insert/Release handle. (Be sure the Operate Handle indicator is on.)
6. Position the cartridge with the write-protect switch facing you and to the right.
7. Insert the cartridge fully into the door.
8. Push the Cartridge Insert/Release handle down.

   The tape drive loads the tape in approximately 20 seconds. The green Operate Handle indicator turns off and the yellow Tape in Use indicator flashes to show the tape is rewinding to the

beginning. When the yellow Tape in Use indicator lights steady, the tape drive is ready for read and write operations.

Resetting the Drive

The reset procedure rewinds the tape and clears the buffer of previous tape drive commands and data. To reset the tape drive, press the **Unload** button, or power the PC off and back on again.

If you reset the tape drive while a cartridge is loaded, the tape rewinds to the beginning. The reset might take as long as two minutes if the tape is positioned near the end. After the drive has been reset, tape operation starts from the beginning of the data cartridge. After resetting the drive, restart your backup tape software.

Cleaning the Drive

When the Use Cleaning Tape indicator lights, the tape drive requires cleaning. Clean the drive as soon as possible.

To clean the tape drive, insert an IBM Cleaning Cartridge (part: 59H3092) or DLT Cleaning Tape. When the cleaning is finished, the Use Cleaning Tape indicator turns off and the tape drive beeps. Press the **Unload** button and lift the Cartridge Insert/Release handle to remove the cleaning tape.

If the Use Cleaning Tape indicator does not turn off, your cleaning cartridge has expired. Each cleaning cartridge is good for only 20 uses. Replace it with a new cleaning cartridge and repeat the process.

If the Use Cleaning Tape indicator blinks while a data cartridge is in use, back up your data onto a new cartridge. Discard the original cartridge. It might be damaged.

If the Use Cleaning Tape indicator lights when any data cartridge is inserted, have your tape drive serviced.

Packing the Drive for Shipping

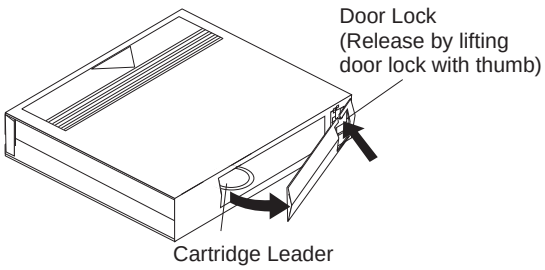
If you are shipping the tape drive to another location or returning it for repair, pack the tape drive in its original shipping container and packing materials.

Attention: To avoid damaging the tape drive and voiding your warranty, use the original shipping materials. If you are returning the tape drive for service, remove and keep all cartridges, cables, and terminators.

Solving Problems

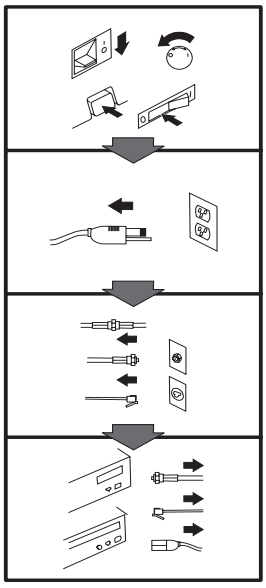
Computer problems can be caused by hardware, software, or user error. Using the information in this section, you might be able to solve such problems yourself or gather helpful information you can pass on to the service technician. Take the following actions:

1. Press the **Unload** button to reset the tape drive.
2. Power your system off, then on.
3. Check the drive to ensure that all power and signal cables are securely attached.
4. Make sure the length of all your SCSI cables does not exceed 3 meters (10 feet).
5. Make sure you used the screws that came with the tape drive. Other screws could be too long and cause electrical shorts or mechanical problems.
6. Make sure there are not more than 16 SCSI devices (including the adapter) on one bus.
7. Check the SCSI ID jumper setting. No two SCSI devices can have the same SCSI ID.
8. Check that the parity jumper setting is correct for your computer.
9. Check that each end of the SCSI bus is terminated. There must be one terminator or a terminating device at the last active connector on the SCSI cable.
10. Be sure there is a jumper in position **5** on jumper block **4** as shown in the illustration on page 2-3.
11. Remove the drive. Check for bent or misaligned pins. If there are no problems, reinstall the drive.
12. Reconfigure your SCSI adapter. You may need to remove and reinstall existing devices. Or you may need to change data transfer support from synchronous to asynchronous.
13. If you cannot manually change the tape capacity, check the table on page 3-12 to make sure the capacity you want is supported by the cartridge.
14. If the tape does not load, open the cartridge door by lifting up on the door lock with your thumb and pushing in. The leader should be visible as shown in the following illustration.



