TLZ07 Cassette Tape Drive and Autoloader

Owner's Manual

Order Number: EK-TLZ07-OM. B01

Digital Equipment Corporation

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- Reorient the receiving antenna.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so computer and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: *How to Identify and Resolve Radio-TV Interference Problems*. This booklet is available from the US Government Printing Office, Washington, DC 20402, Stock No. 004-000-00398-5.

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Pour la République féderal d'Allemagne

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Externe Datenkabel

Sollte ein Austausch der von Digital spezifierten Datenkabel nötig werden, muß der Betreiber für eine einwandfreie Funkentstörung sicherstellen, daß Austauschkabel im Aufbau und Abschirmqualität dem Digital Originalkabel entsprechen.

Contents

4 Verifying TLZ07 Cassette Tape Drive Installation

5 Using the TLZ07 Cassette Tape Drive

6 Preventive Maintenance and Problem Solving

7 Using the TLZ7L autoloader

Tables

1

TLZ07 Cassette Tape Drive Product Description

1.1 Overview

The TLZ07 Digital Audio Tape (DAT) drive provides you with high capacity, off-line data storage. Depending on the 4 mm data cassette tape used, the unit can typically store:

Tape Type (NOTES 1 and 2)	**No Compression**	**Compression**
TLZ04-CA (60 m, DDS-1)	1.3 GB	2.6 GB (see Note 3.)
TLZ06-CA (90 m, DDS-1)	2.0 GB	4.0 GB (see Note 3.)
TLZ07-CA (120 m, DDS-2)	4.0 GB	8.0 GB (see Note 3.)

NOTE

1. The TLZ07 is compatible with 60 m cassette tapes written on the TLZ04 in the noncompressed mode only.
2. The TLZ07/7L is compatible with the TLZ06/6L using 60 m and 90 m tapes only.
3. The compression measurements are typical for a 2-to-1 data compression ratio, but the actual ratio is dependent on the data.

The maximum time to back Up (read or write) on a TLZ07 cassette tape in a continual (streaming) mode is system dependent. The efficient use of streaming mode is determined by your operating system. Please refer to your system software documentation.

1.1.1 System Support

As of this printing, the TLZ07 drive is supported by a variety of Digital systems. Consult your Digital Sales Support representative for a list of supported systems. Your particular system must have a standard SCSI (small computer system interconnect) port, a KZQSA (Q–bus to SCSI adapter), or HSD05 (DSSI bus to SCSI adapter).

1.2 Design Features

The TLZ07 cassette tape drive uses state of the art technology. The TLZ07 cassette tape drive's design incorporates the Digital Data Storage (DDS) recording format and Digital Audio Tape (DAT) recording technologies.

1.2.1 What is Digital Audio Tape (DAT?)

DAT technology provides a high recording density with a very low error rate through the helical scan recording method. With this method of recording, both the tape and the recording head move simultaneously. The read and write heads are located on a rapidly rotating cylinder, or drum that is tilted at an angle in relation to the vertical axis of the tape. This causes the tracks to be recorded diagonally across the tape, resulting in an extremely high recording density, far higher than what is achievable with stationary-head devices.

1.2.2 What is Digital Data Storage (DDS?)

DDS uses a recording format that supports the use of digital audio tape for computer applications. The objectives of DDS are to maximize storage capacity and performance, facilitate data interchange, and provide very fast random access. In addition, this format has three levels of error correction, which ensures high data integrity. The DDS-DC format, which is a superset of the basic DDS DAT format, allows you to back up 8 gigabytes of data in approximately 3 hours minimum with no operator intervention, assuming 2:1 compression ratio.

NOTE

Use of non-DDS media may result in degraded drive performance and is not recommended by Digital Equipment Corporation.

1.2.3 What is the Media Recognition System (MRS)?

MRS refers to a series of alternate opaque and clear stripes at the beginning of a tape. This striping is used to classify the media as data grade rather than audio grade media. Use of MRS helps to ensure that only data grade tapes are used in computer applications. All 120-meter cartridges support MRS. Shorter media are available in both MRS and non-MRS tpes.

1.3 TLZ07/7L Models

The TLZ07 drive is available in several configurations:

- Model TLZ07-DA (tabletop) — a compact external unit with a built-in power supply and fan (Figure 1–1 and Figure 1–2).
- Model TLZ07-AA — a 3 1/2-inch, half-height drive that mounts internally (Figure 1–3 and Figure 1–4).
- Model TLZ07-BA — a 3 1/2-inch drive in a 5 1/4-inch, half-height form factor allowing the drive to be mounted internally (Figure 1–3 and Figure 1–4).
- Model TLZ07-VA — a TLZ07-AA mounted in a 3 1/2-inch StorageWorks SBB.
- Model TLZ7L-AA — a 5 1/4-inch, full-height autoloader that mounts internally (Figure 7–1).
- Model TLZ7L-DA (tabletop) — an external unit with a built-in power supply and fan (Figure 7–3).
- Model TLZ7L-VA — a TLZ7L-AA mounted in a 5 1/4-inch StorageWorks SBB.

NOTE

All the models have a drive buffer size of 1 MB of memory.

Figure 1–1 Model TLZ07-DA (Tabletop - Original Version)

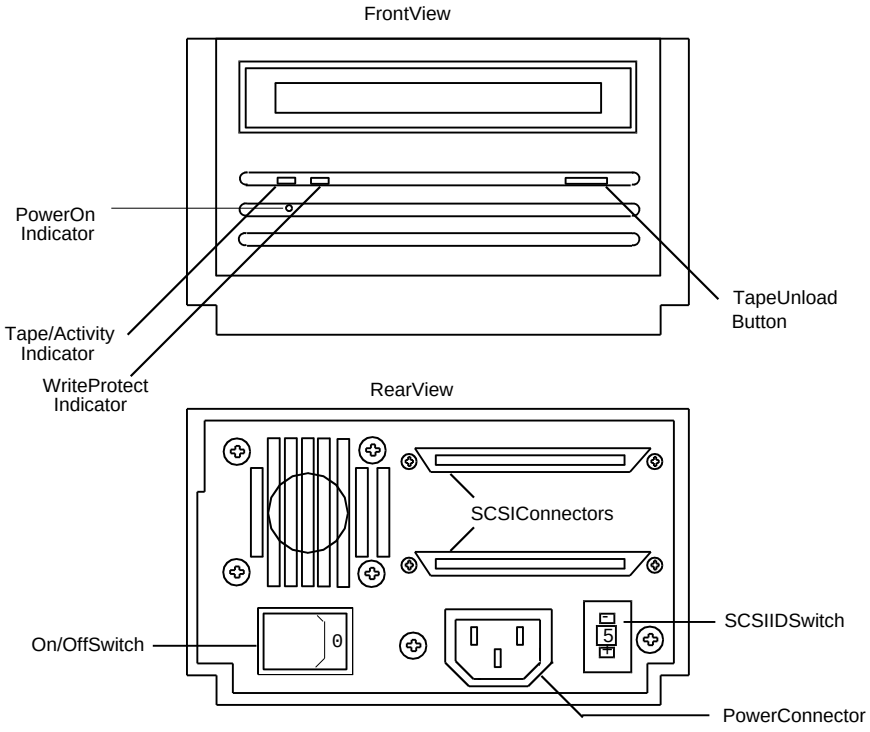
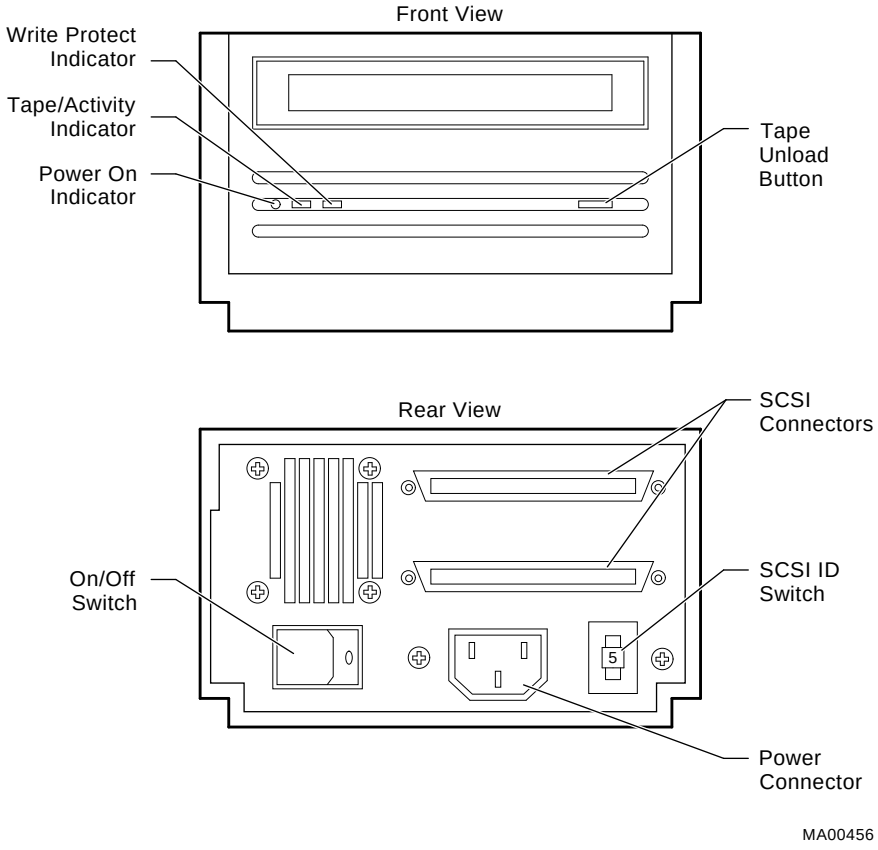


