

COVER Book Cover

7208 20GB External 8mm Tape Drive

Setup and Operator Guide

Model 342

Document Number SA37-0380-00

Part Number 59H3812

NOTICES Notices

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+--- Note! -----+
| Before using this information and the product it supports, be sure |
| to read the general information under "Notices" in topic FRONT_1. |
|                                                                     |
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EDITION Edition Notice

First Edition (February 1998)

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Subtopics

- FRONT_1.1 Safety Notices
- FRONT_1.2 End of Life (EOL) Plan
- FRONT_1.3 Electronic Emission Notices
- FRONT_1.4 Trademarks

FRONT_1.1 Safety Notices

When using this product, observe the danger, caution, and attention notices contained in this guide. Each danger and caution notice contains a reference number (72XXDxxx or 72XXCxxx). Use the reference number to check the translation in *External Devices Safety Information*, SA26-7003.

Examples of danger, caution, and attention notices follow.

Subtopics

FRONT_1.1.1 Danger Notice

FRONT_1.1.2 Caution Notice

FRONT_1.1.3 Attention Notice

FRONT_1.1.1 Danger Notice

A danger notice calls attention to a situation that is potentially lethal or extremely hazardous to people.

The following is a sample danger notice:

| | |
|-----------|---|
| PICTURE 1 | DANGER |
| | An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (72XXD201) |
| | |

FRONT_1.1.2 Caution Notice

A caution notice calls attention to a situation that is potentially hazardous to people because of some existing condition.

The following is a sample caution notice:

| | |
|-----------|---|
| PICTURE 2 | CAUTION: Do not attempt to use the handle on the module to lift the entire device (module and enclosure) as a unit. First remove the module; then, use two hands to lift the enclosure. (72XXC356) |
|-----------|---|

FRONT_1.1.3 Attention Notice

An attention notice indicates the possibility of damage to a program, device, system, or data.

The following is a sample attention notice:

Attention: Do not operate the 7208 Tape Drive in a poor air-quality environment. If your environment contains an excessive amount of particulates, contact your service representative for more information.

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This unit contains recyclable materials. The materials should be recycled where facilities are available and according to local regulations. In some areas IBM may provide a product take-back program that ensures proper handling of the product. Contact your IBM representative for more information.

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- 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.

Industry Canada Compliance Statement

This Class B digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

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A declaration of Conformity with the requirements of the Directive has been signed by IBM SEMEA S.p.A., Via Tolmezzo, 15, Milano, Italy.

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FRONT_2 About This Guide

This guide describes how to install and use the 7208 Tape Drive Model 342. It contains the following topics:

Topic 1, "General Information," describes the 7208 Tape Drive, gives the system requirement, and lists hardware specifications.

Topic 2, "Setting Up the 7208 Tape Drive," tells how to install the 7208 Tape Drive.

Topic 3, "Using the 7208 Tape Drive," describes the operator controls, indicator lights, and liquid crystal display (LCD) on the 7208 Tape Drive. It also tells how to load and unload a tape cartridge, and how to clean the tape drive.

Topic 4, "Removing the 7208 Tape Drive," tells how to remove the 7208 Tape Drive after it has been installed.

Topic 5, "Using the Media," describes the media to use in the 7208 Tape Drive.

Appendix A, "Power Cables," provides power cable information for different countries.

Appendix B, "Fault Symptom Codes and Error Recovery Procedure Numbers," lists codes and numbers needed to resolve error messages.

Appendix C, "Error Recovery Procedures," lists the procedures to follow to resolve error messages.

Store this guide with your system manuals.

Subtopics

FRONT_2.1 Related Publications

FRONT_2.1 Related Publications

- *7208 20GB External 8mm Tape Drive Model 342 Service Guide*, SA37-0381, provides service and maintenance information for the 7208 Tape Drive.
- *External Devices Safety Information*, SA26-7003, provides translations of danger and caution notices.

1.0 Chapter 1. General Information

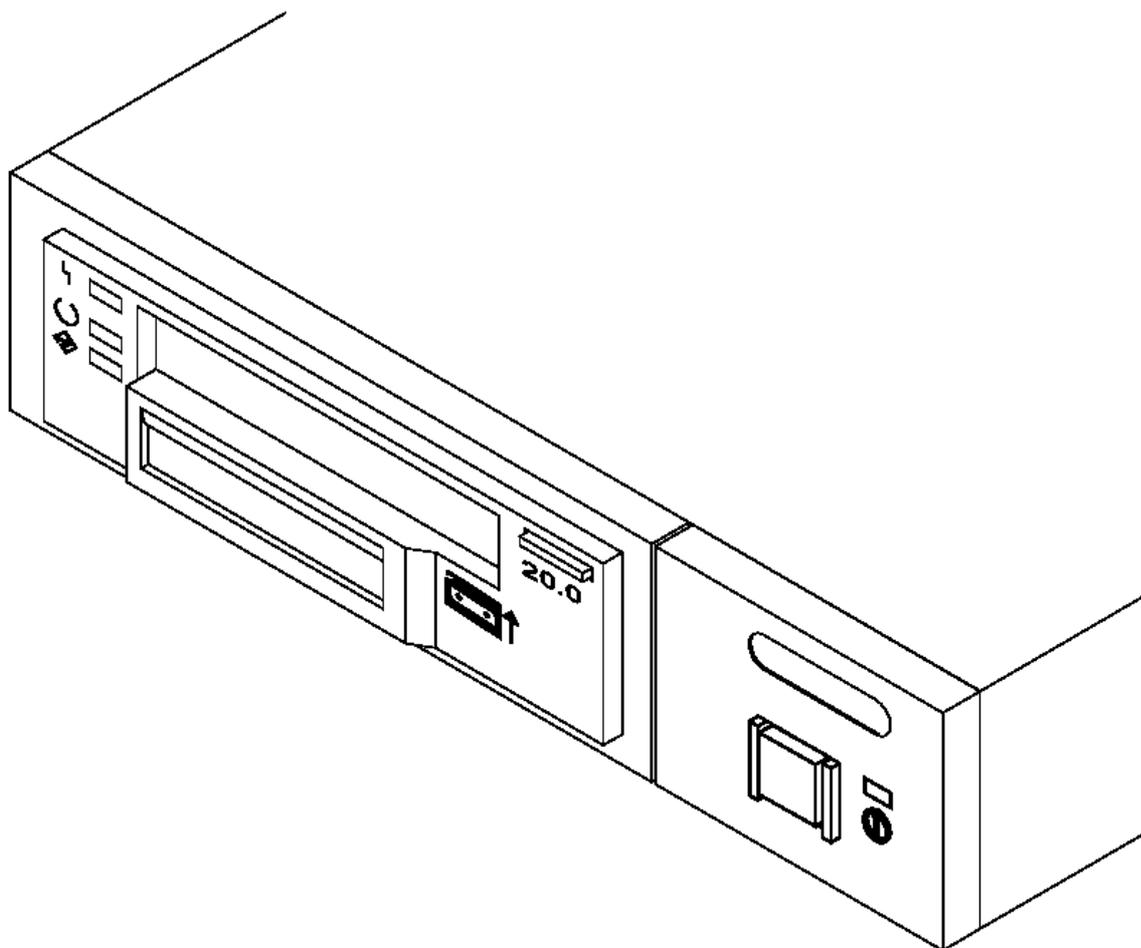
The 7208 20GB External 8mm Tape Drive Model 342 is an external storage device that connects to the IBM AS/400 and stores additional data.

The 7208 Tape Drive:

- Saves and restores system data files
- Archives important records
- Distributes upgrades to operating system software

The 7208 Tape Drive Model 342 uses a fast/wide differential interface and meets the Small Computer Systems Interface-2 (SCSI-2) standard X3.131-1994 of the American National Standards Institute (ANSI).

Figure 1 shows the front view of the 7208 Tape Drive.



A39M0001

Figure 1. Front View of the 7208 Tape Drive Model 342

The 7208 Tape Drive features the following:

- Tape cartridge capacity of up to 20GB per cartridge (where GB equals 1 000 000 000 bytes).
- Data transfer rate of 3MB per second (where MB equals 1 000 000 bytes).
- Data compression hardware that increases tape cartridge capacity up to 40GB and transfer rate up to 6MB per second. (This feature is controlled by the system software and does not require special handling by the 7208 Tape Drive operator.)

Note: The actual capacity per cartridge varies, depending on the application and the type of data cartridge being used.

- A liquid crystal display (LCD) that provides operating and error messages.

Subtopics

- 1.1 System Requirement
- 1.2 Specifications

1.1 System Requirement

The system requirement for the 7208 Tape Drive is any AS/400 platform with an OS/400 operating system at level V4R1 (or higher) and one of the following attachment features:

- PCI external tape controller (feature code 2729)
- Magnetic media controller (feature code 6534)

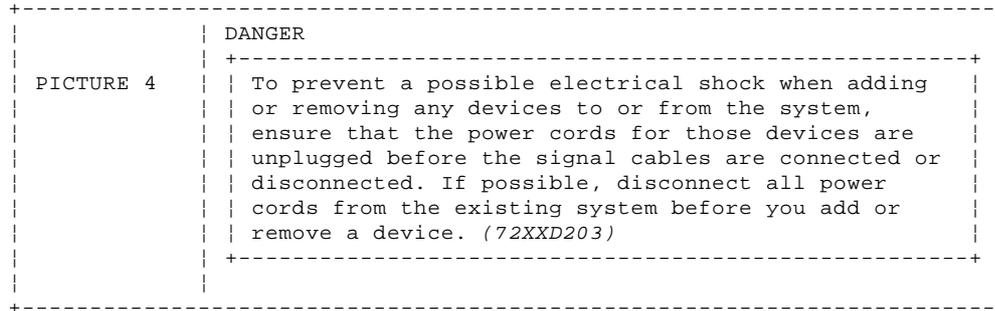
1.2 Specifications

| Figure 2. Specifications for the 7208 Tape Drive Model 342 | | |
|---|-------------------------------------|----------------------------|
| Physical Specifications | | |
| Width | 250 mm (9.8 in.) | |
| Depth | 275 mm (10.8 in.) | |
| Height | 55 mm (2.2 in.) | |
| Weight | 3.2 kg (7.1 lb) | |
| Power Specifications | | |
| kVA | 0.023 @ 120 V ac | |
| V ac | 100 to 125, or 200 to 240 | |
| Hertz | 50 to 60 | |
| Btu Maximum (watts) | 41.6 Btu/hr (12.2 watts) @ 240 V ac | |
| Power Factor | 0.4 to 0.6 | |
| Other Specifications | | |
| Altitude | 2135 m (7000 ft) | |
| Recommended Environment | | |
| Environmental Factor | Operating | Non-operating |
| Temperature | 16 to 32°C (60 to 90°F) | 1 to 60°C (34 to 140°F) |
| Relative Humidity (noncondensing) | 20 to 80% | 20 to 95% |
| Maximum Wet Bulb | 23°C (73°F) | 27°C (81°F) |
| Note: The operating limits include media. The storage and shipping limits do not include media. For media storage and shipping limits, see "Storage and Shipping Environments" in topic 5.3. | | |

2.0 Chapter 2. Setting Up the 7208 Tape Drive

This topic provides step-by-step instructions on how to properly install the 7208 Tape Drive Model 342.