Part 3: Appendixes

Appendix A. Safety Information



To Disconnect:

⚠ **Danger:**

Electrical current from power, telephone, and communication cables is hazardous. To avoid shock hazard, disconnect cables as shown before opening the computer covers to install this product. The power cord must be used with a properly grounded outlet.

- Turn Everything OFF.
- First, remove power cord from outlet. (In the U.K., by law, the power cord must be disconnected after the telephone line cable.)
- Remove signal cables from receptacles.
- Remove all cables from devices.

Vor dem Entfernen der Anschlüsse:

⚠ **Vorsicht:**

Befolgen Sie die folgenden Schritte, um gesundheitliche Schäden durch stromführende Telefon- und Verbindungskabel auszuschließen. Um eine Berührungsspannung zu vermeiden, Kabel vor dem Öffnen der Computerabdeckungen bei der Installation dieses Produktes, wie abgebildet, herausziehen. Das Netzkabel darf nur an eine ordnungsgemäß geerdete Steckdose angeschlossen werden.

- Schalten Sie alle Geräte AUS.
- Ziehen Sie zuerst das Netzkabel aus der Steckdose.
- Entfernen Sie die Signalkabel von den Anschlußbuchsen.
- Entfernen Sie alle Kabel von den Geräten.

Précautions de déconnexion

⚠ **Danger:**

Le courant électrique des câbles électriques, téléphoniques et de communication est dangereux. Pour éviter tout risque d'électrocution, déconnectez les câbles comme indiqué avant d'ouvrir les capots de l'ordinateur pour installer ce produit. Il convient d'utiliser le câble d'alimentation avec une prise correctement raccordée à la terre.

- Eteignez tous les appareils.
- Débranchez tout d'abord le câble d'alimentation de la prise de courant. (Au Royaume-Uni, la législation exige que le câble d'alimentation soit débranché après le câble téléphonique).
- Débranchez les câbles de signalisation des prises femelles.
- Débranchez l'ensemble des câbles des périphériques.

Para desconectarse

⚠ **Peligro:**

La corriente eléctrica procedente de cables de alimentación, teléfono y comunicaciones es peligrosa. Para evitar descargas eléctricas, desconecte los cables tal y como se muestra y abra las cubiertas del ordenador antes de instalar este producto. El cable de alimentación debe utilizarse con una toma debidamente conectada a tierra.

- Desconecte todo.
- En primer lugar, retire el cable de alimentación de la toma.(En el Reino Unido, la legislación determina que el cable de alimentación se desconecte después del cable de línea telefónica.)
- Retire los cables de señal de los receptáculos correspondientes.
- Retire todos los cables de los dispositivos.

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取外し時：

⚠危険：
電源、電話及び通信ケーブルからの電流は危険なものです。電気ショックの危険を避けるために、この製品をインストールするためにコンピューターのカバーを取外す前に、次の順序でケーブルを取外してください。

- すべての電源を切ってください。
- 始めにコンセントから電源コードを取外してください。
- コネクターから通信ケーブルを取外してください。
- 装置から全てのケーブルを取外してください。

Per scollegare:

⚠ **Pericolo:**

La corrente elettrica che attraversa i cavi di alimentazione, i cavi telefonici e i cavi per le comunicazioni è pericolosa. Per evitare il rischio di scosse elettriche, prima di procedere all'apertura del coperchio dell'elaboratore per installare il dispositivo, scollegare i cavi nel modo qui indicato. Il cavo di alimentazione deve essere inserito in una presa elettrica collegata correttamente a terra.

- Spegnere tutto (posizione OFF).
- Innanzitutto, scollegare il cavo di alimentazione dalla presa. (nel Regno Unito, per disposizione di legge, è obbligatorio scollegare il cavo di alimentazione dopo aver scollegato il cavo telefonico).
- Scollegare i cavi di segnale dai connettori.
- Scollegare tutti i cavi dai dispositivi.

Para desligar

⚠ **Perigo:**

A corrente elétrica da unidade de alimentação, do telefone e dos cabos de comunicação é perigosa. Para evitar o risco de choques elétricos, desligue os cabos de acordo com as instruções relativas à instalação antes de abrir as tampas do computador para instalar este produto. O cabo de alimentação deve ser usado numa tomada devidamente ligada à terra.

- Desligue tudo
- Primeiro remova o cabo de alimentação da tomada. (De acordo com as leis do Reino Unido, o cabo de alimentação deve ser desligado depois do cabo da linha telefônica.)
- Remova os cabos de sinal dos receptáculos.
- Remova todos os cabos dos dispositivos.

Odpojení:

⚠ **Výstraha:**

Elektrický proud ze sit'ových, telefonnich a komunikačních kabelů je nebezpečný. Abyste při instalaci tohoto výrobku předešli úrazu elektrickým proudem, před otevřením krytů počítače odpojte kabely dle obrázku. Sit'ový kabel musí být použit s řádně uzemněnou zásuvkou.