Figure 1–2 Revised Version TLZ07-DA Tabletop Tape Drive



Note

Figure 1–3 shows 3.5-inch drive. Positions of the LEDs, switches, etc., apply to the 5.25-inch version also.

Figure 1–3 Model TLZ07-AA (3.5-inch Chassis) and TLZ07-BA (5.25-inch Form Factor - Original Version)

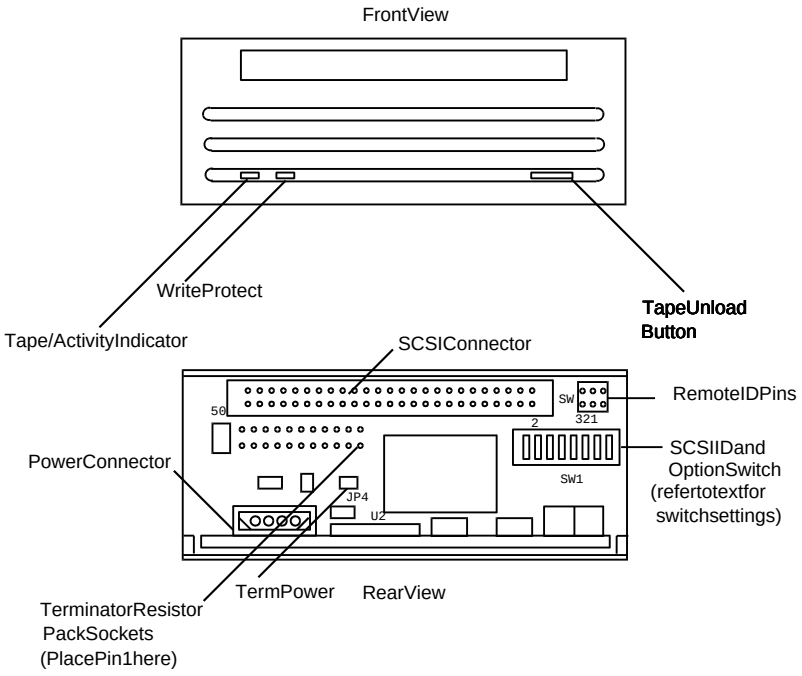
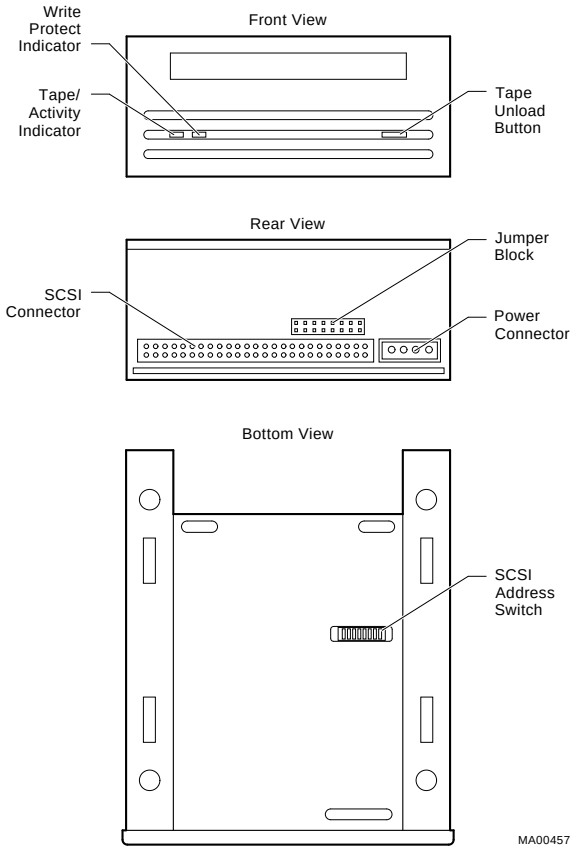


Figure 1–4 Revised Version TLZ07-AA/-BA Tape Drive



1.3.1 Checking Your Shipment for Model TLZ07-DA

In addition to this manual, make sure that your shipment includes the following:

- One TLZ07-DA tabletop cassette tape drive
- One 50-pin to 50-pin SCSI signal cable (PN 17-01351-01) for drive to drive connections only
- AC power cable
- One blank cassette tape (4 mm x 120 m), (PN TLZ07-CA)
- One head cleaning cassette (PN TLZ04-HA)
- SCSI terminator (PN 12-30552-01)

If your shipment is incomplete, please contact your Digital sales representative.

1.3.2 Checking your Shipment for Model TLZ7L-DA

In addition to this manual, make sure that your shipment includes the following:

- One TLZ7L-DA tabletop autoloader
- One 50-pin to 50-pin SCSI signal cable (PN 17-01351-01) for drive to drive connections only.
- AC power cable
- Five pack of blank cassette tapes (4 mm x 120 m), (PN TLZ07-CB)
- One head cleaning cassette tape (PN TLZ04-HA)
- SCSI terminator (PN 12-30552-01)
- Four-slot tape cassette magazine (PN TLZ06-04)

1.3.3 Ordering Additional Cassettes

To order additional blank cassette tapes and head cleaning cassettes, contact your Digital sales representative or DECdirect. Refer to the following part numbers.

- Five blank cassette tapes (4 mm x 60 m) (PN TLZ04-CB)
- Five blank cassette tapes (4 mm x 90m) (PN TLZ06-CB)
- Five blank cassette tapes (4 mm x 120m) (PN TLZ07-CB)
- One head cleaning cassette (PN TLZ04-HA)

2

Installing the Tabletop Drives/Loaders (TLZ07/TLZ7L)

2.1 General

This chapter shows you how to install the TLZ07-DA tabletop cassette tape drive or TLZ7L-DA tabletop autoloader on systems with an external SCSI connector. Read the following sections to complete the installation.

2.2 Shut Down, Halt, and Power Off the System

If you are installing a TLZ07-DA tabletop cassette tape drive or TLZ7L-DA tabletop autoloader on a running system, have your system manager perform the following steps:

1. Shut down the operating system.
2. Halt the system.
3. Set all system power switches off.

2.3 Selecting the SCSI Address

To familiarize yourself with the TLZ07 drive and TLZ7L loader:

1. Refer to Figure 1–1 and Figure 1–2 for the location of the buttons, switches, and connectors on the tabletop drives and Figure 7–3 and Figure 7–4 for the tabletop loaders.
2. Note that all connections are made at the rear of the tabletop enclosure.

Your system uses a SCSI ID switch to identify, or address, the drive. The SCSI ID is factory set at **0**. If you are installing the drive on a system that is already using SCSI ID 0, use any available SCSI ID. (You may have to consult your system manager.)

To set/change the SCSI address:

1. Locate the SCSI address switch at the rear of the tabletop enclosure.
2. Select the SCSI address for the drive:
   - TLZ07-DA — Press the + or - button until the desired address (0 through 7) appears in the window. See Figure 1–1.
   - TLZ7L-DA — Set the switches according to Table 7–6 and Figure 7–4.

NOTE

If you are installing any other drive variant, refer to Chapter 3.

Turn off all power before connecting the cables and the terminator.

The drive must be turned off and then on for switch settings to take effect, or a SCSI bus reset must be received.

The tabletop drives provide two SCSI connectors to allow daisy chaining. Either connector can connect to the host computer or any SCSI device in a daisy chain.

- If the tabletop is the last drive in the chain an interface cable is attached to one connector and a SCSI terminator (PN 12-30552-01) is installed in the other connector.
- If the drive is within the chain, the interface cable from the preceding device is connected in one connector; an interface cable is also connected from the other connector to the following device.