Note: If you need assistance with the installation, contact your trained service personnel.



Before installing the 7208 Tape Drive, let it acclimate to the operating environment for as long as it has been away from the environment or for 24 hours, whichever is less.

Attention: The 7208 Tape Drive is a precision device that requires reasonable care in handling to prevent data loss or permanent damage to the device. Avoid bumping or dropping the 7208 Tape Drive.

To unpack the 7208 Tape Drive, simply remove the packing material from the box it was shipped in.

Subtopics

2.1 Performing the Installation

2.1 Performing the Installation

To install the 7208 Tape Drive Model 342, complete the following steps.

Subtopics

- 2.1.1 Step 1. Using the Inventory Checklist
- 2.1.2 Step 2. Checking the Electrical Outlets
- 2.1.3 Step 3. Assembling the Materials
- 2.1.4 Step 4. Setting the SCSI Address
- 2.1.5 Step 5. Placing the 7208 Tape Drive
- 2.1.6 Step 6. Performing a System Shutdown
- 2.1.7 Step 7. Connecting the SCSI Bus Cable
- 2.1.8 Step 8. Installing the SCSI Bus Terminator
- 2.1.9 Step 9. Connecting the Power Cables
- 2.1.10 Step 10. Performing the Checkout Procedure

2.1.1 Step 1. Using the Inventory Checklist

Make sure that you received the following items:

- Power cable (for the appropriate cable, see Appendix A, "Power Cables" in topic A.0)
- The *External Devices Warranty Information* (U.S., Canada, and Puerto Rico only)
- The *7208 20GB External 8mm Tape Drive Model 342 Setup and Operator Guide* (this guide)
- The *7208 20GB External 8mm Tape Drive Model 342 Service Guide* (required for your trained service personnel)
- The *External Devices Safety Information* manual
- System-to-device SCSI bus (signal) cable
- Terminator
- Data cartridge
- Test cartridge
- Cleaning cartridge

2.1.2 Step 2. Checking the Electrical Outlets

Make sure that the electrical outlets you use are properly grounded.

2.1.3 Step 3. Assembling the Materials

Refer to your system management or system hardware manuals to locate the information that you need to install the 7208 Tape Drive.

___ 1. **Get your system unit manuals now.** You may find the needed information under the topics:

- Installing an external SCSI tape drive
- SCSI controllers
- External SCSI devices

___ 2. **Do not continue** until you have located the manual that describes how to determine where the SCSI controller is located (where you make the cable connection).

Record the controller location here PICTURE 5

2.1.4 Step 4. *Setting the SCSI Address*

The SCSI address is a unique address that identifies the 7208 Tape Drive to your AS/400 system unit. Use the SCSI address switch to set the SCSI address of the 7208 Tape Drive. The switch (1 in Figure 3) is located on the rear of the tape drive. Figure 3 also shows the SCSI bus cable connectors 2 , the cooling fan 3 , and the power cable connector 4 .

Note: The SCSI address switch must be set to 0 (or the 7208 Tape Drive will not operate as an installed device).

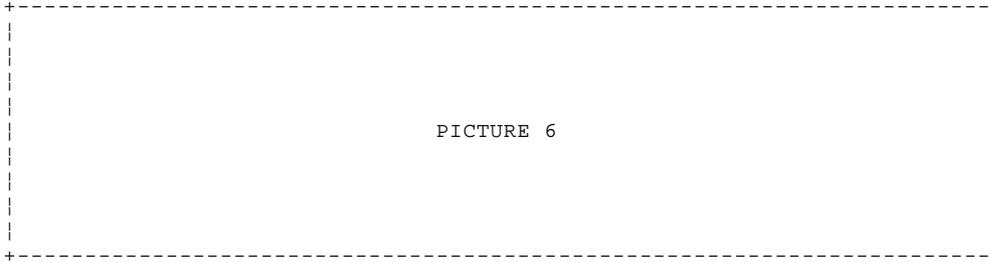


Figure 3. Rear View of the 7208 Tape Drive

Make sure that the SCSI address switch is set to 0. To set the switch, press the + or -- pushbutton.

2.1.5 Step 5. *Placing the 7208 Tape Drive*

The 7208 Tape Drive can be located anywhere that is convenient to your system unit. The only restrictions are the length of the power cord and the SCSI cable. Recommended locations are:

- In a clean environment
- Away from the floor
- In a horizontal position
- Where the tape cartridge can be easily inserted
- Where the liquid crystal display (LCD) can be easily viewed (for more information about the LCD, see "Liquid Crystal Display" in topic 3.3)
- Where the airflow around the unit is not obstructed

To place the 7208 Tape Drive, do the following:

- ___ 1. Set the 7208 Tape Drive in the location that you have previously determined.
- ___ 2. Connect the power cable to the 7208 Tape Drive. **(Do not plug it into the electrical outlet at this time.)**

Some of the external devices that attach to the system unit can be stacked. The 7208 Tape Drive should be placed at the top of the stack.

2.1.6 Step 6. Performing a System Shutdown

Attention: Do not attach the 7208 Tape Drive to an AS/400 system unit that is powered on. This can damage the 7208 Tape Drive, the system unit, or both.

To perform a system shutdown of the AS/400, do the following:

Note: Before doing a controlled shutdown of the system unit, notify other users who may be using the system.

- ___ 1. If it is on, do a controlled shutdown of the system unit (for instruction about doing a controlled shutdown, refer to your system documentation).
- ___ 2. Turn off the power to all external devices connected to the system unit.
- ___ 3. Turn off the power to the system unit.
- ___ 4. Unplug the system unit power cable from the electrical outlet.
- ___ 5. Unplug the power cables to all external devices from their electrical outlets.

2.1.7 Step 7. Connecting the SCSI Bus Cable

To connect the SCSI bus cable, do the following:

- ___ 1. If installed, remove the connector covers.
- ___ 2. On the rear of the 7208 Tape Drive (1 in Figure 4), attach the device connector end of the SCSI bus cable 2 to one of the SCSI connectors 3 .
- ___ 3. Push in until the cable is seated.
- ___ 4. Tighten the two thumbscrews 4 finger tight.



Figure 4. Connecting the SCSI Bus Cable to the 7208 Tape Drive. The view is from the side.

- ___ 5. Connect the other end of the SCSI bus cable to one of the SCSI controllers on the AS/400 (4 in Figure 5 in topic 2.1.8).

Note: Make a note of the number of the AS/400 SCSI controller to which you attach the SCSI bus cable; this information will be used later in "Step 10. Performing the Checkout Procedure." On the rear of the AS/400, the SCSI controllers are numbered 1 to 4, from left to right.

2.1.8 Step 8. *Installing the SCSI Bus Terminator*

Make sure to install a SCSI bus terminator on the 7208 Tape Drive.

To install the terminator (1 in Figure 5), align it with the unused SCSI connector (in this case, 2 on the 7208 Tape Drive 3) and push in until the terminator is seated. Tighten the thumbscrews finger tight.

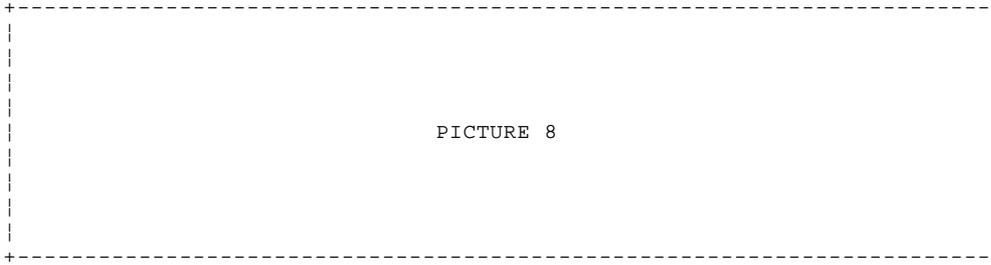


Figure 5. Attaching a Terminator to the 7208 Tape Drive. The view is from the side. The thumbscrews are not shown.

Note: The terminator and the SCSI bus cable can be connected to either the top or bottom SCSI connector on the 7208 Tape Drive.

2.1.9 Step 9. Connecting the Power Cables

To connect the power cables, do the following:

- ___ 1. Plug the 7208 Tape Drive power cable into the tape drive and into an electrical outlet.
- ___ 2. Plug the power cables for all external devices into electrical outlets.
- ___ 3. Plug the power cable for the system unit into an electrical outlet.
- ___ 4. Turn on the power to all of the external devices other than the 7208 Tape Drive.
- ___ 5. Review the information in "Indicator Lights" in topic 3.2 and "Liquid Crystal Display" in topic 3.3. Then watch for the following while turning on the power to the 7208 Tape Drive:
 - The power-on light comes on and stays on.
 - All three status lights come on, then turn off after approximately 35 seconds (indicating that the Power-On Self Test (POST) has completed successfully).
 - A series of messages display on the LCD, ending with the message **READY-NOTAPE**. (If you change the display language while powering on, the **READY-NOTAPE** message and all subsequent messages appear in the chosen language. For more information, see "Changing the Display Language" in topic 3.4.)

Note: If the POST does not complete successfully, the 7208 Tape Drive has detected an internal fault and must be repaired. Contact your service representative. **Do not continue with the installation at this time.**

- ___ 6. Turn on the power to the system unit.