- Vypněte všechna připojená zařízení.
- Najdříve odpojte sit'ový kabel ze zásuvky. (Ve Spojeném království musí být podle zákona sit'ový kabel odpojen až po odpojení telefonní přípojky).
- Odpojte signálové kabely.
- Odpojte všechny kabely perifernich zařízení.

Læs følgende inden frakobling:

⚠ **Fare:**

Elektrisk strøm fra strømførende kabler og telefon- og kommunikationskabler er farlig. For at undgå elektrisk stød skal du sørge for at koble kablerne fra som vist, før du åbner computerens dæksler for at installere dette produkt. Den strømførende ledning skal tilsluttes en javdet stikkantakt.

- SLUK for alt.
- Fjern først den strømførende ledning fra stikkantateten. (I Storbritannien skal den strømførende ledning frakobles efter telefonkablet iflg. lov).
- Fjern signalkabler fra kontakter.
- Fjern alle kabler fra enheder.

Ontkoppelen

⚠ **Gevaarlijk:**

Elektrische stroom afkomstig uit netsnoeren, telefoonkabels en communicatiekabels kan gevaarlijk zijn. Als u dit produkt wilt installeren, moet u, ter voorkoming van elektrische schokken, voordat u de computer openmaakt de kabels, zoals afgebeeld, ontkoppelen. Sluit het netsnoer altijd aan op een geaard stopcontact.

- Zet alles UIT.
- Haal eerst de stekker uit het stopcontact. (In het Verenigd Koninkrijk bent u wettelijk verplicht eerst de telefoonkabel en pas dan het netsnoer los te maken.)
- Haal de signaalkabels uit de ingangen.
- Verwijder alle kabels van de apparaten.

Pour déconnecter

⚠ **Danger:**

Le courant électrique des câbles électriques, téléphoniques et de communication est dangereux. Pour éviter tout risque d'électrocution lors de l'installation de ce produit, déconnectez les câbles tel que montré avant d'ouvrir les couvercles de l'ordinateur. Utilisez le câble d'alimentation avec une prise correctement raccordée à la terre.

- Éteignez tous les appareils.
- Débranchez d'abord le câble d'alimentation de la prise de courant. (Au Royaume-Uni, la réglementation exige que le câble d'alimentation soit débranché après le câble téléphonique.)
- Débranchez les câbles de transmission du signal des prises femelles.
- Débranchez tous les câbles des appareils.

Irrota laite seuraavasti:

⚠ **Vaara:**

Virta-, puhelin- ja tietoliikennejohdoissa liikkuva sähkövirta on vaarallista. Voit tätä laitetta asentaessasi välttää sähköiskut irrottamalla johtimet esitetyllä tavalla ennen tietokoneen kansien avaamista. Virtajohto on liitettävä oikein maadoitettuun pistorasiaan.

- Katkaise kaikista laitteista virta.
- Irrota virtajohto pistorasiasta. (Yhdistyneiden Kuningaskuntien lain mukaan virtajohto on irrotettava ennen puhelinjohdon irrottamista.)
- Irrota signaalikaapelit vastakkeista.
- Irrota kaikki johdot laitteista.

כדי לנתק:

⚠ **סכנה:**

זרם חשמלי מכבלי כח, טלפון ותקשורת מהווה סכנה. כדי למנוע התחשמלות, נתק את הכבלים לפי האיור לפני פתיחת מארז המחשב לשם התקנת מכשיר זה. את כבל החשמל יש לחבר לשקע מוארק כראוי.

- כבה את כל המפסקים.
- נתק תחילה את כבל החשמל מהשקע (בבריטניה החוק דורש לנתק את כבל החשמל אחרי כבל הטלפון).
- נתק את כבלי האותות משקעיהם.
- נתק את כל הכבלים מההתקנים השונים.

Szétcsatlakoztatás

⚠ **Balesetveszély:**

A hálózati, telefon és kommunikációs kábelben levő elektromos áram veszélyes. Az áramütés veszélyének elhárítása érdekében, a termék beszerelésekor, a számítógép burkolatának felnyitása előtt húzza ki a vezetékeket. A hálózati vezetéknek megfelelően földeltnek kell lennie.

- Kapcsoljon mindent KI.
- Először a hálózati vezetéket húzza ki az aljzatból. (Az Egyesült Királyságban előírás, hogy a hálózati vezetéket a telefonvezeték után kell szétosatlakoztatni.)
- Húzza ki a jel-kábelt az aljzatából.
- Húzza ki az összes vezetéket a berendezésekből.