NOTE

Make sure that the last SCSI device on the bus is terminated correctly.

2.4 Connecting a SCSI Signal Cable — Drive to System

If you are connecting a TLZ07-DA drive or TLZ7L-DA autoloader directly to your system, you should use the SCSI signal cable supplied as part of your system installation kit.

If you do not have this cable, contact your Digital sales representative. You should use a cable supplied by Digital Equipment Corporation. Failure to do so can result in degraded performance of your tabletop drive.

To connect a SCSI cable — drive to system — perform the following:

1. Connect one end of the cable to the system SCSI connector.
2. Connect the other end of the SCSI signal cable to either SCSI connector on the rear of the TLZ07-DA drive or TLZ7L-DA autoloader.
3. Secure the SCSI cable by snapping the wire cable clamps (on either side of the SCSI connector) into place.
4. Connect the SCSI terminator to the other SCSI connector on the rear of the TLZ07-DA drive or TLZ7L-DA autoloader.
5. Secure the terminator by snapping the wire cable clamps (on either side of the SCSI connector) into place.

2.5 Adding Another Tabletop Drive — Drive to Drive

If you have one SCSI tabletop device already connected to your system, you can connect the TLZ07-DA drive or TLZ7L-DA autoloader to that device. For drive to drive connections, use the 50-pin to 50-pin SCSI signal cable (PN 17-01351-01) supplied with the tabletop drive.

Care should be taken to ensure that total SCSI cable length is well within the SCSI specification limit of 6 meters (including cable length within the system enclosure). It is also important to ensure that the drive/loader is configured to supply terminator power to the bus (default configuration). See Chapter 3 and Chapter 7 for jumper/switch configurations.

1. If present, remove the SCSI terminator from the existing SCSI drive.
2. Connect one end of the SCSI signal cable (PN 17-01351-01) to the existing SCSI drive, observing the correct orientation of the cable connector.
3. Secure the SCSI cable by snapping the wire cable clamps (on either side of the SCSI connector) into place.
4. Connect the other end of the SCSI signal cable to either SCSI connector on the TLZ07-DA drive or TLZ7L-DA autoloader, observing the correct orientation of the cable connector.
5. Secure the SCSI cable by snapping the wire cable clamps (on either side of the SCSI connector) into place.
6. Connect the SCSI terminator to the other SCSI connector on the TLZ07-DA drive or TLZ7L-DA autoloader, observing the correct orientation of the cable connector.

2.6 Connecting the Power Cable

The tabletop drives have an autoranging power supply. Refer to Table A–1 for voltage specifications.

To connect the power cable, proceed as follows:

1. Be sure that the TLZ07-DA drive or TLZ7L-DA autoloader power switch is off (0).
2. Connect the power cable to the TLZ07-DA drive or TLZ7L-DA autoloader power connector.

3. Connect the other end of the power cable to a nearby ac outlet.

NOTE

Multivendor Customer Services personnel: The power cable disconnects the drive from the main ac power source.

Proceed to Chapter 4.

3

Installing the TLZ07-AA/BA Cassette Tape Drive

3.1 General

This chapter shows you how to install the TLZ07-AA 3.5-inch and TLZ07-BA 5.25-inch form factor) cassette tape drives in a system enclosure or external expansion box. Read the following sections to complete the installation.

3.2 Shut Down, Halt, and Power Off the System

If you are installing a TLZ07 drive on a running system, have your system manager perform the following steps:

1. Shut down the operating system.
2. Halt the system.
3. Set all system power switches off.

3.3 Selecting the SCSI Address for the TLZ07-AA/BA Drive

To familiarize yourself with the TLZ07 drive:

1. Refer to Figure 1–3 and Figure 1–4 for the location of the buttons, switches, and connectors on the TLZ07 drive.
2. Note that all connections are made at the rear of the drive.

Your system uses a SCSI ID switch to identify, or address, the TLZ07-AA/BA. The SCSI ID is factory set at **0**. If you are installing the TLZ07-AA/BA on a system that is already using SCSI ID 0, use any available SCSI ID. (You may have to consult your system manager.)

To set/change the SCSI address, refer to Figure 1–3 and Figure 1–4 for switchpack location, then:

1. Refer to Figure 3–1 and Figure 3–2 for switch and jumper configuration.
2. Select a unique address number with the first three switches on the right.
3. To set a switch, use a pen (NOT A PENCIL) to push the switch to the **OFF** or **ON** position.

Table 3–1 shows the SCSI IDs (0 through 7) and Figure 3–1 and Figure 3–2 show a close-up view of the switches/jumpers.

NOTE

If you are installing the tabletop variant, refer to Chapter 2.

Turn off all power before connecting the cables and the terminator.

The drive must be power cycled for switch settings to take effect, or a SCSI bus reset must be received.

NOTE

Make sure that both ends of the SCSI bus are terminated correctly. For the drive, termination is enabled by either inserting resistor terminator packs (original version) or installing a jumper on pins 11 and 12 of the jumper block (revised version).

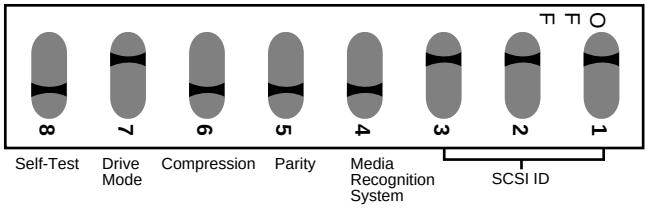
CAUTION

If the remote SCSI ID jumpers are used, the SCSI ID on the switchpack must be set to the factory default setting of all switches off, ID=0.

Table 3–1 SCSI ID Switch Settings (0=Off, 1=On)

SCSI ID	S3	S2	S1
0	0	0	0 (default setting)
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5	1	0	1
6	1	1	0
7	1	1	1

Figure 3–1 SCSI Address Switches



		Default Settings:
S1 - S3	SCSI ID	(All OFF, ID = 0)
S4	Media Recognition System	(ON, Disabled)
S5	Parity	(ON, Enabled)
S6	Compression	(ON, Disabled)
S7	Drive Mode	(OFF, DEC TLZ07)
S8	Self-Test	(ON, Enabled)

Note: The drive must be powered down and then powered up for new switch settings to take effect.

MR-6417-AI

NOTE

Switch S7 allows the drive to report itself as an Archive Python for compatibility with industry standard PC software.

When the switch is in the:

- OFF position, the drive reports itself as a DEC TLZ07
- ON position, the drive reports itself as an Archive Python

3.3.1 Other Optional Switch Settings

Switches S4 through S8 allow you to set up the following configuration options:

- Media Recognition Sytem (S4): Default = No MRS (S4 = on)
- Parity enable/disable (S5): Default = Parity Enabled (S5 = on)
- Compression enable/disable at power up (S6): Default = compression disabled at power up (S6 = on)
- Drive Mode (S7): Switch defaults to off for TLZ07 mode.
- Power-on self-test (POST) diagnostic mode enable/disable (S8): Default = POST mode enabled (S8 = on)

Figure 3–1 shows the default settings for these switches.

NOTE

The drive must be turned off and then on for switch settings to take effect, or a SCSI bus reset must be received.

Although S6 is the default on (compression disabled), you may turn compression on and off with a software switch. Consult Appendix B for the command format.

In the original version, jumper JP4 located near the terminator was used to provide terminator power to the SCSI bus and to the terminator. Termination was provided by installation of two single-inline packages (SIPs). Remote SCSI ID jumpers were provided next to the SCSI connector.

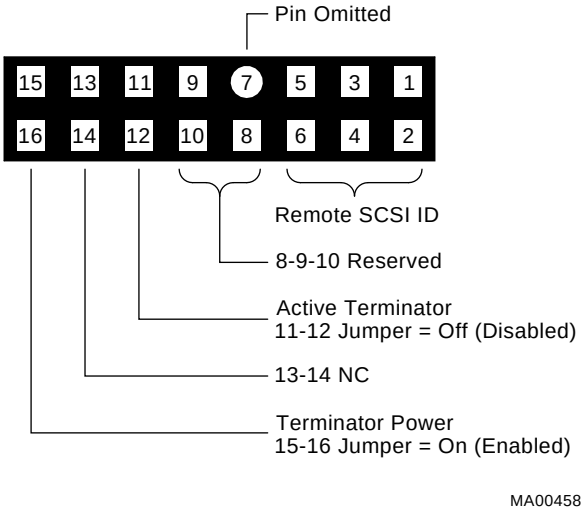
3.3.2 Revised Version TLZ07-AA/-BA Tape Drive SCSI Jumper Settings

This subsection defines the revised version TLZ07-AA/-BA jumper settings.

