IBM

10/20 GB NS 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 D, "Warranty and Notices" on page 3-18 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.*

Contents

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 10/20 GB NS Tape Drive. It is divided into the following parts:

Part 1: Quick Installation instructions, in the following languages:

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

Part 2: Product description, with detailed installation and usage instructions

Part 3: Safety information, problem solving, help and service information, warranty, and notices

You can find information on how to get help, technical support, and warranty service in Appendix C, "Help and Service Information" on page 3-16.

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

Part 1: Quick Installation Guide

This guide contains installation instructions in an abbreviated form. If you are knowledgeable about SCSI products and experienced in installing options, use these instructions to quickly install your tape drive. For a description of the tape drive and more detailed installation instructions, go to "Part 2: User's Guide" on page 2-1.

In addition to this manual, this option package contains :

> Internal model of the tape drive
> 5.25-inch mounting kit
> One Imation or IBM NS20 formatted data cartridge
> Tape software CD
> Recess bezel kit
> Fast/wide to narrow SCSI converter
> Mounting screws

Contact your place of purchase if any item is missing or damaged.

Important: Be sure to retain your proof of purchase because it might be required to receive warranty service.

Installing the Drive Internally

Follow these instructions to install the tape drive using a single-ended SCSI bus adapter.

1. Turn off the computer and unplug the power cables from the power outlet for the computer and all attached peripherals.

2. Unlock the computer, if necessary, and remove the cover.

3. Touch the static-protective bag containing the tape drive to an unpainted metal surface on the computer for at least 2 seconds. Remove the drive from the static-protective bag, holding the drive by the edges, and place it on the bag.

4. Refer to the illustration below to locate the SCSI configuration block and to see how to set a jumper position to ON 1 or OFF 2 . To set a jumper ON, make sure the jumper is covering both pins. To set a jumper OFF, you can either take the jumper off completely, or you can place the jumper over one of the pins; it doesn't matter which pin the jumper is covering. Placing the jumper over one of the pins ensures that you won't lose the jumper.

The SCSI configuration block pin assignments are:

    15 and **16**: Enable terminator power
    13 and **14**: Enable termination
    11 and **12**: Reserved
    9 and **10**: Reserved
    7 and **8**: Enable parity
    5 and **6**: SCSI bit 2
    3 and **4**: SCSI bit 1
    1 and **2**: SCSI bit 0

5. **Be sure the tape drive has a SCSI ID that is not being used by another device.** The tape drive has a default setting of SCSI ID 0 when shipped. If you need to reset the SCSI ID, refer to the SCSI ID Pin Assignment table below for the ID jumper pin settings.

SCSI ID	Bit 2 Pin 5, 6	Bit 1 Pin 3, 4	Bit 0 Pin 1, 2
0	OFF	OFF	OFF
1	OFF	OFF	ON
2	OFF	ON	OFF
3	OFF	ON	ON
4	ON	OFF	OFF
5	ON	OFF	ON
6	ON	ON	OFF
7	ON	ON	ON

SCSI ID Pin Assignment

6. If the tape drive is the last device on the SCSI bus, the bus must be terminated. Some cables will provide self-termination. The tape drive is shipped with termination disabled; if you need to enable termination, place a jumper over pins **13** and **14**.

7. Normally the SCSI bus adapter supplies terminator power. Therefore, the tape drive is shipped with **enable terminator power** OFF (terminator power disabled). If you need to enable terminator power, place a jumper over pins **15** and **16**.

8. The parity is set to ON, **enable parity**, as the default (jumper over pins **7** and **8**). To disable parity, set the jumper to OFF.

9. Locate an available bay or space in your computer to mount the tape drive. The drive can be mounted in either a horizontal or vertical position. The drive fits in a 3.5-inch (1-inch high) standard bay. You can also mount the drive in a 5.25-inch (1.6-inch high) bay using the 5.25-inch mounting kit provided.

The installation instructions are located on the mounting kit packaging.

The following table lists several IBM PC Servers, IntelliStation professional workstations, and desktop PCs, and gives the available bays for each model. Some servers and workstations may have a lockable door covering the drive bays. If you are installing the tape drive into one of these servers or workstations, you can use the included recess bezel kit to install the tape drive. With the recess bezel kit, the tape drive sits further back in the bay, so the tape cartridge does not stick out and keep the door from closing completely.

Model	Bays Available
PC Server 310	5.25 in. only
PC Server 315	5.25 in. only
PC Server 320	both sizes
PC Server 325	both sizes
PC Server 330	3.5 in. only
Intellistation M Pro	both sizes
Intellistation Z Pro	both sizes
Netfinity 3000	both sizes
Netfinity 3500	both sizes
PC 300 PL	5.25 in. only (when used with Airspeed rail kit)[1]
PC 300 GL	5.25 in. only (when used with Airspeed rail kit)

10. Remove the bay cover, if necessary. Slide the tape drive into the bay, and secure it with the mounting screws provided in the option package. **Do not use any other screws to secure the drive.** Using screws that are too long might damage the drive.