차단하려면 :

⚠위험 :

전원, 전화, 통신 케이블에서 나오는 전류는 유해하다. 쇼크 위험을 없애려면 본 제품 설치를 위해 컴퓨터 뚜껑을 열기 전에 케이블을 차단한다. 전원 코드는 제대로 접지된 콘덴사와 사용돼야 한다.

- 모든 전원을 차단한다.
- 우선 콘덴사에서 전원 코드를 뺀다. (영국에서는 법으로, 전화선을 뺀 다음 전원 코드를 차단해야 한다.)
- 수신기로 부터 신축 케이블을 뺀다.
- 컴퓨터 장치에서 모든 케이블을 뺀다.

Frakobling

⚠ Fare:

Elektrisk strøm fra strøm -, telefon - og kommunikasjonskabler er farlig. For å unngå fare for støt, må du koble fra kabler, som vist, før du åpner datamaskindeksler for å installere dette produktet. Strømledningen må kun brukes i jordede stikkontakter.

- Slå alt AV.
- Trekk først ut strømledningen fra stikkontakten. (I Storbritannia sier loven at strømledningen må kobles fra etter telefonledningen.)
- Trekk ut signalkablene fra kontaktene.
- Trekk ut alle kablene fra enhetene.

Aby rozłączyć:

⚠ Ostrzeżenie:

Prąd elektryczny obecny w kablach zasilania, telefonicznych lub komunikacyjnych jest niebezpieczny. Aby uniknąć niebezpieczeństwa porażenia, przed otwarciem pokrywy komputera w celu zainstalowania tego wyrobu, należy odłączyć kable, jak to zostało pokazane. Musi być użyty przewód zasilania elektrycznego z odpowiednim uziemieniem.

- Wyłącz wszystko (położenie OFF).
- W pierwszej kolejnoci odłącz przewód zasilania elektrycznego z gniazdka. (W Wielkiej Brytanii prawo nakazuje, by przewód zasilania został odłączony po kablu linii telefonicznej).
- Wyłącz kable sygnałowe z gniazdek.
- Wyłącz wszystkie kable z urządzeń.

Para desligar:

⚠ Perigo:

A corrente eléctrica da unidade de alimentação, do telefone e dos cabos de comunicação é perigosa. Para evitar o risco de choques eléctricos, desligue o cabo de acordo com as indicações antes de abrir a caixa do computador para instalar este produto. O cabo de alimentação deve ser utilizado numa tomada devidamente ligada à terra.

- Desligue tudo.
- Primeiro, retire o cabo de alimentação da tomada.(De acordo com as leis do Reino Unido, o cabo de alimentação deve ser desligado depois do cabo da linha telefónica.)
- Retire os cabos de sinal das tomadas.
- Retire todos os cabos dos dispositivos.

斷開步驟 :

⚠危險 :

動力電纜、電話電纜和通信電纜上的電流是危險的。爲避免電擊危險，在打開電腦機蓋安裝本產品之前斷開電纜，如圖所示。動力電纜必須妥善接地。

- 關掉一切電源。
- 首先將動力電纜從輸出端取下。(根據英國法律規定，動力電纜必須在電話電纜之後斷開。)
- 從插座上取下信號電纜。
- 從裝置上取下所有電纜。

Izključenje:

⚠ **Nevarnost:**

Struja iz električnega, telefonskega ali komunikacijskega voda je nevarna. V namenu, da se izognete šoku, izključite vode, kot kaže slika, preden dvignete računalniške pokrove, da bi napravo instalirali. Strujni vod je treba uporabljati s primerno ozemljitvijo.

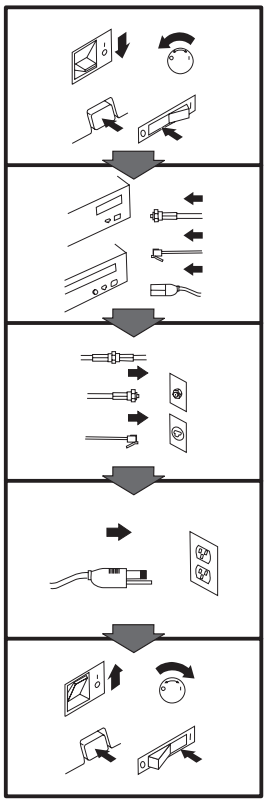
- Izključite vse (na “OFF”).
- Najprej odstranite strujni vod iz izhodnega vtikališča. (V Veliki Britaniji je po zakonu treba strujni vod izključiti po telefonskem vodu).
- Odstranite signalne vode iz sprejemnikov.
- Odstranite vse vode iz naprav.