- Remote SCSI ID (pins 1–6). The factory default setting is **NO** jumpers installed. If you are not using a remote SCSI ID switch, refer to Figure 3–1 for instructions on how to set the SCSI ID using the switchpack on the bottom of the drive.
- Active Terminator (pins 11,12). The factory default setting is **NO** jumper installed, terminators disabled. To enable the terminators, place a jumper on pins 11 and 12.
- Terminator Power (pins 15,16). The factory default setting is jumper installed, Term Power enabled. To disable Term Power, remove the jumper on pins 15 and 16).

- Pins 8, 9, and 10 are reserved.
- Pins 13 and 14 are unused or not connected.

Figure 3–2 Revised Version TLZ07-AA/-BA Tape Drive SCSI Jumper Settings



3.4 Connecting a SCSI Signal Cable — Drive to System

If you are connecting a TLZ07 drive directly to your system, you should use a SCSI signal cable supplied as part of your system installation kit.

If you do not have this cable, contact your Digital sales representative. You should use a cable supplied by Digital. Failure to do so can result in degraded performance of your TLZ07 drive.

To connect a SCSI cable — drive to system — perform the following:

1. Connect one end of the cable to the system SCSI connector.
2. Connect the other end of the SCSI signal cable to the SCSI connector on the rear of the TLZ07 drive (Figure 1–3 and Figure 1–4).

3.5 Connecting the Power Cable and Mounting

Connect the system internal power cable located at the rear of the drive (Figure 1–3 and Figure 1–4).

NOTE

Digital service personnel: The power cable disconnects the drive from dc power generated by the main ac power source.

CAUTION

Always use M3 screws with a maximum thread length of 5 mm to mount the TLZ7L autoloader.

4

Verifying TLZ07 Cassette Tape Drive Installation

4.1 General

To verify successful installation of the TLZ07 drive, execute the power-on self-test (POST).

4.1.1 Execute POST

To execute POST:

1. For a tabletop unit, press the power switch to the on or | position (Figure 1–1 and Figure 1–2).

   For a drive in a system enclosure, turn the system power source to the on position.

2. Observe that, with no cassette in the drive, the Tape/activity and Write-Protect indicators light for approximately 1 to 5 seconds and then extinguish.

   With a cassette in the drive, the Tape/activity indicator will continue flashing (approximately 20 seconds) until the cassette is loaded.

3. After successful completion of POST, the Tape/activity and Write-Protect indicators turn off. If a cassette is loaded, the cassette LED will remain on.

4. If the Write-Protect indicator flashes amber and the drive indicator flashes green continuously for more than 30 seconds, then POST failed. Attempt to clear the failure by re-executing POST. (Power off and power on the drive.) If the failure repeats itself, call Multivendor Customer Services.

After successful execution of POST, have your system manager restart the system and assign a device name to your TLZ07 drive. Optionally, you can run a full system or SCSI bus test. See your system owner's manual for specific instructions.

NOTE

If a tape is loaded, the Tape/activity indicator stays on.

5

Using the TLZ07 Cassette Tape Drive

5.1 General

This chapter shows you how to use the TLZ07 drives, buttons, and indicators (Figure 1–1 through Figure 1–4). It also shows you how to use cassette tapes.

5.2 Power Switch

For a tabletop unit, press the power switch to turn the TLZ07 drive on or off. If you are not using the TLZ07 drive for prolonged periods of time, check with your system manager for the correct procedure to shut down your system or power off the drive.

5.3 Unload Button

Press and hold the unload button for 1 to 2 seconds to eject the cassette tape.

CAUTION

Pressing the unload button during normal tape operations may halt the tape operation in progress.

5.4 Write-Protect LED

This indicator comes on amber when the cassette is write-protected.

5.5 Tape/Activity LED

This indicator comes on green when a cassette is loaded. It flashes when there is drive activity.

5.6 Indicators

Table 5–1 describes the Write-Protect and Tape/activity LEDs.

- In the normal operating state, the Write-Protect LED is used to indicate write-protect status only.
- In the normal operating state, the Tape/activity LED is used to indicate drive activity and tape load status.

Table 5–1 TLZ07 LED Status

Status	Write-Protect LED	Tape/activity LED
No tape loaded	Off	Off
Tape loaded, write-enabled	Off	Green
Tape loaded, write-protected	Amber	Green
No SCSI/drive activity	Write-protect status	Green
SCSI/drive activity	Write-protect status	Activity
Load sequence	Off, goes to write-protect status quickly with original version, but delays several seconds with revised version due to tape preload.	Flashes green, 1 Hz, 25% on. Goes to steady green when done. Indicates drive activity.
Unload sequence	Write-protect status, goes to off.	Flashes green, 1 Hz, 25% on. Goes to off when done.
Reset sequence	Amber or write-protect status	Green, both blink on. Green, blink on once.
POST enabled: Lvl 1 (Basic) self-test	Flashes amber, 2 Hz, for duration of test. Write-protect status when self-test completes.	Flashes green, 2 Hz for duration of test. Normal activity indications when self-test complete.
Lvl 2 (Extended) self-test	Write-protect status	Flashes green until test complete (1 to 4 minutes). Same as normal activity indication.
Test complete, no failure.	Resume normal operation, write-protect status.	
Test failure, drive fault.	Flashes amber, 2 Hz.	Flashes green, 2 Hz.
Power-On with Self-test disabled:	Flash amber, 2Hz for two seconds	Flash green, 2 Hz, for two seconds
Tape fault (media warning, high error rate)	Change state of LED for 0.5 seconds every two seconds	Activity
Drive fault	Flash amber, 2 Hz	Flash green, 2 Hz, for both
Cleaning tape inserted (good tape)	Write-protect status, goes to off	Flash green during cleaning cycle
Cleaning tape inserted (expired tape)	Flash amber, 2Hz	Flash green, 2 Hz (drive fault)

5.7 Using the Cassette Tape

Digital Equipment Corporation recommends that you use only DDS certified tapes. The following sections describe how to:

- Handle and store tape (Section 5.7.1)
- Write-protect tape (Section 5.7.2)
- Insert and remove tape (Section 5.7.3)

WARNING

Always place the tape label in the recessed area on the cassette. Never place one label on top of another label. Whenever possible, install tape labels on the cassette edge, rather than the top for tapes used in the autoloader magazine to avoid problems if the label lifts up.

NOTE

Use of non-DDS media may result in degraded drive performance. We recommend the use of Digital Equipment Corporation media.

5.7.1 Proper Handling of Cassette Tapes

To ensure optimal performance from your cassette tapes, observe the following guidelines when handling them.

- Avoid placing the cassette tapes near sources of electromagnetic interference, such as terminals, and video or X-ray equipment. Emissions from such equipment can erase data on the tape.
- Keep cassette tapes out of direct sunlight and away from heaters and other sources of heat.
- Store cassette tapes (and cleaning cassette) where the room temperatures are between 5 and 32°C (40 and 90°F).
- Store cassette tapes in a dust-free environment where the relative humidity is 20 to 60% RH.

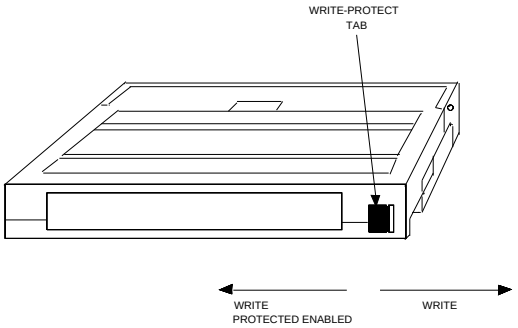
5.7.2 Setting the Write-Protect Tab on the Cassette Tape

If you are using the tape to read or are copying from the tape, we recommend that you set the write-protect tab to write-protected. This disables writing to tape, and ensures that data will not be accidentally overwritten. The write-protect tab contrasts in color to the cartridge body. Use a pen (NOT A PENCIL) to set the write-protect tab (Figure 5–1) to the desired position.

NOTE

The tab is not visible when the cassette tape is loaded in the TLZ07 drive.

Figure 5–1 TLZ07 Cassette Tape



Observe the following guidelines when setting the write-protect tab.

- If you are reading data (copying from the tape), set the write-protect tab to write-protected by sliding the tab to the left.
- If you are writing data, set the write-protect tab to write-enabled by sliding the tab to the right.
- The write-protect tab position is shown on the front panel Write-Protect indicator.