11. Locate the SCSI bus cable (usually a 50-pin ribbon cable) that is inside your computer, and attach one of the connectors on the cable to the tape drive. Ensure that pin 1 of the SCSI bus cable

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[1] *To contact Airspeed for ordering, see page 2-3.*

(usually color coded) aligns with pin 1 of the SCSI connector on the tape drive. If your computer has a 68-pin cable, use the fast/wide-to-narrow SCSI internal converter included in the option package. The wide (68-pin) side of the adapter attaches to your computer's SCSI bus cable, and the narrow (50-pin) side of the adapter attaches to the SCSI connector on the tape drive. Make sure that pin 1 of the SCSI cable (usually color coded) aligns with pin 1 of the SCSI connector on the tape drive 2 .

12. Locate an available power cable inside your computer, and connect it to the four-pin power connector on the tape drive.

13. Replace the computer cover, and secure it in place.

14. Reconnect the ac power cord and any other signal cables to the outside of your computer, and plug the power cord into an available power outlet. Turn on all attached devices; then turn on the computer.

15. The tape software CD contains a README.TXT file with software installation instructions. Review the README instructions, and then install the software. The CD also contains tape backup and restore applications for most operating systems.

Installing the Drive in an External Enclosure

The 10/20 GB NS Tape Drive can be installed in the IBM External Half High SCSI Storage Enclosure (IBM part number 02K4274), or another equivalent external enclosure. For detailed instructions on installing the tape drive into an external enclosure, see "Installing the SCSI Drive in an External Enclosure" on page 2-9.

Product Description

The IBM 10/20 GB NS Tape Drive allows you to save and restore data files. The tape drive is available in an internal model only, although it can be used with most external SCSI enclosures, such as IBM part number 02K4274 or the equivalent. The tape drive has the following features:

Tape capacity

Provides capacity to 20 GB[8] per cartridge when using the NS 20 Tape Cartridges and the hardware compression features of the tape drive. The actual capacity per cartridge varies depending on various factors, which include the type of backup data, the data cartridge type, and the condition of the media.

High speed data transfer

Maximizes data transfer to 2 MB per second when using the hardware compression features of the drive. If your computer is not capable of supporting this data transfer rate, the drive will automatically adjust tape speed to maintain streaming.

Streaming-tape intelligence

Provides a continuous tape motion for an uninterrupted precisely coordinated flow of data to and from the tape cartridge. This *streaming* motion, combined with the *serpentine* recording method contributes to the increased storage capacity, efficiency, and speed of this cartridge technology.

Serpentine recording method

Uses the *serpentine* recording method, which decreases read time by reading or writing data in both the forward and reverse directions. With this method, the tape is not rewound at the end of a track. Instead, the drive heads are logically or mechanically switched to a different position on the tape and another track is written or read in the reverse direction. The individual tracks are sequential to minimize the amount of head motion as the heads change position for each track.

Installation flexibility

Installs in a 5.25-inch or 3.5-inch bay, or can be used with most external SCSI enclosures. Comes with a recess bezel kit, for installation in desktop computers,

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[8] *The formatted capacity of 1 GB is approximately 1 000 000 000 bytes of data.*

servers, or workstations with lockable security doors. Can also be installed into a one-third height bay, using a special rail kit which can be purchased separately.

SCSI-2 interface compatibility

Supports the SCSI-2 interface standard, which provides additional device support and greatly improves the performance of the original SCSI interface.

Backward compatibility

Provides read compatibility with IBM TR4 tape options. **Note:** This drive does not provide read or write compatibility with any travan format except the TR4.

Tape software support

Supports most tape back-up applications and operating systems such as:

Microsoft Windows 3.1x
Windows 95
Windows NT 3.51 or higher
Novell NetWare 3.1x or 4.x
IBM OS/2 3.0 or higher

The included CD contains installation and operating instructions for the back-up and restore applications. Choose the back-up and restore application that best suits your needs.

In addition to this manual, this option package contains :

Internal model of the tape drive
5.25-inch mounting kit
One Imation or IBM NS20 formatted data cartridge
Tape software CD
Recess bezel kit
Fast/wide to narrow SCSI converter
Mounting screws

Contact your place of purchase if any item is missing or damaged.

Important: Be sure to retain your proof of purchase because it might be required to receive warranty service.

Before You Begin

To install this drive, you must have the following:

A SCSI bus adapter that is a single-ended SCSI and which meets the SCSI-2 (ANSI X3.T92) or SCSI (ANSI X3.131-199X Rev.10h) standards

Access to your SCSI configuration information

The documentation that comes with your computer, SCSI bus adapter, or external enclosure

A CD-ROM drive to use the tape backup and restore application on the CD, or another backup software application such as Seagate Backup Exec, Cheyenne ArcServe, or any other backup software that supports the NS20 data format

If installing in an IBM PC 300PL or PC 300GL, an Airspeed rail kit (Airspeed part number 01K1677)

Attention: To order the Airspeed rail kit for installing the tape drive into an IBM PC 300GL or 300PL, you can contact Airspeed through any of these methods:

By phone at (919) 304-5000

By fax request at (919) 304-5006

By email request at airspeed@interpath.com

What to do next?