Urkoppling

⚠ **Fara:**

Ström från el-, tele- och kommunikationskablar måste behandlas med försiktighet. För att undvika att få en elektrisk stöt måste du innan du öppnar höljet på datorn koppla ur kablarna enligt beskrivningen nedan. Strömkabeln måste alltid användas i ett jordat uttag.

- Stäng av allting.
- Ta först ur strömkabeln från strömuttaget. (I Storbritannien måste enligt lag strömkabeln tas ur efter telefonkabeln.)
- Ta bort signalkablarna från uttagen.
- Ta bort alla kablarna från enheterna.



To Connect:

⚠ Danger:

Electrical current from power, telephone, and communication cables is hazardous. To avoid shock hazard, connect cables as shown after closing the computer covers. The power cord must be used with a properly grounded outlet.

- Turn everything OFF.
- Attach all cables to devices. (In the U.K., by law, the telephone cable must be connected after the power cord.)
- Attach signal cables to receptacles.
- Attach power cord to outlet.
- Turn device ON.

Vor dem Anschließen:

⚠ Vorsicht:

Befolgen Sie die folgenden Schritte, um gesundheitliche Schäden durch stromführende Telefon- und Verbindungskabel auszuschließen. Um eine Berührungsspannung zu vermeiden, Kabel nach dem Schließen der Computerabdeckungen, wie abgebildet, anschließen. Das Netzkabel darf nur an eine ordnungsgemäß geerdete Steckdose angeschlossen werden.

- Schalten Sie alle Geräte AUS.
- Schließen Sie alle Kabel an die Geräte an.
- Schließen Sie die Signalkabel an die dafür vorgesehenen Anschlußbuchsen an.
- Verbinden Sie das Netzkabel mit der Steckdose.
- Schalten Sie das Gerät EIN.

Avant de vous connecter

⚠ Danger:

Le courant électrique des câbles électriques, téléphoniques et de communication est dangereux. Pour éviter tout risque d'électrocution, connectez les câbles comme indiqué après avoir replacé les capots de l'ordinateur. Il convient d'utiliser le câble d'alimentation avec une prise correctement raccordée à la terre.

- Mettez tous les appareils hors tension.
- Raccordez l'ensemble des câbles aux périphériques. (Au Royaume-Uni, la législation exige que le câble téléphonique soit branché après le câble d'alimentation).
- Raccordez les câbles de signalisation aux prises femelles.
- Raccordez le câble d'alimentation à la prise de courant.
- Mettez les appareils sous tension.

Para conectarse

⚠ Peligro:

La corriente eléctrica procedente de cables de alimentación, teléfono y comunicaciones es peligrosa. Para evitar descargas eléctricas, conecte los cables tal y como se muestra después de cerrar las cubiertas del ordenador. El cable de alimentación debe utilizarse con una toma debidamente conectada a tierra.

- Desconecte todo.
- Conecte todos los cables a los dispositivos. (En el Reino Unido, la legislación determina que el cable de teléfono se conecte después del cable de alimentación.)
- Conecte los cables de señal de los receptáculos correspondientes.
- Conecte el cable de alimentación a una toma.
- Active el dispositivo.

接続時：

⚠ 危険：

電源、電話及び通信ケーブルからの電流は危険なものです。電気ショックの危険を避けるために、コンピューターのカバーを取り付け後に、次の順序でケーブルを接続してください。

- すべての電源を切ってください。
- すべてのケーブルを装置に接続してください。
- コネクターに通信ケーブルを接続してください。
- コンセントに電源コードを接続してください。
- 装置の電源を入れてください。

Per collegare:

⚠ **Pericolo**

La corrente elettrica che attraversa i cavi di alimentazione, i cavi telefonici e i cavi per le comunicazioni è pericolosa. Per evitare il rischio di scosse elettriche, collegare i cavi nel modo qui indicato solo dopo aver richiuso l'elaboratore con il coperchio. Il cavo di alimentazione deve essere inserito in una presa elettrica collegata correttamente a terra.

- Spegnere tutto (posizione OFF).
- Collegare tutti i cavi ai dispositivi. (nel Regno Unito, per disposizione di legge, è obbligatorio collegare il cavo telefonico dopo aver collegato il cavo di alimentazione).
- Collegare i cavi di segnale agli appositi connettori.
- Collegare il cavo di alimentazione a una presa elettrica
- Accendere la periferica (posizione ON)

Para ligar:

⚠ **Perigo:**

A corrente elétrica da unidade de alimentação, do telefone e dos cabos de comunicação é perigosa. Para evitar o risco de choques elétricos, ligue os cabos de acordo com as instruções relativas à instalação depois de fechar as tampas do computador. O cabo de alimentação deve ser usado numa tomada devidamente ligada à terra.