2.1.10 Step 10. Performing the Checkout Procedure

Verify that the 7208 Tape Drive was automatically configured to the AS/400 software by doing the following:

1. Log into the AS/400 (OS/400 operating system).
2. At the AS/400 Main Menu command line, type **wrkcfgsts** and press Enter. The Work with Configuration Status (WRKCFGSTS) screen displays.
3. In the Type field type ***dev** and in the Configuration description field type ***tap**. Press Enter. The Work with Configuration Status screen displays a list of the tape devices that are connected to the AS/400 (see Figure 6).

Note: If necessary, use the Page Down key to view more devices that are connected to the system.

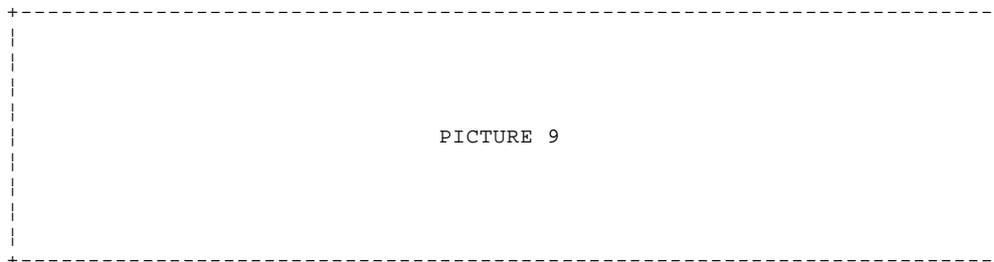


Figure 6. The Work with Configuration Status Screen. The screen shows a list of the SCSI devices that are connected to the AS/400.

4. If you already know the 7208 Tape Drive that you are configuring by its number in the Description column, go to the next step. If you do not know the number of your 7208 Tape Drive:
 - a. At the command line, type **wrkhdwsc *stg** and press Enter. The Work with Storage Resources screen displays a list of devices attached to the SCSI controllers on the AS/400.
 - b. Refer to the "Step 7. Connecting the SCSI Bus Cable" in topic 2.1.7 for the number of the SCSI controller to which the 7208 Tape Drive is attached.
 - c. In the Resource column of the Work with Storage Resources screen, locate the SCSI controller number that was identified in the preceding step (controller number 1 on the AS/400 is identified as SI01 in the Resource column, controller 2 is SI02, and so on).
 - d. Type **9** next to the tape controller beneath the SCSI controller number. Press Enter. The Work with Storage Controller Resources screen displays. The number of the 7208 Tape Drive that you are configuring displays in the Resource column.
5. In the Description column (see Figure 6), locate the 7208 Tape Drive that you are configuring (identified as TAPxx, where xx equals the system-generated or user-defined number of the device).

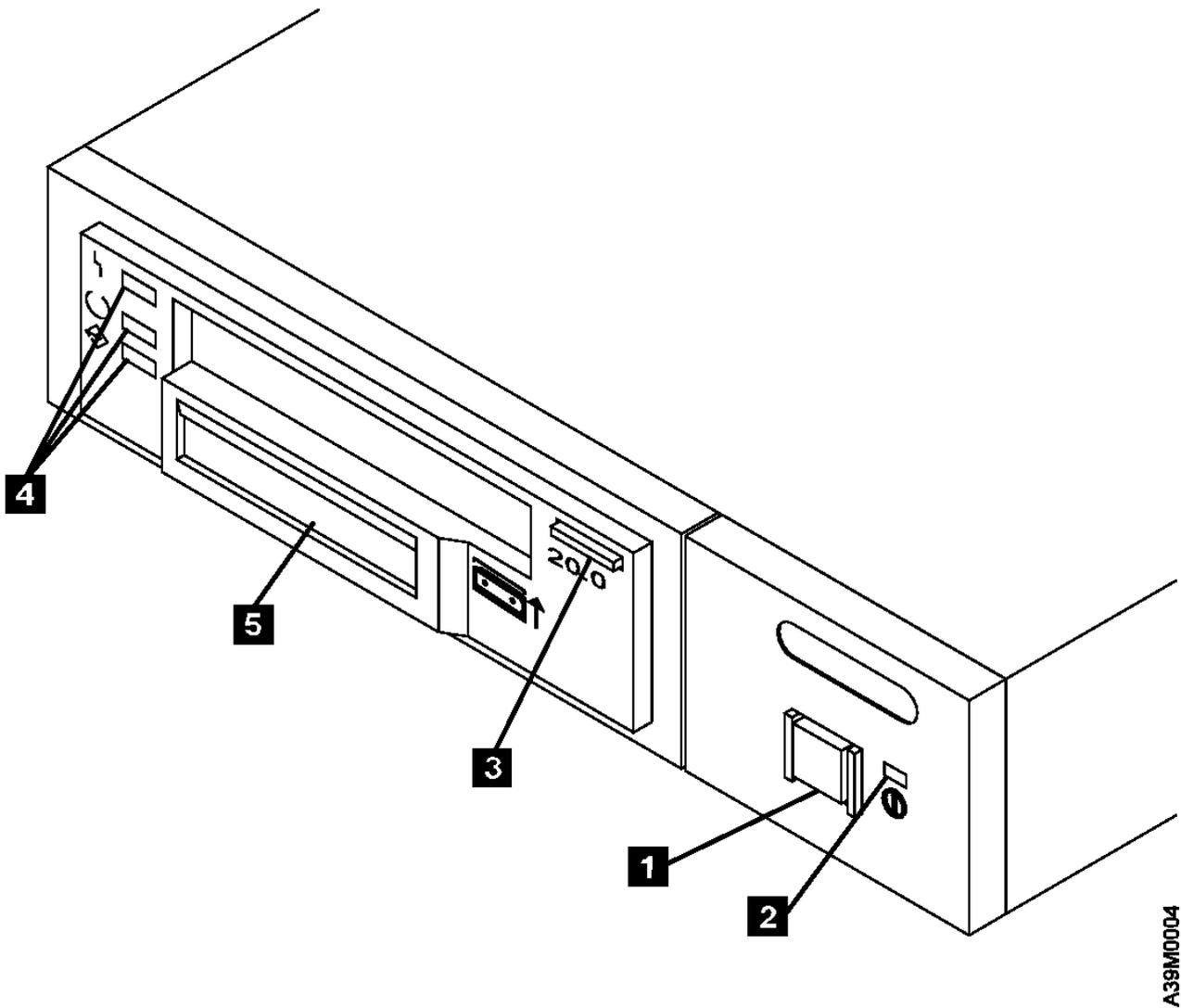
Note: If the tape drive that you are configuring does not appear in the Description column, refer to the maintenance analysis procedures in the *7208 20GB External 8mm Tape Drive Model 342 Service Guide*.
6. (Optional) To verify that the 7208 Tape Drive can correctly process the tape, perform the following procedure and choose one or more of the tests.
 - a. At the command line, type **vfytap** and press Enter. The Verify Tape (VFYTAP) screen displays.
 - b. In the Device field, type the name of the device (for example, **tap16**) and press Enter. The Tape Device Test Menu displays.
 - c. Select one of the following tests, then follow the instructions on each screen:
 - 1 Basic read/write test** (takes approximately 3 minutes)
 - 2 Read/write reliability test** (takes approximately 30 minutes)

This completes the 7208 Tape Drive installation.

3.0 Chapter 3. Using the 7208 Tape Drive

This topic describes the operator controls and indicator lights on the 7208 Tape Drive. It also describes the liquid crystal display, gives instructions for loading and unloading a tape cartridge, and tells how to clean the tape drive.

Figure 7 shows a front view of the 7208 Tape Drive.



A39M0004

Figure 7. Front View of the 7208 Tape Drive Model 342

Subtopics

- 3.1 Operator Controls
- 3.2 Indicator Lights
- 3.3 Liquid Crystal Display
- 3.4 Changing the Display Language
- 3.5 Loading and Unloading Tape Cartridges
- 3.6 Cleaning the Tape Drive

3.1 *Operator Controls*

The 7208 Tape Drive has the following operator controls.

Subtopics

3.1.1 Power Switch

3.1.2 Unload Button

3.1.1 *Power Switch*

The power switch (1 in Figure 7 in topic 3.0) is a push button switch that enables the power to be turned on or off. When the 7208 Tape Drive is on, the power-on light 2 is on.

Note: The PICTURE 11 symbol beside the power switch is an International Organization for Standardization (ISO) symbol for a push button switch.

3.1.2 *Unload Button*

The unload button 3 enables a tape cartridge to be ejected. The unload button operates only when the 7208 Tape Drive power is on. To remove a tape cartridge, press and hold the unload button for about one second.

3.2 *Indicator Lights*

The 7208 Tape Drive Model 342 has the following indicator lights.

Subtopics

3.2.1 Power-On Light

3.2.2 Status Light

3.2.1 *Power-On Light*

When the 7208 Tape Drive is turned on, the power-on light 2 comes on and stays on.

3.2.2 Status Light

Three status lights 4 and their ISO symbols appear on the 7208 Tape Drive as follows:

-  **Fault (amber)**
-  **Ready (green)**
-  **Activity (green)**

The combinations of the lights and their definitions are shown in Figure 8.

| Figure 8. Status Lights on the 7208 Tape Drive | | |
|--|----------------------|---|
| Status Lights | Status | Status of 7208 Tape Drive |
| PICTURE 13 Fault | On | The Power-On Self Test (POST) is running. |
| PICTURE 14 Ready | On | |
| PICTURE 15 Activity | On | |
| PICTURE 16 Fault | Off or On | One of the following conditions exists: <ul style="list-style-type: none"> <input type="checkbox"/> The power is off (Fault light is off). <input type="checkbox"/> The POST has completed successfully, but no tape cartridge has been inserted. If the Fault light is on, cleaning is required. See "Cleaning the Tape Drive" in topic 3.6. |
| PICTURE 17 Ready | Off | |
| PICTURE 18 Activity | Off | |
| PICTURE 19 Fault | Off or On | A tape cartridge has been inserted: <ul style="list-style-type: none"> <input type="checkbox"/> The 7208 Tape Drive is ready to receive commands from the system (whether the Fault light is on or off). <input type="checkbox"/> If the Fault light is on, cleaning is required. See "Cleaning the Tape Drive" in topic 3.6. <input type="checkbox"/> If the Activity light flashes, a tape cartridge is in the drive and tape movement is occurring. If the light is off, no tape movement is occurring. |
| PICTURE 20 Ready | Off | |
| PICTURE 21 Activity | Flashing or Off | |
| PICTURE 22 Fault | Flashing | The 7208 Tape Drive has detected an internal fault that requires corrective action: <ul style="list-style-type: none"> <input type="checkbox"/> Reset the error by turning the power off to the 7208 Tape Drive, then turning it back on, or by holding down the unload button for about 15 seconds. <input type="checkbox"/> If the Fault light still |
| PICTURE 23 Ready | Off or On | |
| PICTURE 24 Activity | Off, On, or Flashing | |

Status Light

| | | |
|------------------------|-----------------|--|
| | | flashes after the reset, contact your service representative. |
| PICTURE 25 Fault | On | The tape drive requires cleaning. See "Cleaning the Tape Drive" in topic 3.6. |
| PICTURE 26 Ready | Off or On | <input type="checkbox"/> If the Ready light is on, a tape cartridge is in the drive. If the light is off, a cartridge is not in the drive. |
| PICTURE 27 Activity | Flashing or Off | <input type="checkbox"/> If the Activity light flashes, a tape cartridge is in the drive and tape movement is occurring. If the light is off, no tape movement is occurring. |

3.3 Liquid Crystal Display

The 7208 Tape Drive features a liquid crystal display (LCD) (5 in Figure 7 in topic 3.0). The LCD provides operating and error messages.