If you are installing the tape drive internally, go to "Installing the Drive Internally" on page 2-4.

If are installing the tape drive in the Options by IBM External Half High SCSI Storage Enclosure (IBM part number 02K4274), or some other external SCSI enclosure, go to "Installing the SCSI Drive in an External Enclosure" on page 2-9.

You can find information on how to get help, technical support, and warranty service in Appendix C, "Help and Service Information" on page 3-16.

Installing the Drive Internally

This section provides instructions for installing the tape drive in an internal bay.

Step 1. Preparing for Installation

1. Turn off the computer and unplug the power cables from the power outlet for the computer and all attached peripherals.

2. Unlock the computer, if necessary, and remove the cover. For specific information on removing your computer's cover, refer to the documentation that comes with your computer.

3. Touch the static-protective bag containing the tape drive to an unpainted metal surface on the computer for at least 2 seconds. Remove the drive from the static-protective bag, holding the drive by the edges, and place it on the bag.
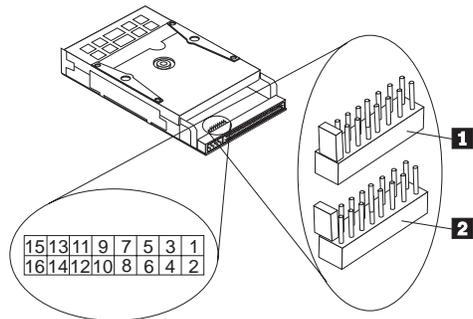
Step 2. Configuring the SCSI Drive

Each device connected to the SCSI bus adapter must have its own unique SCSI ID. For most computers, you can press F1 during startup to view your computer and SCSI bus adapter configuration. This information might include which SCSI IDs are currently in use. Some SCSI adapters have utility programs that allow you to view the SCSI configuration, or you might have to physically inspect the installed SCSI devices to see how the IDs are set. The tape drive is preset at the factory to SCSI ID 0. If your computer has another device which is using that ID, you will need to reset the SCSI ID. The ID you choose determines the priority of the device. In general, a low- or mid-priority device is given a lower ID, and a high-priority device is given a higher ID. Tape drives are usually considered slow or low-priority devices, so choose a lower SCSI ID for this drive. Do not assign the tape drive an ID of 7, because most SCSI bus adapters use that ID. Choose an ID from 1 to 6 for the tape drive. For more information, refer to the documentation that comes with your computer or SCSI bus adapter.

If you have determined that you need to reset the tape drive to another SCSI ID, and have chosen the ID which is appropriate for your needs, follow these steps to reset the SCSI ID.

1. Refer to the illustration below to locate the SCSI configuration block and to see how to set a jumper position to ON 1 or OFF 2 . To set a jumper ON, make sure the jumper is covering both pins. To set a jumper OFF, you can either take the jumper off completely, or you can place the jumper over one of the pins; it doesn't matter which pin the jumper is covering. Placing the

jumper over one of the pins ensures that you won't lose the jumper.

The SCSI configuration block pin assignments are:

15 and **16**: Enable terminator power
13 and **14**: Enable termination
11 and **12**: Reserved
 9 and **10**: Reserved
 7 and **8**: Enable parity
 5 and **6**: SCSI bit 2
 3 and **4**: SCSI bit 1
 1 and **2**: SCSI bit 0

2. **Be sure the tape drive has a SCSI ID that is not being used by another device.** Refer to the SCSI ID Pin Assignment table below for the ID jumper pin settings. Then set the jumpers on the pins which match the ID you have chosen.

SCSI ID	Bit 2 Pin 5, 6	Bit 1 Pin 3, 4	Bit 0 Pin 1, 2
0	OFF	OFF	OFF
1	OFF	OFF	ON
2	OFF	ON	OFF
3	OFF	ON	ON
4	ON	OFF	OFF
5	ON	OFF	ON
6	ON	ON	OFF
7	ON	ON	ON

SCSI ID Pin Assignment

3. If the tape drive is the last device on the SCSI bus, the bus must be terminated. Some cables will provide self-termination. The tape drive is shipped with termination disabled; if you need to enable termination, place a jumper over pins **13** and **14**.

4. Normally the SCSI bus adapter supplies terminator power. Therefore, the tape drive is shipped with **enable terminator power** OFF (terminator power disabled). If you need to enable terminator power, place a jumper over pins **15** and **16**.

5. The parity is set to ON, **enable parity**, as the default (jumper over pins **7** and **8**). To disable parity, set the jumper to OFF.