- Desligue tudo
- Ligue os cabos aos dispositivos. (De acordo com as leis do Reino Unido, o cabo de alimentação deve ser desligado depois do cabo da linha telefônica.)
- Ligue os cabos de sinal aos receptáculos.
- Ligue o cabo de alimentação à tomada.
- Ligue o dispositivo.

Připojení:

⚠ **Výstraha:**

Elektrický proud ze sit'ových, telefonních a komunikačních kabelů je nebezpečný. Abyste předešli úrazu elektrickým proudem, kabely dle obrázku připojte až po uzavření krytů počítače. Sit'ový kabel musí být použit s řádně uzemněnou zásuvkou.

- Vypněte všechna zařízení.
- Připojte všechny kabely periferních zařízení. (Ve Spojeném království musí být podle zákona telefonní přípojka připojena až po přípojení sit'ového kabelu).
- Připojte signálové kabely.
- Připojte sit'ový kabel do zásuvky.
- Zapněte přístroj.

Læs følgende inden tilkobling:

⚠ **Fare:**

Elektrisk strøm fra strømførende kabler og telefon- og kommunikationskabler er farlig. For at undgå elektrisk stød skal du sørge for at koble kablerne til som vist, før du lukker computerens dæksler igen. Den strømførende ledning skal tilsluttes en javdet stikkantakt.

- SLUK for alt.
- Tilslut alle kabler til enheder. (I Storbritannien skal telefonkablet tilsluttes efter den strømførende ledning iflg. lov).
- Tilslut signalkabler til kontakter.
- Tilslut den strømførende ledning til stikkontakten.
- TÆND for enheden.

Aansluiten

⚠ **Gevaarlijk:**

Elektrische stroom afkomstig uit netsnoeren, telefoonkabels en communicatiekabels kan gevaarlijk zijn. Ter voorkoming van elektrische schokken, moet u nadat de computer dichtgemaakt is de kabels, zoals afgebeeld, aansluiten. Sluit het netsnoer altijd aan op een geaard stopcontact.

- Zet alles UIT.
- Bevestig de snoeren aan de apparaten. (In het Verenigd Koninkrijk bent u wettelijk verplicht eerst het netsnoer en pas dan de telefoonkabel aan te sluiten.)
- Bevestig de signaalkabels in de juiste ingangen.
- Steek de stekker van het netsnoer in het stopcontact.
- Zet het apparaat AAN.

Pour connecter

⚠ **Danger:**

Le courant électrique des câbles électriques, téléphoniques et de communication est dangereux. Pour éviter tout risque d'électrocution, connectez les câbles tel que montré après avoir fermé les couvercles de l'ordinateur. Utilisez le câble d'alimentation avec une prise correctement raccordée à la terre.

- Mettez tous les appareils hors tension.
- Raccordez tous les câbles aux appareils. (Au Royaume-Uni, la réglementation exige que le câble téléphonique soit branché après le câble d'alimentation.)
- Raccordez les câbles de transmission du signal aux prises femelles.
- Raccordez le câble d'alimentation à la prise de courant.
- Mettez l'appareil sous tension.

Kytke seuraavasti:

⚠ **Vaara:**

Virta-, puhelin- ja tietoliikennejohdoissa liikkuva sähkövirta on vaarallista. Voit välttää sähköiskut liittämällä johdot esitetyllä tavalla, sen jälkeen kun olet sulkenut tietokoneen kannet. Virtajohto on liitettävä oikein maadoitettuun pistorasiaan.

- Katkaise kaikista laitteista virta.
- Liitä kaikki johdot laitteisiin. (Yhdistyneiden Kuningaskuntien lain mukaan virtajohto on liitettävä ennen puhelinjohdon irrottamista.)
- Liitä signaalikaapelit vastakkeisiin.
- Liitä virtajohto pistorasiaan.
- Kytke laitteeseen virta.

כדי לחבר:

⚠ **סכנה:**

זרם חשמלי מכבלי כח, טלפון ותקשורת מהווה סכנה. כדי למנוע התחשמלות, חבר את הכבלים לפי האיור אחרי סגירת מארז המחשב. את כבל החשמל יש לחבר לשקע מוארק כראוי.

- כבה את כל המפסקים.
- חבר את כל הכבלים להתקנים (בבריטניה החוק דורש לחבר את כבל הטלפון אחרי כבל החשמל).
- חבר את כבלי האותות לשקעיהם.
- חבר את כבל החשמל לשקע.
- הדלק את המכשיר.

Csatlakoztatás:

⚠ **Balesetveszély:**

A hálózati, telefon és kommunikációs kábelben levő elektromos áram veszélyes. Az áramütés veszélyének elhárítása érdekében csak a számítógép burkolatának bezárása után csatlakcztassa a vezetékeket. A hálózati vezetéknek megfelelően földeltnek kell lennie.

