TANDBERG DATA

StorageLoader™

QUICK INSTALLATION GUIDE

Related publications available from Tandberg Data ASA:

Part No.	Title
433061	Tandberg Data StorageLoader Installation and User Manual
432980	Tandberg Data StorageLoader SCSI Interface Functional Specifications
432679	Tandberg Data DLT VS160 Reference Manual
433280	Tandberg 420LTO Installation and user manual

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Warning!

Do not apply power to or attempt to operate the Tandberg Data StorageLoader until the transporter locking screw is removed. This operation is necessary to prepare the unit for normal operation.

Introduction

This guide is designed to act as a guideline to enable quick installation of the Tandberg StorageLoader series. For additional product and operation details please refer to the Tandberg Data StorageLoader Installation and User manual P/N 433061, which is found on the resource CD included with the unit.

Installation of the StorageLoader may be quickly summarized in steps as follows:

- Unpack the StorageLoader

- Install the StorageLoader in a rack

- Connect the power cable to the StorageLoader

- Turn the StorageLoader on

- Remove the transport lock by following the instructions displayed on the front panel

- Select the appropriate SCSI ID's and unit options

- Connect the SCSI interface cable, and optionally the Ethernet cable

- Install the backup application software and configure it for use with the StorageLoader

- Load recording media into the removable magazines

In order to complete full installation of the StorageLoader the following additional materials are required.

- Simple hand tools (small Phillips screwdriver).

- Tool for emergency magazine removal (included in accessory kit)

- SCSI Host adapter card with 68 pin wide HD or VHDC connector

- Tape Application software which is verified with the StorageLoader

- Up to 8 pieces of the appropriate recording media to "stock" the StorageLoader to full tape capacity.

Front Panel of the StorageLoader

Magazine   LED   Standby   LCD   Control   Magazine
front bezel indicators switch   display   buttons   front bezel
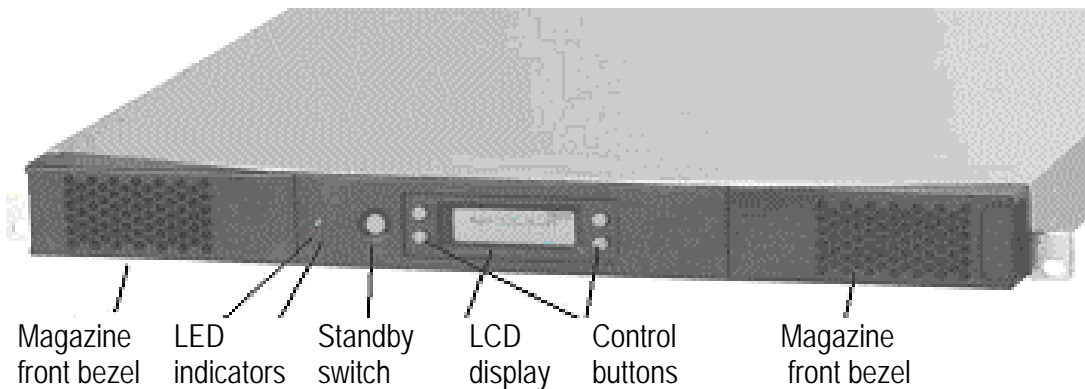
Figure 1. The StorageLoader's front side

Step 1. Unpacking the StorageLoader

Carefully unpack the unit from the shipping container. Save the container and packing materials in case you need to transport the StorageLoader in the future. The packaging is specifically designed for the loader to ensure it is not damaged during transportation.

Review the contents of the shipping container to be sure that all parts were included in the shipment. A standard package for the StorageLoader consists of the following items:

- A factory-assembled StorageLoader unit containing two cartridge magazines.