Step 3. Mounting the Drive

1. Locate an available bay or space in your computer to mount the tape drive. The drive can be mounted in either a horizontal or vertical position. The drive fits in a 3.5-inch (1-inch high) standard bay. You can also mount the drive in a 5.25-inch (1.6-inch high) bay using the 5.25-inch mounting kit provided. When you attach the brackets to the sides of the 3.5-inch tape drive, you increase the width and height of the drive. The instructions for using the 5.25-inch mounting kit are located on its packaging. Use only those parts necessary for your particular installation; some parts may not be required.

The following table lists several IBM PC Servers, IntelliStation professional workstations, and desktop PCs, and gives the available bays for each model. Some servers and workstations may have a lockable door covering the drive bays. If you are installing the tape drive into one of these servers or workstations, you can use the included recess bezel kit to install the tape drive. With the recess bezel kit, the tape drive sits further back in the bay, so the tape cartridge does not stick out and keep the door from closing completely.

Model	Bays Available
PC Server 310	5.25 in. only
PC Server 315	5.25 in. only
PC Server 320	both sizes
PC Server 325	both sizes
PC Server 330	3.5 in. only
Intellistation M Pro	both sizes
Intellistation Z Pro	both sizes
Netfinity 3000	both sizes
Netfinity 3500	both sizes
PC 300 PL	5.25 in. only (when used with special rail kit)[9]
PC 300 GL	5.25 in. only (when used with special rail kit)

2. Remove the cover plate from the bay selected. Slide the drive partially into the bay. Align the drive-bay screw holes with the threaded holes in the drive housing (or bracket, if applicable).

3. Use the screws provided to secure the drive in the bay. **Using the wrong size screws can damage the drive**. Usually two screws are used on each side. Some installations use the screw holes on the bottom (circuit board side) of the drive. **Do not**

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[9] *To contact Airspeed for ordering, see page 2-3.*

overtighten the screws. Make sure that the drive is securely
mounted.

Step 4. Attaching the SCSI and Power Cables

1. Locate the SCSI 1 and power 3 connectors using the
   illustration below.
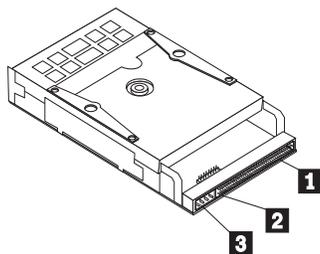
   1   SCSI connector
   2   SCSI connector - pin 1
   3   Power connector

2. Locate the SCSI bus cable (usually a 50-pin ribbon cable) that is
   inside your computer. The SCSI bus adapter might already be on
   the computer system board, or it might be installed in an
   expansion slot. There can be up to seven connectors on the cable
   from the SCSI bus adapter. Locate an available SCSI connector
   on the SCSI bus cable, and attach it to the SCSI connector on the
   tape drive 1 . If your computer has a 68-pin cable, use the
   fast/wide-to-narrow SCSI internal converter included in the option
   package. This has a 68-pin connector on one side, and a 50-pin
   connector on the other. Attach the 68-pin side to your

computer's SCSI cable, and attach the 50-pin side to the SCSI
connector on the tape drive. Make sure that pin 1 of the SCSI
cable (usually color coded) aligns with pin 1 of the SCSI
connector on the tape drive 2 .

3. Locate an available power cable inside your computer, and
   connect it to the four-pin power connector on the tape drive.

   The power cable connector is keyed and will fit easily only one
   way. **Do not force it**. If it does not attach easily, turn the
   connector around and try it again. If all power cables are in use,
   you can purchase a dc Y-connector at most electronics stores,
   which will split a connection to make room for more devices.

Step 5. Completing the Installation

Check your work before closing the computer.

1. Be sure that the power and interface connectors are securely attached.
2. Be sure that the cables are neatly routed. They must not:
     Get in the way when the cover is replaced.
     Impede the power supply fan blade.
     Block air flow paths.
3. Replace the computer cover and secure it in place.
4. Reconnect the ac power cord and cables. Turn on all attached devices; then turn on the computer.

Step 6. Installing the Software

The tape software CD contains a README.TXT file with installation instructions. Review the README instructions before completing the software installation. The CD contains installation, tape back-up and restore applications for most operating systems such as:

     Microsoft Windows 3.1x
     Windows 95
     Windows NT 3.51 or higher
     Novell NetWare 3.1x or 4.x
     IBM OS/2 3.0 or higher

If you have questions or problems with the backup applications on your CD, contact Seagate Software, Inc. for support:

(800) SEA-GATE (732-4283)

http://www.seagatesoftware.com

The tape drive is also compatible with many other back-up and restore applications not included on the tape software CD. Contact the supplier of your favorite back-up and restore software to see if they support the NS 20 class of tape drives, or check the following web site for the most up to date compatibility information:

http://www.pc.ibm.com/us/compat

If you are using another back-up application, follow the instructions provided with your software to install and configure the tape drive.