- Kapcsoljon mindent KI.
- Csatlakoztassa a vezetékeket a berendezésekhez. (Az Egyesült Királyságban előírás, hogy a telefonvezetéket a hálózati vezeték után kell csatlakoztatni.)
- Csatlakoztassa a jelkábelt az aljzatába.
- Csatlakoztassa a hálózati vezetéket az aljzatába.
- Kapcsolja BE a készüléket.

연결하려면 :

⚠위험 :

전원, 전화, 통신 케이블에서 나오는 전류는 유해하다. 쇼크 위험을 없애려면 본 제품 설치를 위해 컴퓨터 뚜껑을 닫은 후에 케이블을 연결한다. 전원 코드는 제대로 접지된 콘덴사와 사용돼야 한다.

- 모든 전원을 차단한다.
- 장치에 모든 케이블을 연결한다. (영국에서는 법으로, 전화선을 먼저 연결한 다음 전원코드를 연결해야 한다.)
- 수신기에 신호 케이블을 연결한다.
- 콘덴사에 전원 코드를 연결한다.
- 컴퓨터 장치를 켠다.

Tilkobling

⚠ Fare:

Elektrisk strøm fra strøm -, telefon - og kommunikasjonskabler er farlig. For å unngå fare for støt, må du koble til kabler, som vist, etter at datamaskindekslene er lukket. Strømledningen må kun brukes i jordede stikkontakter.

- Slå alt AV.
- Koble alle kablene til enhetene. (I Storbritannia sier loven at telefonledningen må kobles til etter strømledningen.)
- Sett signalkablene i kontaktene.
- Sett strømledningen i stikkontakten.
- Slå apparatet PÅ.

Aby podłączyć:

⚠ Ostrzeżenie:

Prąd elektryczny obecny w kablach zasilania, telefonicznych lub komunikacyjnych jest niebezpieczny. Aby uniknąć niebezpieczeństwa porażenia, po zamknięciu pokryw komputera podłącz kable jak to zostało pokazane. Musi być użyty przewód zasilania elektrycznego z odpowiednim uziemieniem.

- Wyłącz wszystko (położenie OFF)
- Podłącz wszystkie kable do urządzeń (W Wielkiej Brytanii prawo nakazyje by kabel linii telefonicznej zostać podłączony po przewodzie zasilania).
- Podłącz kable sygnałowe do gniazdek.
- Podłącz przewód zasilania do gniazdka.
- Włącz urządzenie. (Położenie ON).

Para ligar:

⚠ Perigo:

A corrente eléctrica da unidade de alimentação, do telefone e dos cabos de comunicação é perigosa. Para evitar o risco de choques eléctricos, ligue os cabos de acordo com as indicações antes de fechar a caixa do computador. O cabo de alimentação deve ser utilizado numa tomada devidamente ligada à terra.

- Desligue tudo.
- Ligue os cabos aos dispositivos. (De acordo com as leis do Reino Unido, o cabo do telefone deve ser ligado depois do cabo de alimentação.)
- Ligue os cabos de sinal as tomadas.
- Ligue o cabo de alimentação à tomada.
- Ligue o dispositivo.

連接步驟：

⚠危險：

動力電纜、電話電纜和通信電纜上的電流是危險的。爲避免電擊危險，在蓋上電腦機蓋之後連接電纜，如圖所示。動力電纜必須妥善接地。

- 關掉一切電源。
- 將所有電纜連接於裝置。（根據英國法律規定，電話電纜必須在動力電纜之前連接。）
- 將信號電纜連接於插座。
- 將動力電纜連接於輸出端。
- 打開裝置電源。

Vključenje:

⚠ **Nevarnost:**

Struja iz električnih, telefonskih in komunikacijskih vodov je nevarna. Da se izognete šoku, vključite vode, kot kaže slika, po tem, ko ste zaprli računalniške pokrove. Strujni vod je treba uporabljati s primerno ozemljitvijo.

- Izključite vse (na “OFF”).
- Priključite vse vode na naprave. (V Veliki Britaniji je po zakonu treba telefonski vod vključiti po strujnem vodu).
- Priključite signalne vode sprejemnikom.
- Priključite električni vod izhodnemu vtikališču.
- Vključite napravo (na “ON”).

Anslutning

⚠ **Fara:**

Ström från el-, tele- och kommunikationskablar måste behandlas med försiktighet. För att undvika att få en elektrisk stöt måste du sedan du stängt höljet på datorn ansluta kablarna enligt beskrivningen nedan. Strömkabeln måste alltid användas i ett jordat uttag.

- Stäng av allting.
- Anslut alla kablarna till enheterna. (I Storbritannien måste enligt lag telefonkabeln anslutas efter strömkabeln.)
- Anslut signalkablarna till uttagen.
- Anslut strömkabeln till strömuttaget.
- Slå på enheten.