Figure 9 shows a list of messages that display on the LCD.

| Figure 9. LCD Messages | |
|-------------------------------------|--|
| Reset Messages | |
| RESET | The first message to appear during the power-on sequence. |
| MODEL: | Variable information about the tape drive, in this case IBM-20GB . |
| SUBMOD: | The submodel number of the tape drive. |
| SN: | The serial number of the tape drive. |
| CODE: | The level of the tape drive's firmware. |
| LAST CLN: | The number of hours since the last cleaning. |
| COMPRESSION: | Whether data compression is turned on (the default) or turned off. |
| SINGLE ENDED or DIFFERENTIAL | The type of SCSI input/output electrical interface. |
| WIDE | The width of the SCSI bus (measured in bits or bytes). |
| SCSI ID: | The SCSI address of the tape drive (0 through 15). The default is 0. |
| LANGUAGE: | The current language used on the LCD. To change the language, turn off the power to the tape drive. Press and hold the unload button immediately after turning the power back on. When the desired language displays, release the unload button. |
| Tape Drive Status Messages | |
| READY-NOTAPE | The tape drive is ready to accept a cartridge. |
| □ □ LOADING.... | The tape drive is loading the tape. |
| □ □ READY-TAPE | The tape drive successfully loaded the tape and is ready for read or write operations. |
| □ □ ILLEGAL TAPE | An unsuitable tape has been loaded and rejected. |
| << EJECT===== | The unload button was pressed. The tape drive will eject the cartridge as soon as it finishes the current operation. |
| □ □ EJECT PREVNT | The unload button was pressed, and the system software has issued a command to prevent the eject function. |
| Tape Motion Messages | |
| □□ READ+ = | The tape drive is reading data. The + sign appears when the data is compressed. The boxes () represent the amount of tape processed (out of a total of six boxes). The = sign represents the amount of unprocessed tape. |
| □□ WRITE+ = | The tape drive is writing data. The + sign appears when the data is compressed. |
| □/□ PROTECTED | The tape drive cannot write data because the data cartridge is write-protected. |
| □/□ ILLEGAL WRT | The tape drive cannot write to the type of data cartridge inserted. This message remains until a proper tape is inserted or a tape motion command is issued. |

| | |
|--------------------------|---|
| >> SEARCH ==== | A high-speed search is in progress. |
| << SEARCH ==== | |
| << REWIND ==== | The rewind function is in progress. |
| □ □ ERASE ===== | The tape drive is erasing data on the tape. As the data is erased, the equal signs (=) change to boxes (). |
| Cleaning Messages | |
| □`□ CLEAN SOON | The tape drive needs to be cleaned. |
| □`□ MUST CLEAN | The tape drive must be cleaned when advanced metal-evaporated (AME) media is inserted after using metal particle (MP) media. |
| □`□ CLEANING | Cleaning is in progress. |
| □`□ DEPLETED | The cleaning tape in the cartridge is used up and the tape drive will eject it. Insert a new cleaning cartridge. |
| Error Conditions | |
| LAST 3 ERRORS | A hardware error has occurred. The LCD displays the last three error codes, with ERR 1: xx yy zz as the most recent. xx = the fault symptom code (FSC). yy and zz = additional information for product support personnel (the information may or may not be present). To resolve the error, refer to Appendix B, "Fault Symptom Codes and Error Recovery Procedure Numbers" in topic B.0. |
| ERR 1: xx yy zz | |
| ERR 2: xx yy zz | |
| ERR 3: xx yy zz | |

3.4 Changing the Display Language

The text on the 7208 Tape Drive LCD is available in English, French, German, Italian, Portuguese, and Spanish. To change the language:

1. Turn off the power to the 7208 Tape Drive.
2. Press and hold the unload button immediately after turning on the power to the 7208 Tape Drive.
3. The LCD cycles through the available languages. When the desired language displays, release the unload button.

3.5 Loading and Unloading Tape Cartridges

To load and unload a tape cartridge, do the following. For information about the type of media to use, refer to Chapter 5, "Using the Media" in topic 5.0.

Note: To avoid problems with loading and unloading, use only one label on a cartridge.

Subtopics

3.5.1 Loading a Tape Cartridge

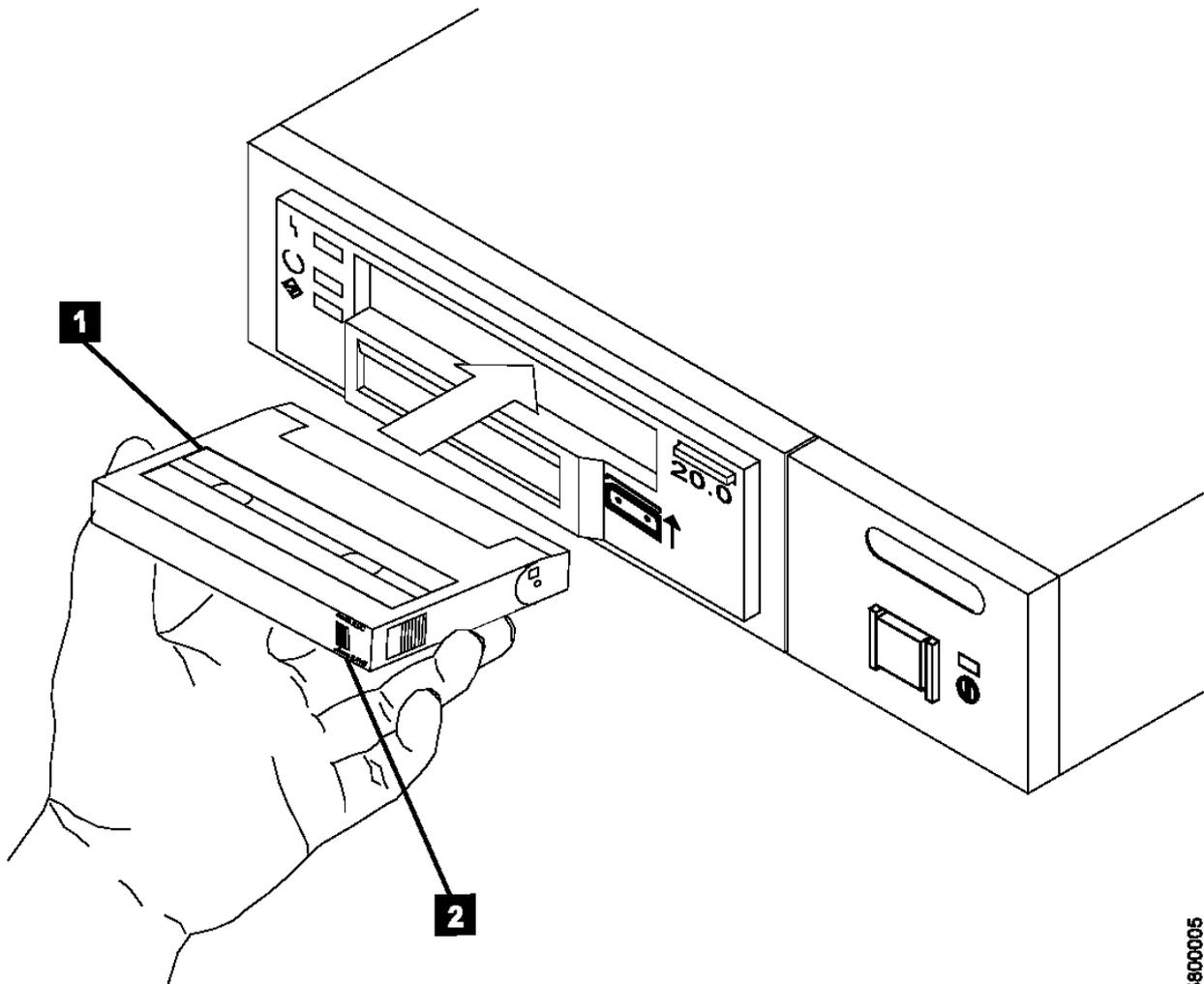
3.5.2 Unloading a Tape Cartridge

3.5.1 Loading a Tape Cartridge

To load a tape cartridge:

1. Make sure that the 7208 Tape Drive power is on (the power-on light should be on).
2. Grasp the cartridge 1 by the outer edges, with the window side up and the write-protect switch 2 facing you.

Note: See "Setting the Write-Protect Switch" in topic 5.5 to make sure that the write-protect switch is properly set.



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Figure 10. Loading a Tape Cartridge into the 7208 Tape Drive

3. Slide the cartridge into the opening on the front of the 7208 Tape Drive until the loading mechanism pulls the cartridge into the drive and the drive door closes (see Figure 10). The message **LOADING** displays.

To indicate that the load operation was successful, the message **READY-TAPE** displays and the Ready status light comes on.

3.5.2 Unloading a Tape Cartridge

To unload a tape cartridge:

1. Make sure that the 7208 Tape Drive power is on (the power-on light should be on).
2. Press the unload button.

The 7208 Tape Drive rewinds, unloads, and ejects the tape. The process may take from 15 seconds to several minutes, depending on the position of the tape and the amount of data written. On the LCD, the message **EJECT** displays, followed by the message **READY-NOTAPE**. The status lights respond as follows:

- The Ready light turns off.
- The Activity light flashes during the unload operation.
- The Activity light turns off when the cartridge is ejected from the tape drive.

