DLTtape™ Cartridge Handling Guidelines and Inspection Procedure

In today's business environment, the storage and retrieval of critical business information is crucial to the success of any company. The DLTtape™ cartridge has been designed for superior performance with DLTtape drives and libraries. DLTtape cartridges provide the maximum reliability, durability, and capacity for data applications. DLTtape cartridges are manufactured and engineered for durability. With an archive life of 30 years* and head passes in excess of 1 million passes*, the DLTtape media is the ideal solution for your storage needs. The DLTtape cartridge's robust design and packaging can reward you with many years of quality and reliable service.

However, improper handling or a lack of awareness may affect the performance of any well engineered product. The DLTtape cartridge is manufactured to meet exacting standards. More than just a reel of magnetic tape, a DLTtape cartridge is a complex, precision component of the DLTtape system and contains special features, such as reel locks that hold the tape medium at the correct tension when the tape cartridge is not inserted in the DLTtape drive. Problems may occur when a tape cartridge has been dropped or damaged, either by accident or environmental stress. This paper provides both general handling guidelines and instructions for a simple visual inspection for DLTtape cartridges to ensure that each cartridge is in perfect condition to store and preserve your data before you use it.

DLTtape CARTRIDGE GENERAL HANDLING GUIDELINES

- Always keep each tape cartridge in its protective plastic case when it is not in the tape drive.
- When carrying tape cartridges in their cases, always orient the cases so that the grooves in the cases interlock. This prevents the cases from slipping apart and falling.
- Never stack the tape cartridges in a stack of more than five.
- Always observe the proper environmental conditions for the storage of tape cartridges. Refer to the cartridge reference card supplied with each cartridge.
- When placing tape cartridges in archival storage, make sure you stand each tape cartridge vertically.
- Avoid placing tape cartridge near any sources of high intensity magnetic fields, such as monitor or electric motors.
- Never apply adhesive labels or POST-IT notes on the top, side, or bottom of your DLTtape cartridge. Only use the user slide- in type label provided with each cartridge and slide it over the label slot on the cartridge.
- Do not carry cartridges loosely in a box or any other container. Allowing cartridges to hit together exposes the them to unnecessary physical shock.
- Do not touch or allow direct contact with tape or tape leader. Dust or natural skin oils can contaminate the tape and impact tape performance.
- Do not expose the tape cartridge to moisture or direct sunlight.
- Do not insert any cartridge that has been dropped into the DLTtape drive without at least a thorough visual inspection as described in this paper. A dropped cartridge may have dislodged, loosened, or damaged internal components.

When should you perform a visual mechanical inspection (VMI) on a DLTtape cartridge?

You should do a VMI

- As a general practice whenever you change or load a new tape cartridge
- If a tape cartridge is dropped or subject to some hard physical shock
- If the DLTtape drive becomes inoperable after loading a tape cartridge
- If you receive a shipment of tape cartridges that show any sign of shipping damage

Follow these steps to visually inspect a DLTtape cartridge:

1. Remove the tape cartridge from its protective plastic case.
2. Look at the tape cartridge to check for any obvious cracks or other physical damage. Look for broken or missing parts.
3. Gently shake the tape cartridge. Listen for any rattling or sounds of any loose pieces inside the cartridge. **If you hear anything loose inside, do not use the cartridge.**

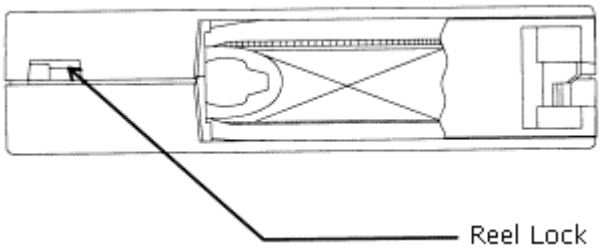


Figure 1: Location of One of the Two Reel Lock Tabs on the DLTtape

4. Hold the tape cartridge so that the end of the cartridge that is inserted into the DLTtape drive is facing you, as shown in Figure 1. You will see that there is a small opening on the left-hand side of the tape cartridge. Inside and near the center of this opening, you should see a small plastic tab. This is one of the reel locks. The reel locks can break if the cartridge is dropped. This may be the cause of any rattling sound you hear when you gently shake the tape cartridge. If this reel lock tab is not visible do not use the cartridge.

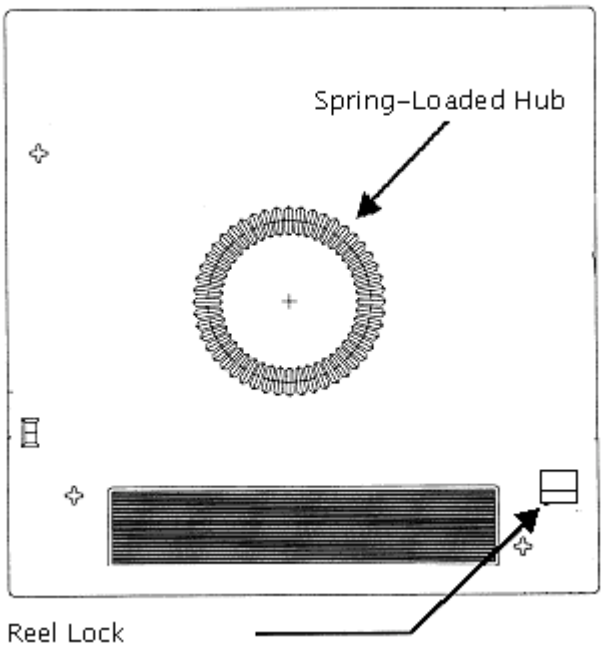


Figure 2: Location of Reel Lock Opening and Spring-Loaded Hub on Bottom of DLTtape Cartridge

5. Look at the bottom of the tape cartridge, holding it as shown in Figure 2. Check the opening indicated in Figure 2 and ensure that the small plastic tab is partially visible. This is the second reel lock. The reel locks can break if the cartridge is dropped. This may be the cause of any rattling sound you hear when you gently shake the tape cartridge. If this reel lock tab is not visible do not use the cartridge.