Installing the SCSI Drive in an External Enclosure

The instructions in this section are for installing the 10/20 GB NS Tape Drive into the Options by IBM External Half High SCSI Storage Enclosure (IBM part number 02K4274). For instructions on installing the tape drive into other SCSI external enclosures, consult the documentation that comes with your enclosure.

Step 1. Preparing for Installation

1. Turn off the computer and unplug all power cables from the computer and all attached peripherals.

2. Touch the static-protective bag containing the tape drive to an unpainted metal surface on the computer for at least 2 seconds. Remove the drive from the static-protective bag, holding the drive by the edges, and place it in a convenient space next to your computer.

Step 2. Configuring the SCSI Drive

Each device connected to the SCSI bus adapter must have its own unique SCSI ID. For most computers, you can press F1 during startup to view your computer and SCSI bus adapter configuration. This information might include which SCSI IDs are currently in use. Some SCSI adapters have utility programs that allow you to view the SCSI configuration, or you might have to physically inspect the installed SCSI devices to see how the IDs are set. The tape drive is preset at the factory to SCSI ID 0. If your computer has another device which is using that ID, you will need to reset the SCSI ID. The ID you choose determines the priority of the device. In general, a low- or mid-priority device is given a lower ID, and a high-priority device is given a higher ID. Tape drives are usually considered slow or low-priority devices, so choose a lower SCSI ID for this drive. Do not assign the tape drive an ID of 7, because most SCSI bus adapters use that ID. Choose an ID from 1 to 6 for the tape drive.

The External Half High SCSI Storage Enclosure has a small cable which connects the jumpers for the tape drive to the SCSI ID setting switch on the rear of the enclosure. Refer to the documentation which comes with the external enclosure for more information on connecting this cable. If you are installing the tape drive into another type of external enclosure, refer to the documentation which came with that enclosure for more instructions.

Step 3. Installing the Drive into the Enclosure

Follow these instructions to install the tape drive:

1. Refer to the documentation for the external enclosure for instructions on opening the enclosure and removing the front cover and filler panel. Once you have removed the filler panel, replace the front cover according to the instructions in the documentation for the enclosure.

2. You will need to attach the 5.25 inch bezel included with the tape drive in order to install it in the external enclosure. Refer to the documentation for the external enclosure, and follow the instructions for installing a 5.25 inch front loading drive.

3. When the instructions refer to the two types of standoff screws, locate the metric threaded standoffs. You need to use the metric standoffs with the tape drive. Once you have attached the standoffs to the tape drive, use the screws provided with the enclosure to secure the tape drive inside the enclosure.

4. The external enclosure comes with both a 50-pin internal cable and a 68-pin internal cable. Make sure the enclosure has the 50-pin cable attached; if necessary, change the cable. Plug the connector for the internal cable into the SCSI connector at the rear of the drive.

5. Attach the SCSI ID select cable as instructed in the documentation for the external enclosure.

6. Attach the enclosure's power supply cable to the power connector on the drive.

7. Once all the internal cables are connected to the tape drive, replace the cover of the enclosure and secure it with the appropriate screws.

8. If the tape drive is the last device on the SCSI chain, refer to the external enclosure documentation for instructions on termination.

9. Refer to the external enclosure documentation for instructions on setting the SCSI ID setting switch.

Step 4. Completing the Installation

1. Use a 50-pin SCSI cable to connect the enclosure to your computer.

2. Connect a power cable to the rear of the enclosure, and then plug the cable into a power outlet. Turn the power switch ON. (The power switch is on the rear panel of the enclosure.) Turn on the other attached devices; then turn on the computer.

Step 5. Installing the Software

The tape software CD contains a README.TXT file with installation instructions. Review the README instructions before completing the software installation. The CD contains installation, tape back-up and restore applications for most operating systems such as:

Microsoft Windows 3.1x
Windows 95
Windows NT 3.51 or higher
Novell NetWare 3.1x or 4.x
IBM OS/2 3.0 or higher

If you have questions or problems with the backup applications on your CD, contact Seagate Software, Inc. for support:

(800) SEA-GATE (732-4283)

http://www.seagatesoftware.com

The tape drive is also compatible with many other back-up and restore applications not included on the tape software CD. Contact the supplier of your favorite back-up and restore software to see if they support the NS 20 class of tape drives, or check the following web site for the most up to date compatibility information:

http://www.pc.ibm.com/us/compat

If you are using another back-up application, follow the instructions provided with your software to install and configure the tape drive.

Using the Tape Drive

This section provides information on using the features of the tape drive.

Loading and Unloading Tape Cartridges

The illustration shows the front panel of the tape drive.
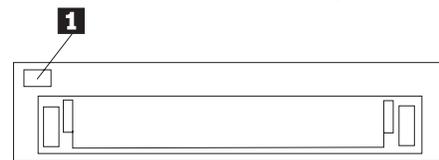
The front panel of the tape drive contains the cartridge opening and one round, green light 1 . This green light indicates drive activity. When the green light is OFF, the drive is not active.