5.7.3 Inserting a Cassette Tape into the Drive

Insert the TLZ07 cassette tape into the drive with the cassette's write-protect tab on the right, facing you. Remove the tape by depressing the tape eject button.

CAUTION

The drive should never be transported with a tape loaded in the drive. Tape damage and possible loss of data may result. Always unload the tape prior to transporting the drive.

6

Preventive Maintenance and Problem Solving

This chapter describes preventive maintenance and problem solving for the TLZ07 cassette tape drive. Preventive maintenance involves periodic head cleaning. Problem solving is described in Table 6–1.

Statistics show that over 90% of drive-related problems are associated with the media. Therefore, Digital Equipment Corporation strongly recommends that you follow the instructions for handling cassette tapes and cleaning the heads of the drive.

6.1 Cleaning the Heads

This section shows you how to perform TLZ07 head cleaning. The heads are the components that physically read and write data to and from the media (in this case, a cassette tape).

Digital Equipment Corporation recommends that you perform the head cleaning procedure after the first four hours of tape movement with a new cartridge and thereafter once every 2 weeks, or after every 24 hours of drive usage, whichever comes first.

Under normal conditions, it should not be necessary to exceed this cleaning schedule. If a particular data cassette causes problems, try changing to another data cassette.

CAUTION

Never attempt to clean the heads in a manner other than described. Doing so will void the product warranty.

To clean the heads, use the head cleaning cassette as follows:

1. Apply power to the drive by pressing the power switch on the system external storage expander box, or tabletop drive unit, to the on position.
2. Insert the head cleaning cassette (PN TLZ04-HA) into the drive.
3. With the head cleaning cassette inserted, the drive automatically executes head cleaning. The drive ejects the head cleaning cassette after approximately **30 seconds** if head cleaning is successful.
4. On the card enclosed with the head cleaning cassette, record every time you use the cassette.

   Under normal conditions, the head cleaning cassette is used for about 25 cleanings. Additional cassettes are available from your Digital sales representative or DECdirect.

   If the number of cleaning cycles of a particular head cleaning cassette has expired, the drive will signal the user by flashing both the Tape/activity LED and the Write-Protect LED. Press the eject button to remove the cleaning cassette because the drive will not automatically eject an expired cleaning cartridge. No cleaning action will have occurred.

6.2 Problem Solving

Table 6–1 describes drive problems and possible solutions.

Table 6–1 Problem Solving

Symptom	Probable Cause	Possible Solution
Unable to back up or copy data to cassette tape.	Cassette write-protected.	1. Set write-protect tab on cassette to write-enabled.
	No tape in drive.	2. Insert tape.
Write-Protect LED flashes amber	Excessive tape errors.	Perform head cleaning procedure (see Section 6.1). If error repeats, try another tape.
Both LEDs flash rapidly, in unison.	Dirty heads or bad media.	Eject tape. Perform head cleaning procedure (see Section 6.1). If error repeats, try another tape.
	Drive error, possibly a hard failure.	Eject tape. Power off and power on the drive. If error repeats, call Multivendor Customer Services.
After applying power and self-test has completed successfully, the Tape/activity LED is not lit.	No tape loaded.	Load tape.
Unit not available to system.	Drive not plugged in.	1. Check ac power.
	SCSI ID switches set to incorrect address.	2. Check SCSI ID switch.
	Defective SCSI cable.	3. Make sure power cable is plugged in.
		4. Be sure SCSI cable connections are secure.

(continued on next page)

Table 6–1 (Cont.) Problem Solving

Symptom	Probable Cause	Possible Solution
	Incorrect termination, or no term power	5. Verify termination and that the drive is jumpered to supply term power.

6.2.1 System-Based Diagnostics

Your system has system-based diagnostics that can be used to test the TLZ07 drive.

System-based diagnostics are usually referred to in your system owner's manual as *console-based diagnostics, self-tests, or system exercisers*. Refer to your system documentation for information about these diagnostics.

Before calling Multivendor Customer Services, you can execute system diagnostics to test the TLZ07 drive.

NOTE

Some system-based diagnostics are subject to software licensing. Consult your Digital sales representative.

6.3 Repair Services

Multivendor Customer Services offers a range of flexible service plans.

6.3.1 On-Site Service

On-site service offers the convenience of service at your site and insurance against unplanned repair bills. For a monthly fee, you receive personal service from our service specialists. Within a few hours, the specialist is dispatched to your site with equipment and parts to give you fast and dependable maintenance.

6.3.2 BASIC Service

BASIC Service offers full coverage from 8 a.m. to 5 p.m., Monday through Friday. Options are available to extend your coverage to 12-, 16- or 24-hour periods, and to include Saturdays, Sundays, and holidays. Under the BASIC service plan all parts, materials and labor are covered in full.

6.3.3 DECservice

DECservice offers a premium, on-site service for committed response to remedial service requests made during contracted hours of coverage. Remedial maintenance will be performed continuously until the problem is resolved, which makes this service ideal for customers requiring maximum service performance. Under DECservice all parts, materials, and labor are covered in full.

6.3.4 Carry-In Service

Carry-in service offers fast, personalized response, and the ability to plan your maintenance costs for a smaller monthly fee than on-site service. When you bring your unit to one of the many Digital SERVICenters worldwide, factory-trained personnel repair your unit within 2 days. This service is available on selected terminals and systems. Contact your local unit. Digital SERVICenters are open during normal business hours, Monday through Friday.

6.3.5 DECmailer Service

DECmailer offers expert repair at a per use charge. This service is designed for users who have the technical resources to troubleshoot, identify, and isolate the module causing the problem. Mail the faulty module to our Customer Returns Center where the module is repaired and mailed back to you within 5 days.

6.3.6 Per Call Service

Per call service offers a maintenance program on a noncontractual, time-and-materials-cost basis. It is appropriate for customers who have to perform first-line maintenance, but may occasionally need in-depth support from Multivendor Customer Services.

7

Using the TLZ7L autoloader

7.1 Overview

The TLZ7L autoloader (Figures 7–1, 7–2, 7–3, and 7–4) provides very high capacity unattended backup, as well as support for the full Random Access Command Set as defined by SCSI-2. It is packaged in an industry standard 5.25-inch full-high form factor with an embedded TLZ07 tape drive and provides all the functionality/features of the TLZ07. The TLZ7L autoloader model is **not** a field upgrade option for the TLZ07 tape drive; it must be purchased as a single unit.

With a 4-cartridge magazine, the TLZ7L autoloader provides up to 32 gigabytes of storage. With a 12-cartridge magazine (PN TLZ6L-12), it provides up to 96 gigabytes of storage.

7.2 Indicators

The TLZ7L autoloader has four LED indicators. The labels for these LED indicators come with the autoloader. They are provided in four languages: English, French, German, and Spanish; and two orientations: vertical and horizontal. Choose your labels and place them on the bezel as shown in Figure 7–1. Note that in the vertical orientation, the left side of the loader will be on the bottom, with the right side on the top. (The dot matrix display also supports the same four languages.)

The Data Compression LED is lit when data compression is enabled on the TLZ07 tape drive. Both the Data Compression LED and the DDS-2 LED flash rapidly when a loader fault occurs. The DDS-2 LED will be lit when the drive is in DDS-2 mode. The Write Protect and Cassette LEDs are described in Chapter 5, Using the TLZ07 Cassette Tape Drive .