Appendix B. Power-On Self-Test (POST) Sequence

When the 35/70 GB DLT Internal Tape Drive is first powered on and there is no cartridge loaded, the indicators on the front panel light in the following sequence:

1. Each of the device status indicators on the right side lights briefly, starting from top to bottom.
2. All of the indicators on the left side turn on at the same time and remain lit for three seconds before turning off.
3. The Operate Handle, Write Protect, and Use Cleaning Tape indicators turn off.
4. The Tape in Use indicator blinks while the drive initializes.
5. Finally:
   - If a tape is not loaded:
     a. The Tape in Use indicator turns off.
     b. The Operate Handle indicator turns on.
     c. The Cartridge Insert/Release handle unlatches.
     d. The beeper sounds.
   - If a tape is loaded:
     a. The drive loads the tape.
     b. The Tape in Use indicator stops blinking and stays on.
     c. The indicator showing the tape's current capacity lights. (No lights indicate the tape is blank. If you do not select a capacity, a default is used.)
     d. The Density Override indicator blinks.
   - If a cartridge is loaded, but the Cartridge Release/Insert handle is up:
     a. The Tape in Use indicator turns off.
     b. The Operate Handle indicator flashes.
     c. You must lower the handle to load the cartridge.

Important: If you power on the drive with a tape inserted and the handle unlatched, it might damage the tape or drive.

   - If the Cartridge Release/Insert handle is up with no cartridge inserted:
     a. The Operate Handle indicator flashes.
     b. Push the Cartridge Release/Insert handle down.
     c. Wait for the Operate Handle indicator to light steady.
   - If the drive detects an error condition:
     a. The indicators on the right or left flash repeatedly in unison.
     b. Press the **Unload** button and wait for the drive to reinitialize.
     c. If the drive does not reset, power it off then on.

Appendix C. Product Specifications

This appendix includes the following product specifications and requirements.

Physical Specifications	
Height (with bezel)	86.3 mm (3.4 in)
Width (with bezel)	148.3 mm (5.84 in)
Length (with bezel)	243.8 mm (9.6 in)
Weight	2.9 Kg. (6 lb, 7 oz)
Shipping weight	3.86 Kg. (8 lb, 8 oz)

Maximum Data Capacity		
Tape	**Uncompressed Data**	**Compressed Data**[10]
DLTtape III	2.6[11], 6[11], 10 GB[12]	20 GB
DLTtape IIIxt	15 GB	30 GB
DLTtape IV	20, 35 GB	40, 70 GB
IBM Data Cartridge (part: 59H3040)	20, 35 GB	40, 70 GB

Input Voltages
Standard +5 V dc and +12 V dc ±5%

Maximum Sustained Data-Transfer Rates	
Compressed data	10 MB[13] per second
Uncompressed data	5 MB per second

[10] *This assumes a 2:1 compression ratio.*
[11] *These formats do not support data compression.*
[12] *GB equals approximately 1 000 000 000 bytes.*
[13] *MB equals approximately 1 000 000 bytes.*

Operating Environment	
Tape path temperature range	+10°C to +40°C (+50°F to +104°F)
Relative humidity	20% to 80%; noncondensing
Wet bulb	25°C (77°F) maximum
Altitude	–152 to +9 140 m (–500 to +30 000 ft)

SCSI Cable Specifications	
Connector	68-pin male, shielded, AMP 786090-7
Maximum length	3 m (10 ft)

Appendix D. Help and Service Information

If you have questions about your new Options by IBM product, or require technical assistance, visit the IBM Personal Computing Web site at http://www.pc.ibm.com for information about IBM, Options by IBM, or IBM Service and Support. 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 may 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 Service and Support section of the Personal Computing 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 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.

Support 24 hours a day, 7 days a week	
Canada	1-800-565-3344
U.S.A. / 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 IBM Automated Fax System, the Personal Computing Web page, and the PSG Electronic Bulletin Board System.

Online Technical Support	
IBM Personal Computing Web Page	www.pc.ibm.com
IBM PSG BBS	1-919-517-0001
IBM Automated Fax System	1-800-426-3395 1-800-465-3299 (in Canada)

Appendix E. Warranty and Notices

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: 35/70 GB DLT Internal Tape Drive

Warranty Period*: Two Years

**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 life-time warranty, this warranty is not transferable.

Warranty Service
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You agree to:

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2. where applicable, before service is provided —
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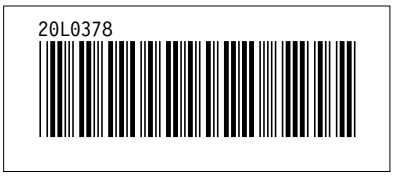
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