Subtopics

3.5.2.1 Resolving Unload Error Messages

3.5.2.1 Resolving Unload Error Messages

If the tape cartridge fails to eject and the LCD displays the last three error messages (**ERR 1** being the most recent), an error condition has occurred. To resolve the error condition:

1. Write down the error message shown on the LCD. This may be helpful if additional analysis is needed.
2. Press the 7208 Tape Drive power switch to turn off the power.
3. Manually reset the drive by pressing the 7208 Tape Drive power switch (to turn on the power).
 - a. Wait approximately 35 seconds for the POST to complete.
 - b. Wait for the **READY-TAPE** message to display.
4. Press the unload button.
5. When the cartridge ejects, refer to Appendix B, "Fault Symptom Codes and Error Recovery Procedure Numbers" in topic B.0 to resolve the error message that you wrote down in Step 1.

If the cartridge does not eject, refer to the section on manually removing a tape cartridge in the *7208 20GB External 8mm Tape Drive Model 342 Service Guide*.

3.6 Cleaning the Tape Drive

Clean the 7208 Tape Drive:

- After you use a metal particle (MP) tape, such as a 112-meter tape, a 160-meter tape, or all tapes that were compatible with previous 8mm drives
- After a maximum of 72 hours of tape motion

You must clean the tape drive after using MP media. If you use advanced metal-evaporated (AME) media after using MP media, the LCD prompts you to clean the tape drive by displaying the message **MUST CLEAN**.

The 7208 Tape Drive counts the number of hours of tape motion and indicates when it is time to clean the tape drive by displaying the message **CLEAN SOON** and turning on the Fault status light.

To clean the tape drive, use only the IBM 8mm Cleaning Cartridge (part number 59H2898). For uninterrupted operation, have one or more spare cleaning cartridges available.

Attention: Do not operate the 7208 Tape Drive Model 342 in a poor air-quality environment. If your environment contains an excessive amount of particulates, they may permanently damage the media, the drive, or both. Contact your service representative for more information.

To load the cleaning cartridge:

1. Make sure that the 7208 Tape Drive power is on and the Power-On Self Test has completed.
2. Grasp the cleaning cartridge by the outer edges, with the window side up and the write-protect switch facing you (refer to Figure 10 in topic 3.5.1).
3. Slide the cartridge into the opening on the front of the 7208 Tape Drive until the loading mechanism pulls the cartridge into the drive and the drive door closes.

After the cleaning cartridge has been fully inserted into the 7208 Tape Drive, the remainder of the cleaning process is automatic. The 7208 Tape Drive:

1. Loads the cleaning tape into the tape drive
2. Turns on the Fault status light (if the light is off)
3. Cleans the drive by moving the cleaning tape forward for approximately two minutes (the Fault status light comes on and the message **CLEANING** displays)
4. Unloads and ejects the cleaning tape when the cleaning operation is complete

The cleaning cartridge can be used for a minimum of 18 cleaning operations. If you attempt to use the depleted cartridge, the 7208 Tape Drive automatically detects the error, ejects the cartridge, and displays the message **DEPLETED**. The Fault status light remains on to indicate that cleaning is still required. Replace the depleted cartridge with a new cleaning cartridge.

4.0 Chapter 4. Removing the 7208 Tape Drive

This topic describes how to remove the 7208 Tape Drive Model 342 after it has been installed.

| | |
|------------|---|
| PICTURE 29 | <p>DANGER</p> <p>To prevent a possible electrical shock when adding or removing any devices to or from the system, ensure that the power cords for those devices are unplugged before the signal cables are connected or disconnected. If possible, disconnect all power cords from the existing system before you add or remove a device. (72XXD203)</p> |
|------------|---|

Attention: Damage as a result of improper handling may void your equipment warranty.

Subtopics

4.1 Removal Checklist

4.1 Removal Checklist

When removing the 7208 Tape Drive, perform the following steps:

Attention: Failure to perform the following steps in sequence before you add or delete a device may result in data loss or system failure.

- ___ 1. If loaded, remove the tape cartridge from the drive by pressing the unload button while the 7208 Tape Drive power is on.
- ___ 2. Remove the 7208 Tape Drive from the system configuration (for instructions, refer to your system manuals).

Attention: Failure to inform the operating system before you add or delete a device may result in data loss or a system fault.

- ___ 3. Turn off the power to the 7208 Tape Drive.
- ___ 4. Turn off the power to all external devices attached to the system.
- ___ 5. Turn off the power to the system unit.
- ___ 6. Unplug the power cable for the 7208 Tape Drive from the electrical outlet.
- ___ 7. Unplug the system unit power cable from the electrical outlet.

Attention: When SCSI bus (signal) cables are connected to a system unit, they **must** also be connected to a device. Do not leave the SCSI bus cable connected to the system if the device for that cable has been removed.

- ___ 8. Disconnect the SCSI bus cable from the system unit.
- ___ 9. Disconnect the SCSI bus cable from the 7208 Tape Drive.
- ___ 10. Remove the 7208 Tape Drive and place it in the new location.
- ___ 11. Reinstall the 7208 Tape Drive (see Chapter 2, "Setting Up the 7208 Tape Drive" in topic 2.0).

5.0 Chapter 5. Using the Media

Use only IBM 8mm cartridges with the 7208 Tape Drive.

Subtopics

- 5.1 Types of 8mm Cartridges
- 5.2 Guidelines for Using Tape Cartridges
- 5.3 Storage and Shipping Environments
- 5.4 Operating in Harsh Environments
- 5.5 Setting the Write-Protect Switch
- 5.6 Ordering Tape Cartridges

5.1 Types of 8mm Cartridges

The 7208 Tape Drive Model 342 is shipped with an advanced metal-evaporated (AME) data cartridge, an AME test cartridge, and a cleaning cartridge.

Data Cartridge

Use the AME data cartridge for saving or restoring your programs or data.

Large and small labels are shipped with the data cartridge. To avoid problems with loading and unloading a tape, use only the small label on the tape cartridge and place the label in location 1 shown in Figure 11. Place the large label on the cartridge container.

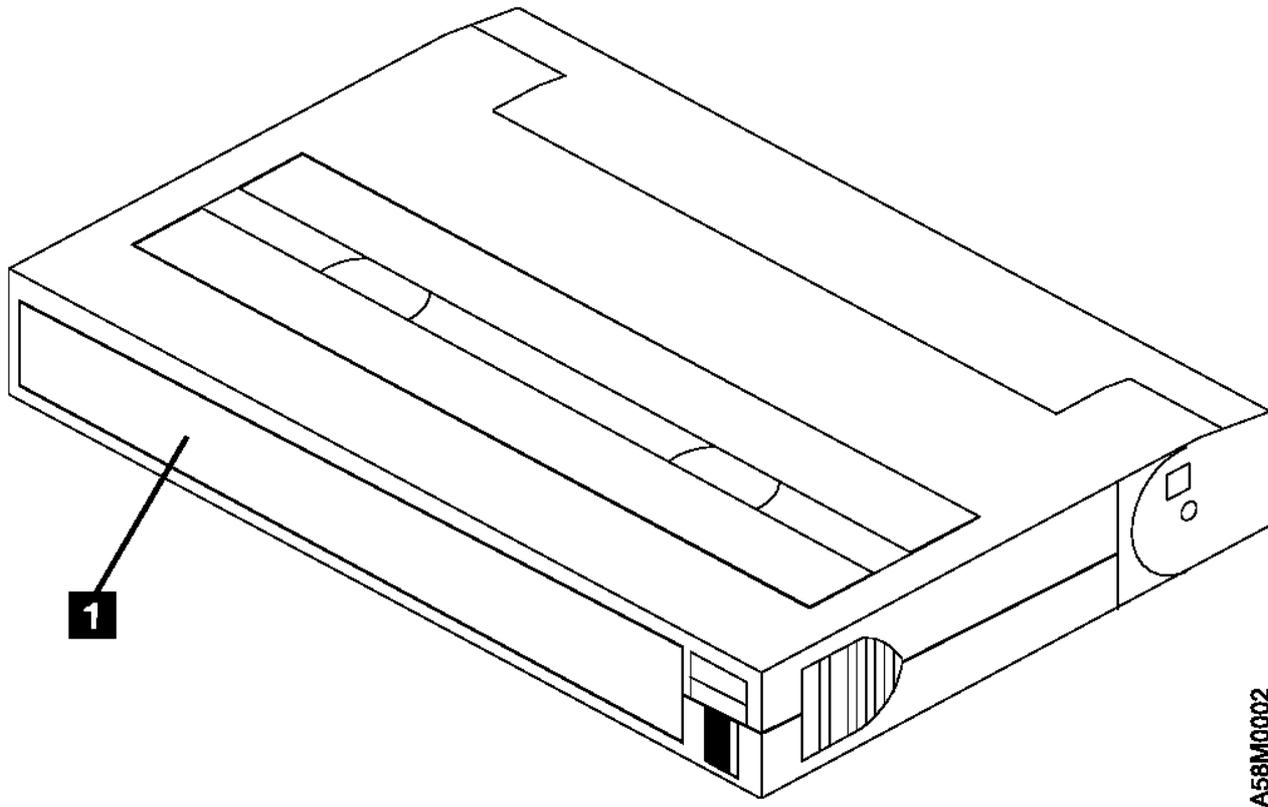


Figure 11. Placement of Label on an 8mm Data Cartridge

Test Cartridge

Use the specially labeled test cartridge to perform diagnostics on the drive. Do not use it to save or restore programs or data.

Cleaning Cartridge

Use the specially labeled cleaning cartridge to clean the tape drive (see "Cleaning the Tape Drive" in topic 3.6).

To order additional cartridges, refer to "Ordering Tape Cartridges" in topic 5.6.

5.2 Guidelines for Using Tape Cartridges

Observe the following guidelines for using media with the 7208 Tape Drive Model 342:

Attention: Do not use video-grade cartridges, as they are hazardous to the 7208 Tape Drive and will void your warranty.

Before using a cartridge, let it acclimate to the operating environment for as long as it has been away from the environment or for 24 hours, whichever is less.