Your tape drive has a flip-up door that covers the cartridge opening when you do not have a tape cartridge in the drive. Once you insert a cartridge, the tape drive holds it in place using a positive locking mechanism.

Note: **Do not** remove the tape cartridge while the drive is operating. Complete any tape operation and wait until the green activity light is OFF before removing the cartridge.

To load a cartridge, insert it with the metal base plate down and the tape access door facing the drive. The following illustration shows loading of a cartridge.
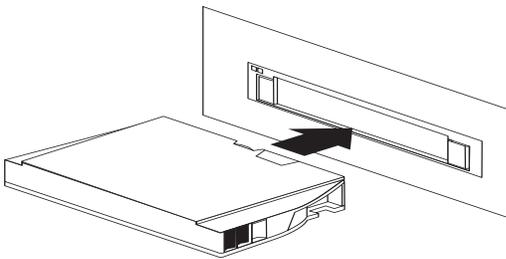
To unload a cartridge, wait until the drive activity light is OFF and then pull the cartridge straight out. The following figure illustrates unloading a cartridge.
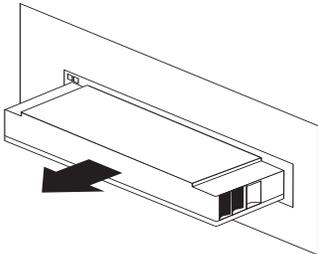
Setting the Write-Protect Switch

Tape cartridges feature a write-protect switch located in the upper-left corner of the cartridge. You can set the switch to keep data from being written on the tape. Use this switch when you want to make sure that important data on the tape will not be overwritten.

The illustration below shows the cartridge with the switch 1 in the nonprotected (read and write) or unlocked position.
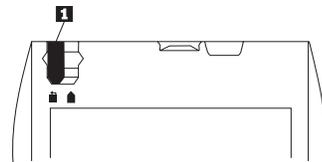
The following illustration shows the switch 2 in the protected (read only) or locked position.
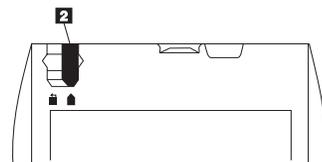
To return a cartridge to the unprotected write state, push the switch towards the end of the cartridge or unlocked position.

Improving Performance

The 10/20 GB NS Tape Drive is ideally suited to streaming operations, as opposed to multiple-start-and-stop tape movement. Frequent start-and-stop operations are often the result of data underruns. Start-and-stop operation can also increase the stress on both the drive and the media.

If you are experiencing multiple starts-and-stops, or if you want to improve the tape drive's performance, try one of the following:

Shut down all nonessential applications.
Clean the drive's tape heads, using an appropriate tape-cleaning cartridge.
Replace the data cartridge; it might be damaged or faulty.

Maintenance

You need to perform minimal maintenance to ensure that your tape drive operates in peak condition. This section explains how to care for the tape cartridges and how to clean the drive head.

Caring for Tape Cartridges

The following points are guidelines for storing and using the cartridges:

Do not open the tape access door of the cartridge or touch the tape itself.
Keep cartridges away from sources of electromagnetic fields, such as telephones, dictation equipment, mechanical or printing calculators, motors, and bulk erasers. Do not place the cartridges on the computer monitor or on the base unit of the computer.
Keep cartridges away from direct sunlight and heat sources, such as radiators or warm air ducts.
Keep cartridges free of moisture. Do not wet or submerge cartridges in any liquid.
Do not expose cartridges to temperature extremes.
Re-tension tape cartridges that have not been used for more than a month before restoring or backing up data. Re-tensioning is the winding and rewinding of a tape cartridge. This action restores the proper tape tension to the media. The backup application software provides a function to re-tension a tape cartridge.

Cleaning the Tape Head

To properly maintain the drive, periodically clean the tape head. You
do not need to perform any other periodic maintenance. Clean the
tape head once a week with a dry-process cleaning cartridge, such as
IBM part number 16G8583. Follow the instructions which come with
the cleaning cartridge.

Once the cleaning cartridge is inserted into the tape drive, the cleaning
process is automatic. The entire process takes only a few seconds and
is completed when the drive's activity light stops flashing. The
cleaning cartridge is good for 30 cleaning operations.

Appendix A.
Safety Information
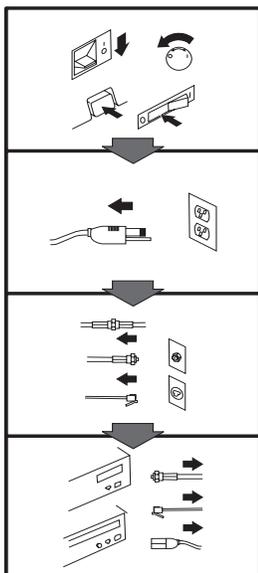
To Disconnect:

⚠ **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.