Figure 7–1 Model TLZ7L-AA, Front View

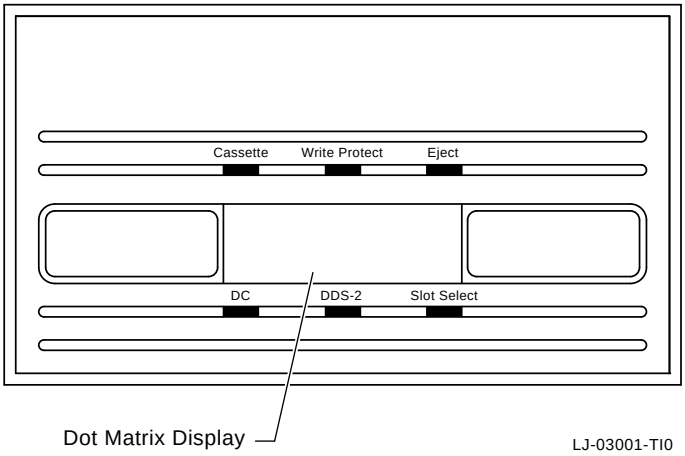


Figure 7–2 Model TLZ7L-AA, Top View

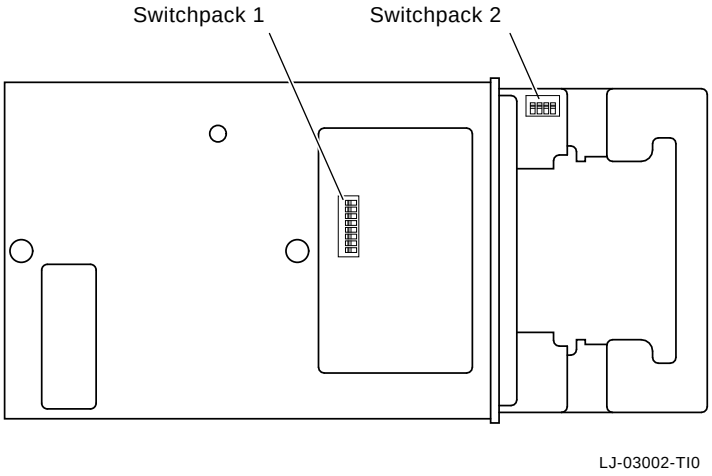


Figure 7–3 Model TLZ7L-DA, Front View

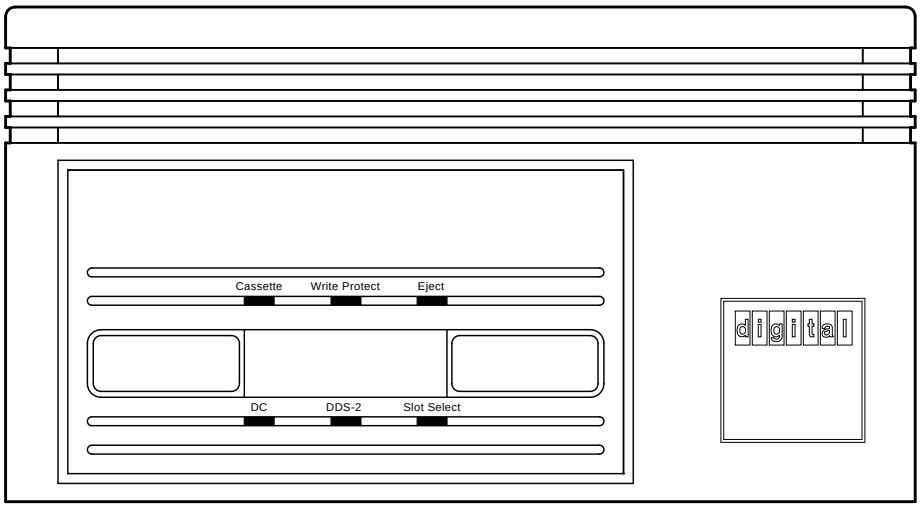


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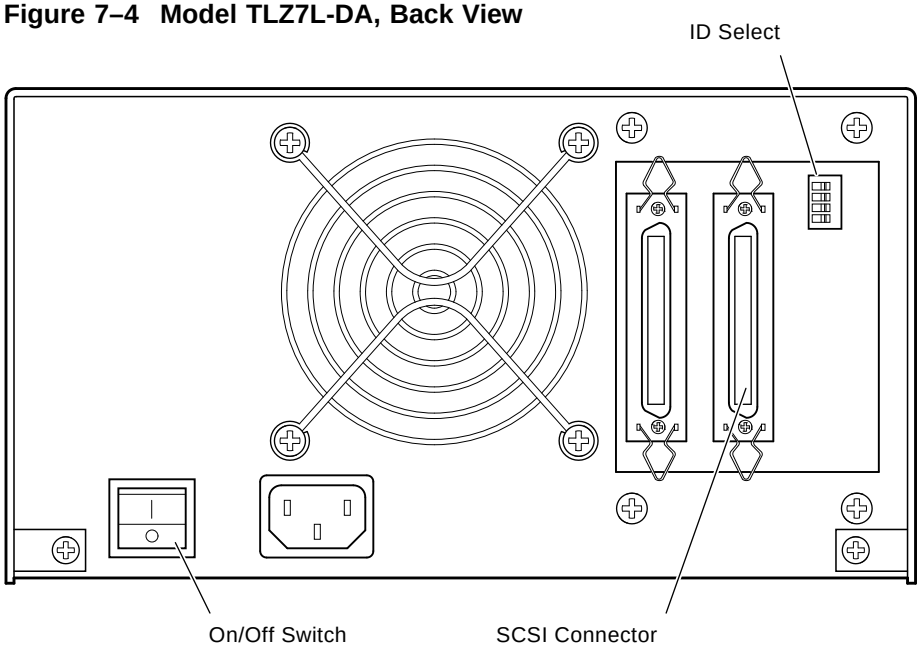
Figure 7–4 Model TLZ7L-DA, Back View



7.3 Dot Matrix Display

The indicators (Section 7.2) and the dot matrix display support the same four languages. The dot matrix display shows three types of messages: activity, status, and error.

7.3.1 Activity Messages

The dot matrix display has several activity messages: READ when the drive is reading, REWIND when it is rewinding, and so forth. Table 7–2 lists the possible display messages.

7.3.2 Status Messages

The dot matrix display shows the current status of the autoloader when the drive is not active. Table 7–2 lists the possible display messages.

7.3.3 Error Messages

If an error occurs while the unit is operating, an error code will be displayed on the dot matrix display.

If the error is with the loader mechanism the dot matrix panel will display:

```
ERROR XX
```

Where XX is a two digit error code. Use Table 7–1 to determine the meaning of the code.

Table 7–1 Loader Error Codes

Error Code	Description	Possible cause
10	Magazine Initialization Failure	Improper cassette insertion
11	Magazine Initialization Failure	Improper cassette insertion
20	Magazine Ejection Failure	Improper cassette insertion
30	Magazine Positioning Error	Improper cassette insertion
31	Magazine Positioning Error	Improper cassette insertion
40	Cassette Insertion Failure	Contamination or misalignment of cassette insertion rollers
41	Cassette Insertion Failure	Failure of cassette drive mechanism
42	Cassette Insertion Failure	Failure of cassette drive mechanism
50	Cassette Ejection Failure	Contamination or misalignment of cassette insertion rollers
51	Cassette Ejection Failure	Failure of cassette drive mechanism
52	Cassette Ejection Failure	Failure of cassette drive mechanism
60	Drawer Closing Failure	
61	Drawer Opening Failure	
70	Magazine Position Lost	Failure of magazine position sensor
F0	Power-up Failure	Tape jam or magazine lock-up

If the error is a drive or media error, the error code will be of the format:

AABBCCDD

where AA = Sense Key, BB = Additional Sense Code, CC = Additional Sense Code qualifier, and DD = Sense Key specific.

Your Multivendor Customer Service representative will have a complete list of these codes.

Table 7–2 Status Messages

Message	Meaning
0 TAPE	This message alternates with the CHK MAG message to indicate that the magazine contains no cartridges.
n TAPES	After the drawer is closed, this message displays for two seconds to show the number of cartridges in the magazine.
CHK MAG	The cartridge is not correctly inserted in the magazine, or the magazine contains no cartridges.
CLEAN	A cleaning cycle is occurring on a manually inserted cartridge.
CLEAN n	A cleaning cycle is occurring on cartridge n, which was loaded from the magazine.
CLOSING	The drawer is closing.
DISMOUNT	This message displays when the magazine has been ejected and the loader is waiting for a user to remove it.
END MAG	In sequential mode operation, the magazine is at its end.
EJECT	A manually inserted cartridge is being ejected.
EJECT n	The cartridge is being ejected to slot n.
EJECT ^	A cartridge cannot be ejected due to a tape in the slot of the magazine at present position. Depress the eject button to unload the magazine. Depress the eject button again to unload the tape in the drive. Remove the tape and reload the magazine.
EJECTING	The magazine is being ejected to the dismount position.
EMPTY	This message is displayed when there is no magazine in the loader and the drawer is retracted into the loader.
ERASE	A manually inserted cartridge is being erased.
ERASE n	The cartridge from slot n is being erased.
ERROR n	A loader mechanism error has occurred. See Table 7–1 for an explanation of the errors.
LOAD	A manually inserted cartridge is being initialized.
LOAD n	The cartridge from slot n is being loaded and initialized.
OPENING	The drawer is opening.
OPERATOR	Operator action is required because a magazine is not in place.
READ	A manually inserted cartridge is being read.
READ n	The cartridge from slot n is being read.