Use only IBM 8mm cartridges with the 7208 Tape Drive Model 342. The 7208 Tape Drive:

- Reads from and writes to AME cartridges
- Reads from metal particle (MP) cartridges

To order tape cartridges, see "Ordering Tape Cartridges" in topic 5.6.

Attention: Clean the 7208 Tape Drive:

- After you use an MP tape cartridge prior to using an AME cartridge
- Whenever you replace a worn tape
- Whenever you replace a defective tape
- Whenever the **CLEANING** message displays

For more information, see "Cleaning the Tape Drive" in topic 3.6.

Do not write to previously written software distribution tapes. Often these tapes will not support being rewritten without modifications to the cartridge. If the cartridge is modified, it is possible to cause tape jams or tape misalignment.

Back up and then discard any tape that repeatedly produces error messages. (The error information is in the System Error Log.)

Do not open the door that covers the tape in the data cartridge. This door protects the magnetic tape from dirt, dust, and damage.

Do not touch the tape material. Any substance transferred to the tape by touching could cause loss of data.

Do not operate the 7208 Tape Drive in a dusty environment.

Do not store tape cartridges or the 7208 Tape Drive in a dusty environment.

Store tape cartridges vertically.

5.3 Storage and Shipping Environments

Before using an 8mm tape cartridge, let it acclimate by placing the cartridge in the operating environment for as long as it has been away from the environment, or for 24 hours, whichever is less.

Acclimation is necessary for any data cartridge that has been exposed to a different humidity environment or to temperature changes of 11°C (20°F) or more.

The 8mm data cartridge can be stored and shipped in a wide variety of environments. Figure 12 provides a description of these environments.

| Figure 12. Recommended Environment for 8mm Data Cartridges | | |
|--|---------------------------|-------------------------------|
| Environmental Factor | Storage | Shipping |
| Temperature | 5 to 32°C (41 to 90°F) | -40 to 45°C (-40 to 113°F) |
| Relative Humidity (noncondensing) | 20 to 80% | 20 to 80% |
| Maximum Wet Bulb | 26°C (79°F) | 26°C (79°F) |

5.4 Operating in Harsh Environments

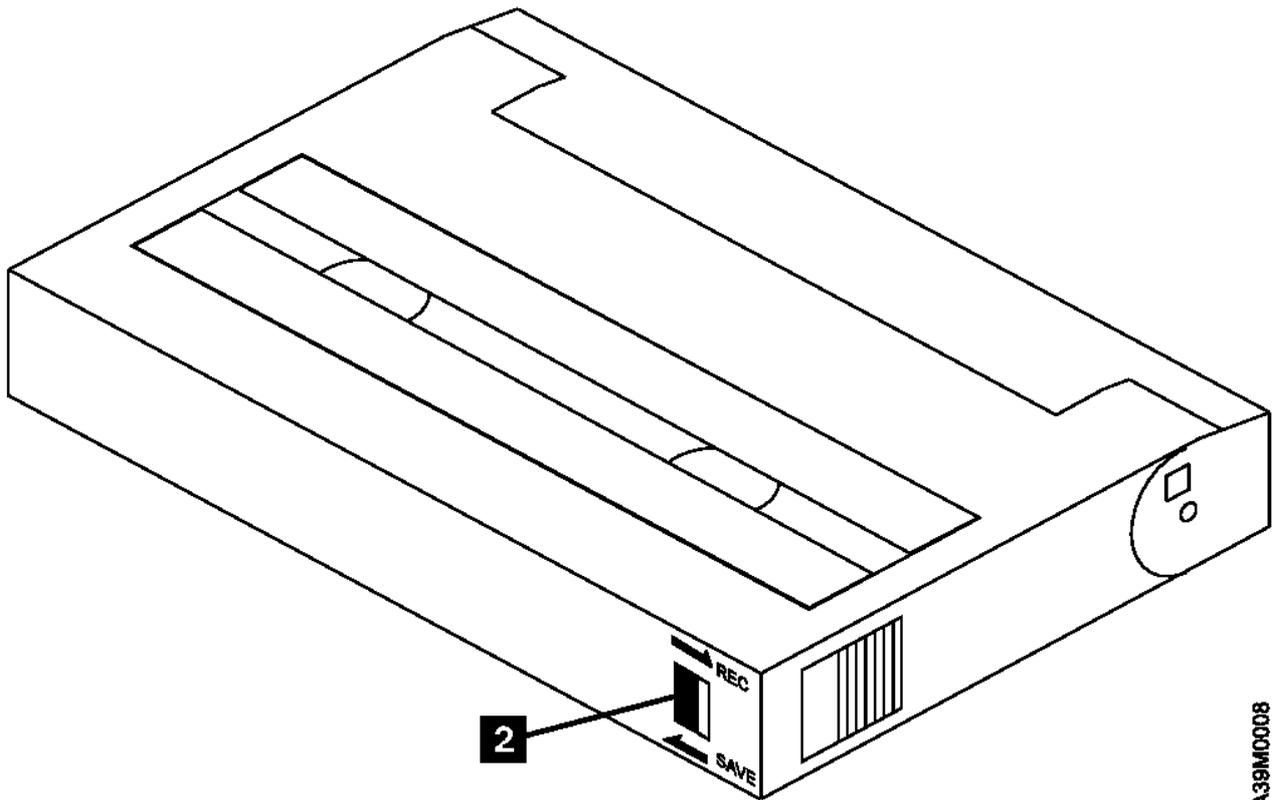
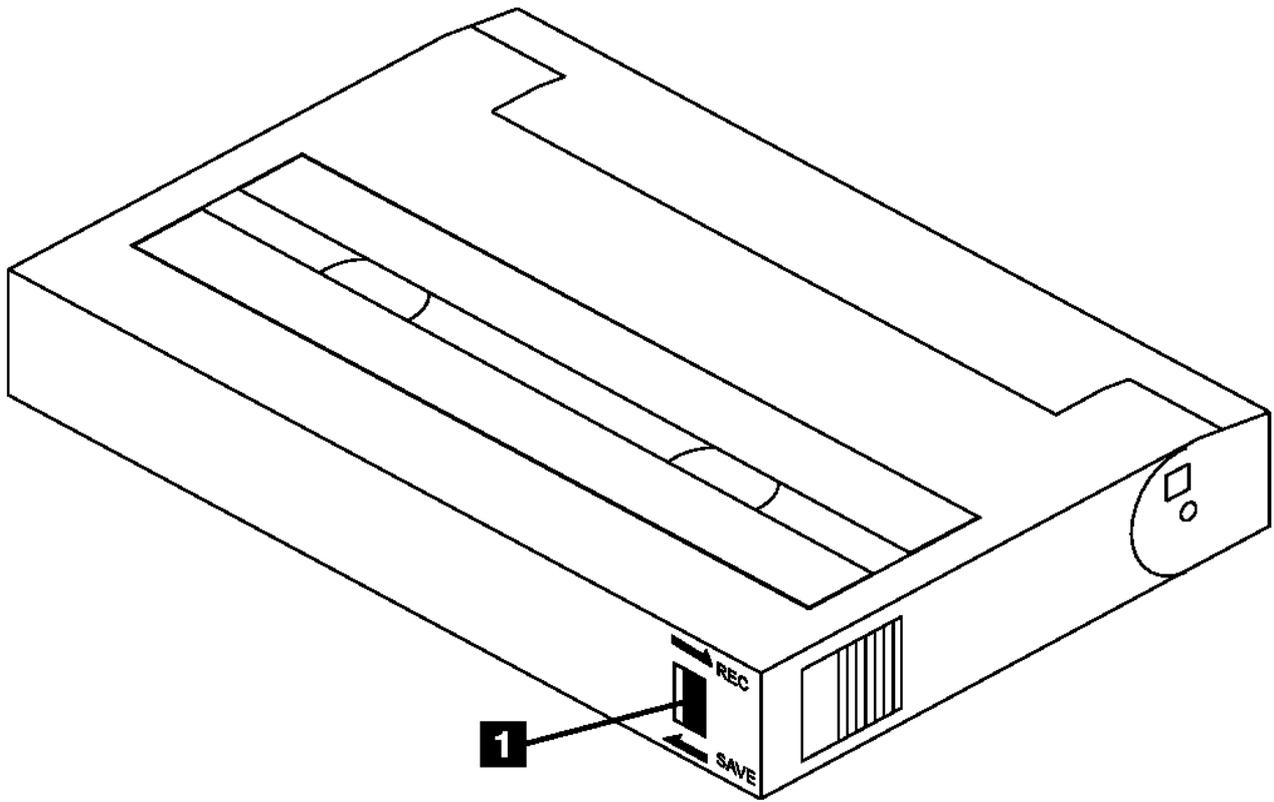
The 7208 Tape Drive is ideally suited to streaming operations, as opposed to multiple stop-and-start, random-search tape operations. When the tape is used for frequent stop-and-start operations, it is beneficial to still have as much streaming movement as possible. This can be accomplished by ensuring that any save or restore operation is the only active operation being performed.

Do not use as an archival tape any tape that has been used outside of the ranges specified in Figure 12 in topic 5.3 for an extended period of time. The magnetic and physical strength of the tape will have deteriorated as a result of its exposure to the environment. Do not store important data on such a tape; transfer the data to a newer tape for reliable archiving.

5.5 Setting the Write-Protect Switch

The position of the write-protect switch on the 8mm tape cartridge determines when you can write to the tape.

- When the switch is set to **SAVE** 1 , data cannot be written to or read from the tape.
- When the switch is set to **REC** (Record) 2 , data can be written to and read from the tape.



A39M0008

Figure 13. Setting the Write-Protect Switch

5.6 Ordering Tape Cartridges

Figure 14 lists the tape cartridges that you can order for the 7208 Tape Drive Model 342. To order cartridges in the United States and Canada, call 1-888-IBM-MEDIA. To order cartridges in other locations, contact your local provider of IBM storage products.

| Figure 14. Tape Cartridges for the 7208 Tape Drive Model 342 | | |
|--|--|-------------------|
| IBM Part Number | Type of Cartridge | Length |
| 59H2671 | 8mm Data Cartridge (short length) | 22.5 m (74 ft) |
| 59H2678 | 8mm Data Cartridge | 170 m (558 ft) |
| 59H2898 | 8mm Cleaning Cartridge (to be used only with 20GB drives) | - - |

PICTURE 32

To avoid electrical shock, a power cable with a grounded attachment plug has been provided. Use only properly grounded outlets.