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
  periferních 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.
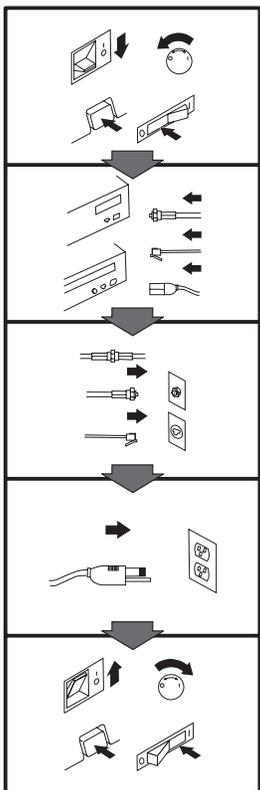
To Connect:

⚠ **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 számitógép 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 jel-kábelt az aljzatába.
- Csatlakoztassa a hálózati vezetéket az aljzatába.
- Kapcsolja BE a készüléket.

연결하려면 :

⚠ 위험 :

전원, 전화, 통신 케이블에
서 나오는 전류는 유해하
다. 쇼크 위험을 없애려면
본 제품 설치를 위해 컴퓨
터 뚜껑을 닫은 후에 케이
블을 연결한다. 전원 코드
는 제대로 접지된 콘덴사와
사용돼야 한다.

• 모든 전원을 차단한다.

• 장치에 모든 케이블을
연결한다. (영국에서는 법
으로, 전화선을 먼저 연결
한 다음 전원코드를 연결해
야 한다.)

• 수신기에 신호 케이블
을 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
został 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 。為 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.
10/20 GB NS Tape Drive Specifications

This appendix includes the the following specifications and requirements:

- Physical specifications
- Power requirements
- Drive performance
- Environmental requirements
- Regulatory compliance

Physical Specifications

The physical specifications[10] of the 10/20 GB NS Tape Drive are listed in the following table.

Physical Specifications		
Drive Type	3.5-Inch Mount	5.25-Inch Mount
Height	25 mm (1.0 in.)	42 mm (1.6 in.)
Width	102 mm (4.0 in.)	147 mm (5.8 in.)
Length	157.5 mm (6.2 in.)	163 mm (6.4 in.)
Weight	0.5 kg (1.0 lb)	0.7 kg (1.5 lb)

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[10] *Product-description data represents IBM's design objectives and is provided for comparative purposes; actual results might vary, based on a variety of factors. This product data does not constitute a warranty. Data is subject to change without notice.*

Power Requirements

The following table lists the power specifications by voltage level for the tape drive. The power specifications are measured at the tape-drive power connector and are nominal values.

Power Specifications		
	+12 V dc	*+5 V dc*
Voltage tolerance	+ or −10 %	+ or −5 %
Operational current	1.8 amps	1.5 amps
Standby current	0.25 amps	1.0 amps
Peak	1.8 amps max	1.5 amps max
Power sequence	None	None
Ripple (peak to peak)	< 100 mV	< 100 mV
Power user (max)	< 29 watts	< 29 watts
Standby	< 8 watts	< 8 watts

Drive-Performance Specifications

The following table lists the performance specifications for the tape drive.

Drive Performance	
Feature	**Specification**
Capacity	2.0 GB[11], 900 Oe[12] 400 feet 8 mm cartridge - QIC 3095 format 4.0 GB, 900 Oe 740 feet 8 mm (TR4) cartridge - QIC 3095 format 10.0 GB, 900 Oe 740 feet (NS20) cartridge - QIC 3220 format (All capacities increased, typically by two, using hardware data compression)
Effective backup rate (max)	60 MB[13] per minute typical (uncompressed)
Data transfer rate	489/733/1000 KB per second
Tape speed for read/write	46, 70, or 94 ips
Recording method	Serpentine

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[11] *The formatted capacity of 1 GB is approximately 1 000 000 000 bytes of data.*

[12] *Oersted (Oe)*

[13] *The formatted capacity of 1 MB is approximately 1 000 000 bytes of data.*

Recording format	QIC 3220MC QIC 3095MC
Recording code	1,7 RLL
Error recovery	Reed Solomon ECC
Recording unrecoverable errors	Less than 1 in 10 data Mb
Recording media	900 Oe 400 feet 1/4-inch 900 Oe 400 feet 8 mm QIC Wide 900 Oe 740 feet 8 mm Travan 900 Oe 740 feet 8 mm NS20
Cartridge size	3.2 in. x 2.4 in. x 0.4 in. (81 mm x 61 mm x 10.2 mm)
Data density	60 000 bpi
Tracks	60 on 1/4-inch media 77 on QIC Wide media
Synchronous transfer rate (burst)	5 MB per second maximum
Asynchronous transfer rate (burst)	5 MB per second maximum

Environmental Requirements

The following table lists the environmental specifications for the tape drive. You can mount the drive either vertically or horizontally.