   Also located on the bottom of the tape cartridge is the spring-loaded hub. Verify that the hub is centered within the circular opening in the tape cartridge. Gently press the hub and make sure that it springs back into place. Make sure that it ends up centered within its circular opening.

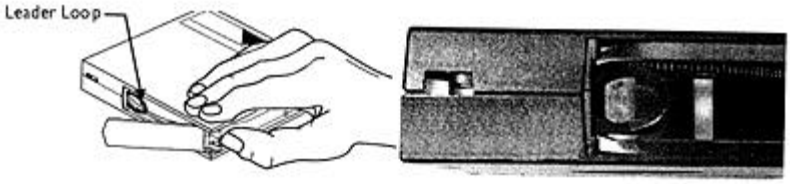


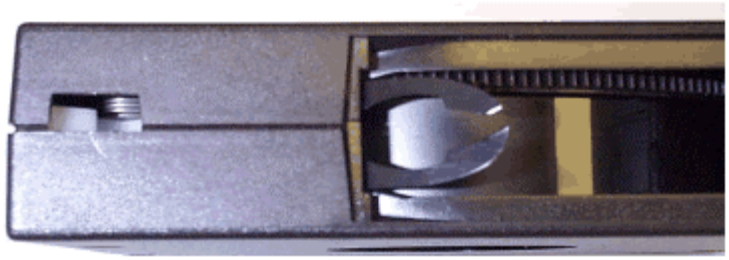
Figure 3: Opening the Door on a DLTtape Cartridge Showing Tape Leader Loop in its Correct Position

6. Ensure that the tape leader within the tape cartridge is in the correct position. To do this, you must open the tape cartridge door. Refer to Figure 3. Open the door by holding the DLTtape cartridge as shown in Figure 3.

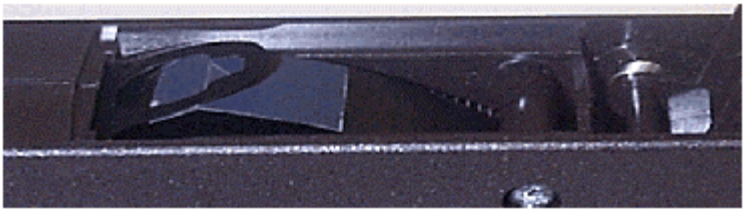
On the right side corner of the tape cartridge there is a small tab in a cut-out portion of the cartridge. Using your thumb, gently lift up on the tab and swing the door open (Figure 3).

Inside the door, you will see the tape and cartridge leader loop. The loop should stick up about an eighth of an inch when viewed from the edge; the loop must be a closed loop. If the loop is torn, bent, pulled in, or not sticking up about an eighth of an inch, do not use the tape cartridge.

Example 1:
"Swallowed" Tape Cartridge Leader



Example 2:
Torn or Broken Leader Loop



Example 3:
Tape is Loosely Wound

Figure 4: Three Examples of Tape Cartridges with Damage Visible During Visual Inspection

7. Figure 4 shows three different tape cartridge loop problems. No tape cartridge that exhibits the problems shown in the examples in Figure 4 should be used in a DLT tape system.

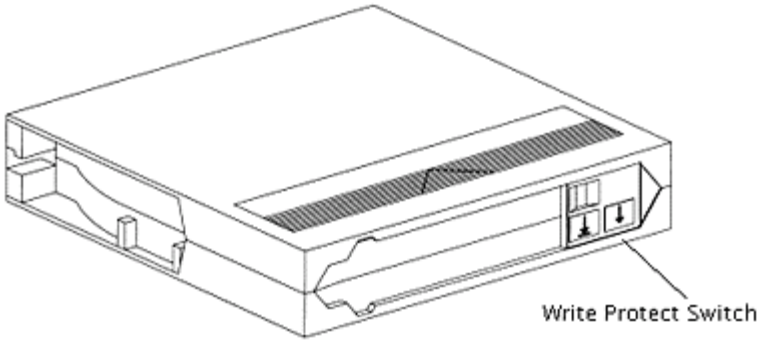


Figure 5: Location of Write Protect Switch

8. Finally, check for proper operation of the tape cartridge's Write Protect Switch (Figure 5). This sliding switch, located on the end of the tape cartridge used for the tape label, should snap smartly back and forth, and the orange tab should be visible when the tape cartridge is set to provide Write Protection (data on the tape cannot be written over).

   By following general handling procedures, conducting careful visual inspections of tape cartridges on a regular, ongoing basis, and making sure that tape cartridges are stored within their environmental limits, you will greatly reduce any chance that you will experience problems with your tape cartridges or cause damage to your DLT tape system. Respect your media as much as you do your data.

Specifications subject to change without notice

012999A

* DLTtape IV and IIIXT

Respect your storage media as you do your data. Ensure that your tape backup solution performs reliably by following both the general handling guidelines and visual mechanical inspection procedures described in this paper. These simple steps will help you prevent damage to tape cartridges and to identify any potential tape cartridge problems, and will prevent accidental loss of data or damage to your DLTtape system.