Power cables used in the United States and Canada are listed by Underwriter's Laboratories (UL) and certified by the Canadian Standards Association (CSA). The power cables consist of:

- Electrical cables, type SVT or SJT.
- Attachment plugs complying with National Electrical Manufacturers Association (NEMA) 5-15P, that is:
 - "For 115 V operation use a UL Listed Cable Set consisting of a minimum 18 AWG, Type SVT or SJT three conductor cable a maximum of 15 feet in length and a parallel blade, grounding type attachment plug rated at 15 A, 125 V."
 - "For 230 V operation in the United States use a UL Listed Cable Set consisting of a minimum 18 AWG, Type SVT or SJT three conductor cable a maximum of 15 feet in length, and a tandem blade, grounding type attachment plug rated at 15 A, 250 V."
- Appliance couplers complying with International Electrotechnical Commission (IEC) Standard 320, Sheet C13.

Power cables used in other countries consist of:

- Electrical cables, type HD21.
- Attachment plugs approved by the appropriate testing organization for the specific countries where they are used.
 - "For units set at 230 V (outside of U. S.): Use a Cable Set consisting of a minimum 18 AWG cable and grounding type attachment plug rated 15 A, 250 V. The Cable Set should have the appropriate safety approvals for the country in which the equipment is to be installed and marked 'HAR'."

Figure 15 lists the power cable part number, the country where the power cable can be used, and an index number to be matched with the receptacles shown in Figure 16. If your power cable does not match this information, contact your local dealer.

Figure 15. Power Cable Information

| Part Number | Country | Index |
|-------------------|---|-------|
| 1838574 Japan | Bahamas, Barbados, Bolivia, Brazil, Canada, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Netherlands Antilles, Panama, Peru, Philippines, Taiwan, Thailand, Tobago, Trinidad, U.S.A. (except Chicago), Venezuela | 1 |
| 6952300 US/Canada | Bahamas, Barbados, Bermuda, Bolivia, Brazil, Canada, Cayman Islands, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Japan, Korea (South), Mexico, Netherlands Antilles, Nicaragua, Panama, Peru, Philippines, Puerto Rico, Saudi Arabia, Suriname, Taiwan, Trinidad, U.S.A. (except Chicago), Venezuela | 2 |
| 6952301 6 ft | Chicago, U.S.A. | 2 |

7208 Tape Drive Setup and Operator Guide
Appendix A. Power Cables

| | | |
|------------------------|---|----|
| Chicago | | |
| 13F9940 Australia | Argentina, Australia, New Zealand | 3 |
| 13F9979 France | Abu Dhabi, Austria, Belgium, Bulgaria, Botswana, Egypt, Finland, France, Germany, Greece, Iceland, Indonesia, Korea (South), Lebanon, Luxembourg, Macau, Netherlands, Norway, Portugal, Saudi Arabia, Spain, Sudan, Sweden, Turkey, Yugoslavia | 4 |
| 13F9997 Denmark | Denmark | 5 |
| 14F0015 South Africa | Bangladesh, Burma, Pakistan, South Africa, Sri Lanka | 6 |
| 14F0033 United Kingdom | Bahrain, Bermuda, Brunei, Channel Islands, Cyprus, Ghana, Hong Kong, India, Iraq, Ireland, Jordan, Kenya, Kuwait, Malawi, Malaysia, Nigeria, Oman, People's Republic of China, Qatar, Sierra Leone, Singapore, Tanzania, Uganda, United Arab Emirates (Dubai), United Kingdom, Zambia | 7 |
| 14F0051 Switzerland | Liechtenstein, Switzerland | 8 |
| 14F0069 Italy | Chile, Ethiopia, Italy | 9 |
| 14F0087 Israel | Israel | 10 |
| 6952291 Colombia | Colombia, Paraguay, Uruguay | 11 |

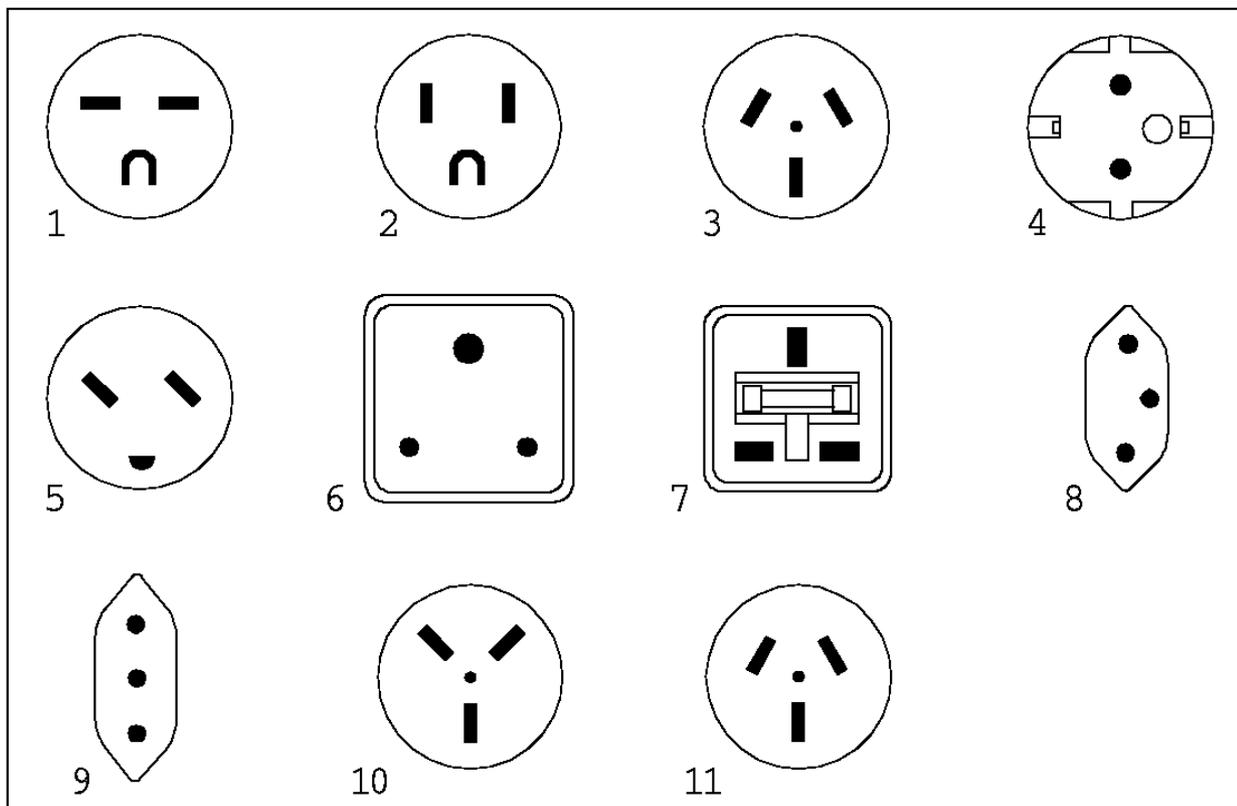


Figure 16. Types of Receptacles

Use Figure 17 to resolve error messages that appear on the LCD of the 7208 Tape Drive Model 342:

1. Determine the fault symptom code (FSC) in the error message (the first two digits in the message). For example, in error message **ERR 1: AD 58 C0**, the FSC is **AD**.
2. Locate the FSC in Figure 17 and identify the error recovery procedure (ERP) number for that FSC.
3. Locate the ERP number in Figure 18 in topic C.0, and identify the recommended error recovery procedure.

Note: Items in the Cause column are defined as follows:

| | |
|---------------------------|--------------|
| A = Application software | O = Operator |
| B = Bus (SCSI) | S = System |
| D = Drive | T = Tape |
| I = Informational message | |

| Figure 17. Fault Symptom Codes (FSC) and Error Recovery Procedure (ERP) Numbers | | | |
|---|---|------------|-----------------------------|
| FSC | Description | ERP Number | Cause |
| 02 | Invalid position for WRITE | 2 | O = 50% S = 50% |
| 03 | Tape is write protected for WRITE | 5 | D = 5% O = 90% T = 5% |
| 04 | LEOT encountered on current WRITE | 10 | I |
| 05 | Operation has aborted (as requested) | 11 | D = 50% O = 50% |
| 06 | LEOT encountered on the last WRITE | 10 | I |
| 08 | Compression data integrity check failed | 12 | D = 100% |
| 09 | Detected LEOT during READ | 10 | I |
| 0A | Length mismatch on READ | 15 | I |
| 0B | Uncorrectable block on READ | 8,6 | D = 10% T = 90% |
| 0C | EOD encountered on READ | 13 | I |
| 0D | Filemark encountered during a READ | 10 | I |
| 0E | Illegal condition for READ | 2 | D = 50% S = 50% |
| 0F | READ issued at blank tape | 4 | I |
| 10 | READ operation has aborted (as requested) | 11 | D = 50% O = 50% |
| 11 | Too many permanent READ errors, cannot sync | 8,6 | D = 10% T = 90% |
| | PEOT or PEOB encountered on a READ | | D = 50% |

| | | | |
|----|---|-------|-----------------------------|
| 14 | or VERIFY | 2,8,6 | O = 50% |
| 15 | Bad filemark encountered during a READ | 8,6 | T = 100% |
| 16 | Medium error detected during a READ | 8,6 | D = 10% T = 90% |
| 17 | Hardware error during a READ | 12 | D = 100% |
| 18 | READ decompression failed -- HW error | 12 | D = 100% |
| 19 | READ decompression CRC failed | 12 | D = 100% |
| 1C | Unknown or incompatible format | 14 | T = 100% |
| 1D | Hit setmark on READ | 10 | I |
| 26 | Not at legal place to WFM | 2 | O = 50% S = 50% |
| 27 | Tape is write protected for WFM | 5 | I |
| 28 | LEOT encountered during WFM | 10 | I |
| 31 | Setmark detected on SPACE/LOCATE | 10 | I |
| 32 | Filemark detected during SPACE/LOCATE | 10 | I |
| 33 | EOD encountered on SPACE/LOCATE | 10 | I |
| 34 | PEOT encountered on SPACE/LOCATE | 8,6 | T = 100% |
| 35 | PBOT encountered on SPACE/LOCATE | 2 | I |
| 36 | Format error during SPACE/LOCATE | 8,6 | D = 20% T = 80% |
| 37 | Uncorrectable block during a SPACE/LOCATE | 8,6 | D = 10% T = 90% |
| 38 | Medium error during SPACE/LOCATE | 8,6 | D = 20% T = 80% |
| 3A | Bad filemark during SPACE (2.3GB mode only) | 3 | T = 100% |
| 3B | SPACE/LOCATE has aborted (as requested) | 11 | D = 50% O = 50% |
| 3D | Lost in space | 8,6 | D = 20% T = 80% |
| 47 | Incompatible medium rejected after loading | 14 | O = 90% T = 10% |
| 4B | Illegal position for ERASE | 2 | O = 50% S = 50% |
| 4C | Tape is write protected for ERASE | 5 | D = 5% O = 90% T = 5% |
| 4E | ERASE has aborted (as requested) | 11 | D = 5% O = 90% S = 5% |
| 58 | Hardware error during SEND | 12 | D = 100% |