Environmental Requirements		
Specification	**Operational**	**Nonoperational**
Temperature	+5° to +45°C (+41° to +113°F[14])	−40° to +60°C (−40° to +140°F[15])
Thermal gradient	1°C per minute (no condensation) (approx. 2°F per minute)	20°C per hour (approx. 36°F per hour)
Relative humidity	20% to 80% noncondensing[14]	5% to 95% noncondensing[15]
Max wet bulb temperature	26°C (78.8°F)	No condensation
Altitude	−1000 to +15 000 feet (−3.05 m to +45.72 m)	−1000 to +50 000 feet (−3.05 m to +152.4 m)

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[14] *Mechanism and media*

[15] *Mechanism*

Vibration		
Peak to peak displacement Peak acceleration	0.005 in. max (5 to 44.3 Hz) 0.50 g max (44.3 to 500 Hz)	0.1 in. max (5 to 17 Hz) 1.5 g max (17 to 500 Hz)
Acoustic level operational (a-wt sum)	55 dBA maximum (measured in suitable enclosure at 3-ft distance and operator height)	—
Shock (1/2 sine wave)	2.5 g peak 11 millisecond	90 g peak 11 millisecond

Regulatory Compliance

The tape drive complies with the regulations listed in the following table.

Regulatory Compliance	
Agency	**Regulation**
CSA	C22.2, No. 950-M89
TUV & IEC-RHEINLAND	EN 60 950/IEC 950
UL	1950
Canadian Dept of Communications	Class B
VDE	Class B
FCC	Class B, Part 15

Use the tape drive only in equipment where the combination has been
determined to be suitable by an appropriate certification organization
(for example, Underwriters Laboratories Inc. of the Canadian
Standards Association in North America). Consider the following
safety points:

  Install the drive in an enclosure that limits the user's access to
  live parts, gives adequate system stability, and provides the
  necessary grounding for the drive.
  Provide the correct voltages (+5 V dc and +12 V dc) based on the
  regulation applied — Extra Low Voltage (SEC) for UL and CSA
  and Safety Extra Low Voltage for BSI and VDE (if applicable).

Appendix C.
Help and Service Information

During the warranty period, you can call a toll-free number to get technical support 24 hours a day, 7 days a week, in order to answer any questions about your new IBM option. Response time will vary depending on the number and nature of calls received. If you need warranty service, return or exchange 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. Marketing, installation, and configuration support will be withdrawn from the PSG HelpCenter 90 days after the option has been withdrawn from marketing.

Before calling, please prepare for your call by following these steps.

Step 1: Problem Solving

You might be able to solve the problem yourself. Before calling IBM, you might want to try some or all of the following troubleshooting procedures.

Tape Drive Procedures

1. Check the drive to ensure that both power and signal cables are securely attached.
2. Check the SCSI ID for the device. Each SCSI device must have its own unique SCSI ID. Refer to "Step 2. Configuring the SCSI Drive" on page 2-4 for more information.
3. Check for proper SCSI bus termination. There must be a terminator or a terminating device at the last connector on the SCSI cable.

   For the internally mounted tape drive, you can use it as the terminating device by placing a jumper over pins **13** and **14** (ON). Refer to "Step 2. Configuring the SCSI Drive" on page 2-4 for more information.

   For the tape drive mounted in an external enclosure, you can use it as the terminating device by placing a terminating plug in the second SCSI connector on the device. Refer to "Step 3. Installing the Drive into the Enclosure" on page 2-10 for more information.

General Procedures

1. Remove the tape drive. Check for bent or misaligned pins and then reinstall the drive if there are no problems.
2. Check the computer documentation for instructions about the installation of upgrades. Look for a section about system setup or system configuration and follow all procedures.

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 PSG Automated Fax System, the PSG Web page, and the PSG Electronic Bulletin Board System.

Online Technical Support	
IBM PSG Web Page	www.pc.ibm.com
IBM PSG BBS	1-919-517-0001
IBM PSG Automated Fax System	1-800-426-3395

Appendix D.
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: 10/20 GB NS Tape Drive

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

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

When a type of service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service. You also agree to ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange.

You agree to:

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

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

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

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

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

Limitation of Liability
Circumstances may arise where, because of a default on IBM's part or other liability you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other contract or tort claim), IBM is liable only for:

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

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Electronic Emission Notices

10/20 GB NS Tape Drive

Federal Communications Commission (FCC) Statement

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

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

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

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

Responsible Party:

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

Industry Canada Class B Emission Compliance Statement

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

Avis de conformité à la réglementation d'Industrie Canada

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

Deutsche EMV-Direktive (electromagnetische Verträglichkeit)

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

Der Aussteller der Konformitätserklärung ist die IBM UK, Greenock.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.

European Union - Emission Directive

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

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

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

Union Européenne - Directive Conformité électromagnétique

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

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

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

Unione Europea - Directiva EMC (Conformidad électromagnética)

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

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

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

Union Eurpea - Normativa EMC

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

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

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Part Number: 05L1656

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