(continued on next page)

Table 7–2 (Cont.) Status Messages

Message	Meaning
READY	A manually inserted cartridge is in the drive and the drive is ready.
READY n	The cartridge from slot n is in the drive and the drive is ready.
REWIND	A manually inserted cartridge is rewinding.
REWIND n	The cartridge from slot n is rewinding.
SCANNING	The magazine is being initialized.
SEARCH	A space command is being processed on a manually inserted cartridge.
SEARCH n	A space command is being processed on the cartridge from slot n.
SEL n	The slot number shown is being selected with the step button.
SEL SLOT	The magazine is present, but a cartridge is not inserted in the drive.
SLOT n	This message alternates with the CHK MAG message to show that the cartridge in the slot is incorrectly inserted.
WRITE	A manually inserted cartridge is being written.
WRITE n	The cartridge from slot n is being read.

7.4 Operation

The TLZ7L autoloader can be operated two ways: automatically or manually. It has two modes: Sequential and Random Access.

CAUTION

Never transport the loader with a magazine installed in the loader. Damage to the tape, loader, or magazine may result due to magazine movement. Data loss may occur if a tape is loaded in the drive. Always unload and remove the magazine prior to transporting the loader.

7.4.1 Automatic Operations

During automatic operations, the TLZ7L autoloader can function in Sequential and Random Access modes at the same time.

In Sequential mode, upon receipt of a SCSI unload command, the loader unloads the current cassette and automatically cycles to the next cassette in the magazine. It continues to unload and cycle to the next cassette until the last cassette has been unloaded. When this process is complete, the magazine

stops to prevent accidental overwrite of data unless the **continuous cycle** switch is set. See Section 7.5.1. Then the magazine may be unloaded.

In Random Access mode, the loader responds to all of the SCSI Random Access commands.

7.4.2 Manual Operations

Manual operations are performed from the front of the autoloader.

To load a magazine, press the eject button. This opens the drawer and ejects any magazine that is in the drive. Then place the magazine in the mouth of the loader until the rollers engage the magazine. The loader automatically scans the magazine to make sure the cassettes are loaded correctly and to count the number of cassettes loaded. The loader displays the number of cassettes loaded. If a 4-cartridge magazine is installed, the drawer closes. If a 12-cartridge magazine is installed, the drawer latches in the open position. When using a 12-cartridge magazine, take care to ensure adequate clearance below the loader (or beside the loader if vertically mounted) to allow the magazine to move freely to all available slots.

To load a cassette, press the slot button. Press it once to load the first cassette, twice to load the second cassette, and so on. If you make a mistake, continue pressing the slot button until the desired slot number is shown on the dot matrix display. When you press the slot button, the loader displays the selected slot and allows some time for changes. Then the selected slot is automatically loaded and the drive becomes ready.

To eject the magazine, press the eject button. This ejects any cassette that is into the drive, opens the drawer, and ejects the magazine. Then you can remove the magazine.

7.4.3 Single Cassette Operation

If a magazine is in the drive, eject the magazine. When the mouth of the loader is empty, you can load a single cassette directly in the drive. The drive will accept the cassette and load it.

To eject the cassette, press the eject button. The cassette moves into the mouth of the loader. Then you can manually remove the cassette.

7.5 Switch Settings and Jumpers

7.5.1 Switchpack 1

Switchpack 1, or SW1 (Table 7–3), is located at the top of the drive. It is accessible through a cutout in the top cover of the drive. The drawer must be in the open position when you access this switchpack. The default is for all switches off.

Table 7–3 SW1 Settings and Functions

Switch	Function
SW1-1	Language Select
SW1-2	Language Select
SW1-3	Continuous Cycle
SW1-4	Display Intensity
SW1-5	Reserved
SW1-6	Reserved
SW1-7	Reserved
SW1-8	Reserved

SW1-1 and SW1-2

The dot matrix display on the TLZ7L autoloader supports four languages: English, French, German, and Spanish. You select the language of the dot matrix display by setting switches SW1-1 and SW1-2 (Table 7–4).

Table 7–4 SW1-1 and SW1-2 Settings

Language	SW1-1	SW1-2
English	Off	Off (default)
French	Off	On
German	On	Off
Spanish	On	On

SW1-3

You select the Continuous Cycle mode by setting switch SW1-3. When you set this switch to on, the autoloader loads the first cassette after unloading the last cassette in Sequential mode. This switch defaults to off.

CAUTION

Continuous Cycle mode may overwrite existing data.

SW1-4

You select the intensity of the dot matrix display by setting switch SW1-4. When you set this switch to on, the dot matrix display is set to high intensity. This switch defaults to off.

SW1-5 through SW1-8

Reserved. All switches are set to off.

7.5.2 Switchpack 2

Switchpack 2, or SW2 (Table 7–5), is located inside the drawer. It is accessible when the drawer is open. The default for all these switches is off.

Table 7–5 SW2 Settings and Functions

Switch	Function
SW2-1	Display Orientation
SW2-2	Auto-load
SW2-3	Reserved
SW2-4	Reserved

SW2-1

You select vertical or horizontal orientation of the dot matrix display by setting switch SW2-1. When you set this switch to on, the dot matrix display is vertical (left side down). This switch defaults to off (horizontal orientation).

SW2-2

You select automatic load of the first cassette by setting switch SW2-2. When you set this switch to on, the autoloader automatically loads the first cassette upon magazine insertion. This switch defaults to off.

7.5.3 SCSI ID Select Switch (-DA Version Only)

The SCSI ID Select Switch is located in the upper right corner on the rear of the tabletop loader enclosure (Figure 7–4). Table 7–6 indicates the proper switch positions for each possible SCSI ID.

Table 7–6 SCSI ID Select Switch

SCSI ID	SW1	SW2	SW3	SW4
0	0	0	0	0 (Default)
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1

7.5.4 SCSI ID Select Switch (-AA Version Only) Switchpack 3

The SCSI ID switches comprise S1-S3 on switchpack 3 at the rear of the internal autoloader (Figure 7–5). Table 7–7 indicates the proper switch positions for each possible SCSI ID.

Table 7–7 SCSI ID Switch Settings on Switchpack 3 (0=Off, 1=On)

SCSI ID	S3	S2	S1
0	0	0	0 (factory setting)
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5	1	0	1
6	1	1	0
7	1	1	1

7.5.5 Other Switch Settings

Switches S4 through S8 allow you to set up the following configuration options:

- Media Recognition Sytem (S4): Default = No MRS (S4 = on)
- Parity enable/disable (S5): Default = Parity Enabled (S5 = on)
- Compression enable/disable at power up (S6): Default = compression disabled at power up (S6 = on)
- Drive Mode (S7): Switch defaults to off for TLZ07 mode.
- Power-on self-test (POST) diagnostic mode enable/disable (S8): Default = POST mode enabled (S8 = on)

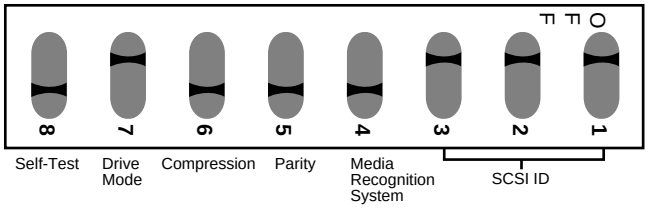
Figure 7–5 shows the default settings for these switches.

NOTE

The drive must be turned off and then on for switch settings to take effect, or a SCSI bus reset must be received.

Although S6 is the default on (compression disabled), you may turn compression on and off with a software switch. Consult Appendix B for the command format.

Figure 7–5 SCSI Address Switches



		Default Settings:
S1 - S3	SCSI ID	(All OFF, ID = 0)
S4	Media Recognition System	(ON, Disabled)
S5	Parity	(ON, Enabled)
S6	Compression	(ON, Disabled)
S7	Drive Mode	(OFF, DEC TLZ07)
S8	Self-Test	(ON, Enabled)

Note: The drive must be powered down and then powered up for new switch settings to take effect.

MR-6417-AI

NOTE

Switch S7 allows the drive to report itself as an Archive Python for compatibility with industry standard PC software.

When the switch is in the:

- OFF position, the drive reports itself as a DEC TLZ07
- ON position, the drive reports itself as an Archive Python

7.5.6 Termination Jumper/Terminators

The last unit in a daisy chain of SCSI devices must have termination installed. For the internal unit, two single-inline packages (SIPs) provide the termination. When installing, take care to align pin 1 on the termination sockets with pin 1 on the SIPs. For the tabletop unit an external terminator is used and no termination SIPs should be installed in the loader.

A two-pin jumper header is located next to the SIP sockets, that is used to provide terminator power to the terminators and the SCSI bus. When a jumper is installed on these pins, terminator power is provided (default). When removed, no SCSI terminator power is provided by the loader.