| DIAGNOSTIC | | | |
|------------|--|-----|----------|
| 61 | Header in wrong format when loading ucode | 8,6 | T = 100% |
| 63 | Control load image not valid | 8,6 | T = 100% |
| 65 | EEPROM load image not valid | 8,6 | T = 100% |
| 66 | Boot code old | 8,6 | T = 100% |
| 67 | Cannot program one of the memories | 12 | D = 100% |
| 69 | CRC in load image was not correct | 8,6 | T = 100% |
| 6D | Read buffer command failed | 12 | D = 100% |
| 71 | Illegal position to format partition | 2 | D = 50% |
| | | | O = 50% |
| 72 | Partitions are too big for tape | 2 | O = 100% |
| 74 | Partition format of tape failed | 8,6 | T = 100% |
| 75 | Partition format aborted | 8,6 | D = 5% |
| | | | O = 90% |
| | | | S = 5% |
| 79 | Failed position to a new partition | 8,6 | T = 100% |
| 7A | Partition switch aborted | 11 | D = 5% |
| | | | O = 90% |
| | | | S = 5% |
| 8C | Software hang, we are very confused | 12 | D = 100% |
| 8D | Software detects a hardware problem | 12 | D = 100% |
| 93 | Detect PEOP | 10 | A = 100% |
| 94 | Write Setmark failure | 6 | T = 100% |
| 95 | WRITE failure after retry limit exceeded | 8,6 | D = 30% |
| | | | T = 70% |
| 96 | WFM failure after retry limit exceeded | 8,6 | D = 30% |
| | | | T = 70% |
| 97 | Write EOD failure after retry limit exceeded | 8,6 | D = 30% |
| | | | T = 70% |
| 98 | Fill error, invalid BRT | 12 | D = 100% |
| 99 | Fill error, buffer empty | 12 | D = 100% |
| 9A | Deformatter interrupt timeout on search | 12 | D = 100% |
| 9B | Overwrite (bad readback; check block type) | 8,6 | D = 50% |
| | | | T = 50% |
| 9C | Formatter interrupt timeout on WRITE | 12 | D = 100% |
| 9D | Permanent write error, write recovery fail | 8,6 | D = 30% |
| | | | T = 70% |
| 9E | Permanent write error rewrite threshold | 8,6 | D = 30% |
| | | | T = 70% |
| | | | D = 30% |

| | | | |
|----|--|-----|--------------------|
| 9F | Servo zone readback check failure | 8,6 | T = 70% |
| A1 | Head sync error during WRITE | 8,6 | D = 90% T = 10% |
| A2 | Underrun error during WRITE | 12 | D = 100% |
| A3 | IPORT write buffer parity error | 12 | D = 100% |
| A4 | DPORT WRITE parity error | 12 | D = 100% |
| A5 | PPORT WRITE parity error | 12 | D = 100% |
| A6 | IPORT READ parity error | 12 | D = 100% |
| A7 | DPORT READ parity error | 12 | D = 100% |
| A8 | PPORT READ parity error | 12 | D = 100% |
| AC | Servo software error | 12 | D = 100% |
| AD | Servo hardware error | 8,6 | D = 10% T = 90% |
| AE | Not tracking | 8,6 | D = 40% T = 60% |
| AF | EOT encountered during a motion command | 2 | D = 100% |
| B0 | Not tracking -- loss of PLL | 8,6 | D = 40% T = 60% |
| B3 | LBOT WRITE failure | 8,6 | D = 30% T = 70% |
| B4 | LBOT ATM write failure | 8,6 | D = 30% T = 70% |
| B5 | Read manager could not read LBOT | 8,6 | D = 30% T = 70% |
| B6 | EOT encountered during buffer flush | 2 | I |
| C0 | Power-on reset occurred | 3 | I |
| C1 | Tape may have been changed | 3 | I |
| C2 | Mode Select parameters have changed | 3 | I |
| C3 | New ucode was loaded | 3 | I |
| C4 | Operator requested media removal | 11 | I |
| C5 | Incompatible media was rejected | 14 | I |
| C6 | Not ready, cause not known | 7,3 | I |
| C7 | Not ready, in process of becoming ready | 3 | I |
| C8 | A backup positioning command is required | 2 | I |
| C9 | Command requires a tape and none is loaded | 7,3 | I |
| CA | Log Threshold met | 3 | I |
| CB | Log Parameter changed | 3 | I |
| CC | Parameter List Length error in CDB | 2 | D = 50% S = 50% |

7208 Tape Drive Setup and Operator Guide
Appendix B. Fault Symptom Codes and Error Recovery Procedure Numbers

| | | | |
|----|---|----|--------------------|
| CD | Illegal Operation Code | 2 | D = 50% S = 50% |
| CE | Invalid field or reserved bits set in CDB | 2 | D = 50% S = 50% |
| CF | This LUN is not supported | 2 | D = 50% S = 50% |
| D0 | Invalid field in Parameter List (Mode Data) | 2 | D = 50% S = 50% |
| D1 | Illegal bit set in identify message | 2 | D = 50% S = 50% |
| D2 | Media removal is prevented | 2 | D = 50% S = 50% |
| D3 | Command has mode mismatch (variable/fixed) | 2 | D = 50% S = 50% |
| D4 | Illegal Transfer Length in CDB | 2 | D = 50% S = 50% |
| D6 | Tried to change Mode Params and not at LBOT | 2 | D = 50% S = 50% |
| D7 | Can't read medium incompatible format | 14 | D = 50% S = 50% |
| D8 | Overlapped commands attempted bad ITL nexus | 2 | D = 50% S = 50% |
| DA | Illegal bits set in ID message | 2 | D = 50% S = 50% |
| DB | Cannot write to tape not AME | 10 | I |
| DC | Rounding has occurred | 7 | I |
| DD | Not ready -- head sync tape | 2 | D = 50% S = 50% |
| DE | Density not supported | 2 | D = 50% S = 50% |
| E0 | Aborted in CDB phase, parity or other error | 12 | B = 100% |
| E1 | Aborted prior to Data phase, bad message | 12 | B = 100% |
| E2 | Aborted in Data phase, init detected error | 12 | B = 100% |
| E3 | Aborted in Data phase, bad message | 12 | B = 100% |
| E4 | Aborted after Data phase, bad message | 12 | B = 100% |
| E5 | Aborted after Data phase, other error | 12 | B = 100% |
| E6 | ABORT caused by SCSI Bus Parity Error | 12 | B = 100% |
| E7 | ABORT sent by initiator has been completed | 12 | B = 100% |

Appendix B. Fault Symptom Codes and Error Recovery Procedure Numbers

| | | | |
|----|---|----|--------------------|
| E8 | Drive needs cleaning | 1 | I |
| EA | Invalid mode (2.3GB) for data compression | 2 | D = 50% S = 50% |
| EB | Download in progress | 3 | D = 50% S = 50% |
| EC | Log parameter overflow (recovered error) | 10 | I |
| EE | Service may be required | 12 | D = 90% T = 10% |
| FA | Serial number invalid or blank | 12 | D = 100% |
| FC | Head sync value in EEPROM out of range | 12 | D = 100% |
| FD | EEPROM contains meaningless information | 12 | D = 100% |

C.0 Appendix C. Error Recovery Procedures

Use Figure 18 to resolve error messages that appear on the LCD of the 7208 Tape Drive Model 342:

1. Determine the fault symptom code (FSC) in the error message (the first two digits in the message). For example, in error message **ERR 1: AD 58 C0**, the FSC is **AD**.
2. Locate the FSC in Figure 17 in topic B.0 and identify the error recovery procedure (ERP) number for that FSC.
3. Locate the ERP number in Figure 18, and identify the recommended error recovery procedure. If two or more ERP codes are listed for the fault symptom code in Figure 17 in topic B.0, perform the action for the first code, then perform the action for the second code, and so on.

| Figure 18. Error Recovery Procedures | |
|--------------------------------------|---|
| ERP Number | Recommended Error Recovery Procedure |
| 1 | Warning Message, clean drive. |
| 2 | Application program error or user error using application. Retry operation. If this problem continues, notify application provider. |
| 3 | Reissue the failed command or command sequence. |
| 4 | Application attempted to read a blank tape. Either write to the tape or replace the tape with a tape containing data. |
| 5 | Tape is write protected and a write or erase was attempted. Either write-enable the tape or insert a write-enabled tape. |
| 6 | Perform the following until the operation can be completed: <ol style="list-style-type: none"> 1. Clean the drive 2. Retry the operation 3. Clean the drive 4. Replace the tape cartridge 5. If the error persists and there is an error in the system error log, call your service representative |
| 7 | Insert a data cartridge into the tape drive. |
| 8 | Perform one of the following actions: <ul style="list-style-type: none"> <input type="checkbox"/> Reset the tape drive by holding down the unload button until the RESET message appears; then release the button. <input type="checkbox"/> Send a SCSI bus reset (a hard reset). |
| 9 | Clean the tape drive and repeat the operation. |
| 10 | No action is necessary. |
| 11 | User has pushed the unload button. No action is required; the tape drive performed the requested operation. |
| 12 | The tape drive requires maintenance. |
| 13 | The tape drive has encountered the end of the media on a read or write operation. Mount the next tape and continue the tape operation. |
| 14 | The media type is not supported. Clean the drive and retry the operation with supported media. |
| 15 | The block size requested on the read operation does not match the block size that the tape was written at. Change the application's block size. |

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