7.6 Routine Maintenance

7.6.1 Cleaning the Rollers

Digital Equipment Corporation recommends that you clean the rollers about once every 6 months or after 10,000 load/unload cycles. Follow these steps:

1. Open the drawer and remove the magazine.
2. Dip a cotton swab in ethyl alcohol.
3. Press the slot select button three times in a 3-second period. This starts rotation of the cassette rollers. They rotate for 15 seconds while the display reads CLEAN 1.
4. Wipe the rollers with the wet end of the swab for a few seconds as they rotate.
5. Wipe the rollers with the dry end of the swab for a few seconds as they rotate.
6. Again, press the slot select button three times in a 3-second period. This starts rotation of the left magazine rollers. They rotate for 15 seconds while the display reads CLEAN 2.
7. Repeat steps 4 and 5.
8. Again, press the slot select button three times in a 3-second period. This starts rotation of the right magazine rollers. They rotate for 15 seconds while the display reads CLEAN 3.
9. Repeat steps 4 and 5.

7.6.2 Cleaning the TLZ07 Tape Drive

Refer to Chapter 6, Preventive Maintenance and Problem Solving for information on cleaning the TLZ07 tape drive.

A

Cassette Tape Drive Specifications

The following tables list the TLZ07 and TLZ7L cassette tape drive specifications.

Table A–1 TLZ07 Cassette Tape Drive Specifications

Characteristic	Specification(s)
Mode of operation	Streaming, and start/stop
Drive interface	Small computer system interconnect (SCSI-2)
Dimensions	See Table A–2
Media (4 mm x 60 m)	TLZ04-CA cassette tape
Media (4 mm x 90 m)	TLZ06-CA cassette tape
Media (4 mm x 120 m)	TLZ07-CA cassette tape
Bit density	114 Mbits per square inch
Transfer rate (typical)	400 Kbyte/s noncompression
Recording format	Digital data storage (DDS-2, DDS, DC)
Cassette capacity (typical)	4 gigabytes with 120 meter tape in native mode 8 gigabytes (typical) with 120 meter tape and data compression
Operating temperature	10°C to 40°C (50°F to 104°F)
Nonoperating temperature	-40°C to 70°C (-40°F to 158°F)
Operating humidity	20% to 80% RH maximum, noncondensing
Nonoperating humidity	5% to 95% RH maximum, noncondensing
Operating altitude	0 to 3.1 km (0 to 10,000 ft)
Nonoperating altitude	0 to 12.2 km (0 to 40,000 ft)

(continued on next page)

Table A–1 (Cont.) TLZ07 Cassette Tape Drive Specifications

Characteristic	Specification(s)
Internal SCSI cable length (TLZ07-DA)	130 mm
Passes per cassette tape	2000
Power consumption (typical)	
Tabletop	12 W
Drive	9 W
Power requirements	
Tabletop (TLZ07-DA)	100 to 240 V ac, 0.3 A
Drive (TLZ07-AA/BA)	+5 V dc, 0.89 A
Drive (TLZ07-AA/BA)	+12 V dc, 0.2 A

Table A–2 TLZ07 Cassette Tape Drive Dimensions

Dimensions	TLZ07-AA	TLZ07-BA	TLZ07-DA
Height	41.2 mm (1.6 in)	41.2 mm (1.6 in)	85 mm (3.4 in)
Width	101.6 mm (4.0 in)	146 mm (5.7 in)	135 mm (5.3 in)
Length	146 mm (5.7 in)	175 mm (6.9 in)	235 mm (9.3 in)
Weight	.85 kg (2 lb)	1.1 kg (2.4 lb)	2.4 kg (5.2 lb)

Table A–3 TLZ07-DA Noise Declaration

Acoustics - declared values per ISO 9296 and ISO 7779:		
	LwAd	LpAm (bystander positions)
Idle	4,7 B	34 dBA
Operating	4,8 B	35 dBA
Schallemissionswerte - Werteangaben nach ISO 9296 und ISO 7779/DIN EN27779:		
	LwAd	LpAm (Zuschauerpositionen)
Leerlauf	4,7 B	34 dBA
Betrieb	4,8 B	35 dBA

NOTE

Current values for specific configurations are available from Digital representatives. 1 B = 10 dBA.

Aktuelle Werte für spezielle Ausrüstungsstufen sind über die Digital Equipment Vertretungen erhältlich. 1 B = 10 dBA.

Table A–4 TLZ7L Cassette Tape Drive Specifications

Characteristic	Specification(s)
Mode of operation	Streaming and Start/stop
Drive interface	SCSI-2
Dimensions	See Table A–5
Media	See Table A–1
Bit density	See Table A–1
Transfer rate	See Table A–1
Recording format	See Table A–1
Cassette capacity (typical)	See Table A–1
Magazine capacity, 4-cartridge (typical)	16 gigabytes 32 gigabytes (typical) with data compression
Magazine capacity, 12-cartridge (typical)	64 gigabytes 96 gigabytes (typical) with data compression
Operating temperature	Table A–1 applies
Nonoperating temperature	Table A–1 applies
Operating altitude	Table A–1 applies
Nonoperating altitude	Table A–1 applies
Passes per cassette tape	Table A–1 applies
Power consumption (TLZ7L-AA)	Typical 28.9 W
Power consumption (TLZ7L-DA)	Typical 19 W Maximum 22 W
Power requirements TLZ7L-AA	+5 V 1.7 A typical +12 V 1.7 A typical
Power requirements (TLZ7L-DA)	110 Vac, 60 Hz - 0.18 A typical 0.2 A Maximum
	240 Vac, 50 Hz - 0.08 A typical 0.1 A Maximum

Table A–5 TLZ7L Cassette Tape Drive Dimensions

Dimensions	TLZ7L-AA	TLZ7L-DA
Height	82 mm (3.2 in)	147 mm (5.77 in)
Width	146 mm (5.7 in)	23.5 mm (9.25 in)
Length	205 mm (8 in)	33.3 mm (13.1 in)
Weight	2.7 kg (6 lb)	5 kg (11 lb)

Table A–6 TLZ7L-DA Noise Declaration

Acoustics - declared values per ISO 9296 and ISO 7779:		
	LwAd	LpAm (bystander positions)
Idle	6.0 B	44 dBA
Operating	6.2 B	46 dBA
Schallemissionswerte - Werteangaben nach ISO 9296 und ISO 7779/DIN EN27779:		
	LwAd	LpAm (Zuschauerpositionen)
Leerlauf	6,0 B	44 dBA
Betrieb	6,2 B	46 dBA

NOTE

Current values for specific configurations are available from Digital representatives. 1 B = 10 dBA.

Aktuelle Werte für spezielle Ausrüstungsstufen sind über die Digital Equipment Vertretungen erhältlich. 1 B = 10 dBA.

B

Enabling/Disabling Data Compression Under OSF and OpenVMS

B.1 OSF TLZ07 Compression and Noncompression Modes

The default mode for the TLZ07 tape drive is noncompression mode. To use the TLZ07 tape drive in compression mode, specify the device as:

```
/dev/rmt?h or  /dev/rmt?m
```

To use the TLZ07 tape drive in noncompression mode, specify the device as:

```
/dev/rmt?1 or /dev/rmt?a
```

B.2 OSF DUMP Utility

The parameters that should be used when running the DUMP utility on a TLZ07 tape drive in compressed and noncompressed mode are as follows:

Noncompressed Mode:

density = 61000 effective tape length (with 120 meter tape)
size = 76586 (with 120 meter tape)
Example: dump 0dsf 61000 76586 /dev/rmt?1/dev/rrz0g

Compressed Mode:

density = 61000 effective tape length (with 120 meter tape)
size = 76586 (with 120 meter tape) × compression (which, for most cases is 2)
Example: dump 0dsf 61000 153172 /dev/rmt?h/dev/rrz0g

NOTE

You must type OSF commands using lowercase characters.

B.3 OpenVMS TLZ07 Compression and Noncompression Modes

The default mode for the TLZ07 tape drive is noncompression mode. To use the TLZ07 tape drive in compression mode, specify:

```
MEDIA_FORMAT=COMPACT software switch
```

To use the TLZ07 tape drive in noncompression mode, specify:

```
MEDIA_FORMAT=NOCOMPACT software switch
```

Examples for enabling/disabling compression are:

```
INIT/MEDIA_FORMAT=(NO)COMPACT MKx#:
MOUNT/MEDIA_FORMAT=(NO)COMPACT MKx#:
BACKUP/MEDIA_FORMAT=(NO)COMPACT MKx#:
```

NOTE

To be sure that the compression is enabled/disabled, you should include the correct software switch with each command line.

Index

S

T

U

W