- A Standard Accessory Kit containing:

    - 1 The Tandberg Data StorageLoader CD containing all manuals

    - 1 Printed copy of the Quick Installation Guide

    - 1 Warranty/Registration Card

    - Rack Mount Hardware Kit

    - 2 Line Power Cords: one for USA/Japan and one for European power outlets

    - 1 VHDCI SCSI Interface Cable

    - 1 68-pin VHDCI LVD/SE SCSI Terminator.

    - 1 Ethernet cable

    - Tool for Emergency Magazine Release

    - 30 StorageLoader specific Bar code labels

There will be variations of this list. Please refer to your Quick Installation guide shipped with the StorageLoader.

Note: The StorageLoader contains no cartridges before shipment.

Step 2. Installing the StorageLoader in a Rack

The StorageLoader 1U is designed for use in 19" rack system using 1U of rack space. The length of the power cord and the SCSI cable may restrict the placement.

Attention: The StorageLoader is designed to operate in a horizontal position. Do not attempt to operate the StorageLoader in any other position than horizontally. Also make sure that:

- The airflow around the front and back of the StorageLoader is not obstructed.

- There is a minimum of 60cm free space in front of the unit to allow the operator to safely remove the magazines.

- The display and operator controls are easily accessed.

- The StorageLoader is away from the floor, and in a clean environment with temperature within specification.

The Rack Mounting Kit includes the following items:

- Rail Left Assembly

- Rail Right Assembly

- Screw M6x12 (6 pieces)

- Screw M5x8 (2 pieces)

Recommended mounting tools:

- Folding rule or tape measure

- Screwdriver

- 7 mm open-end wrench

Note: The rails are mounted to the loader during transportation. Before mounting the rails into the rack, dismount the rails from the loader and remove the spacers between the rails and the loader.

Back

Rail Right Assembly

Rail Left Assembly

Front
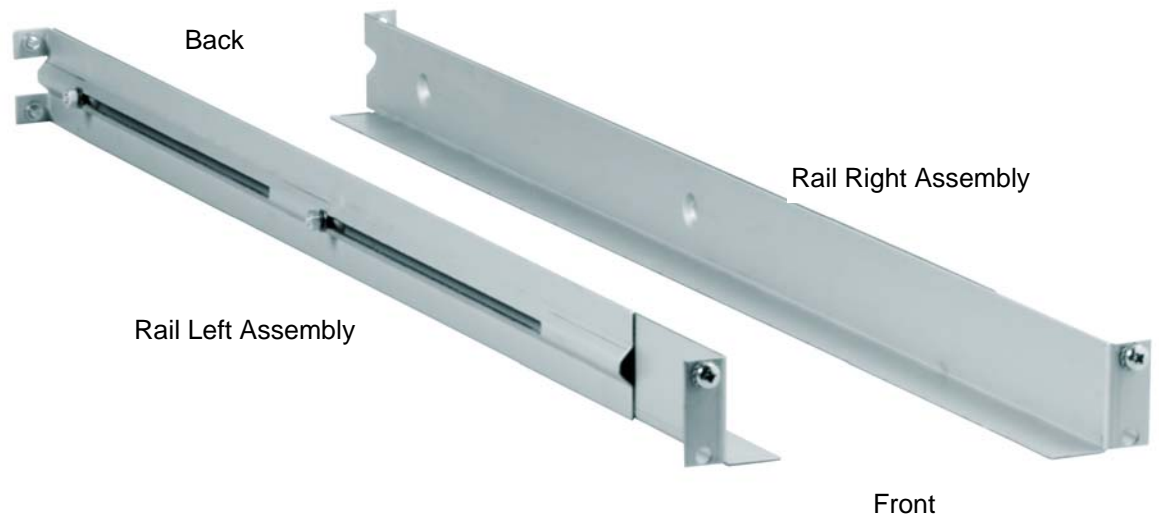
Figure 2. Rack Mounting kit

Installing the Rack Mounting Kit

- Determine the proper position of the rails in the rack.

Caution: Consider rack stability when deciding where to place the StorageLoader, hazardous conditions can be the result of uneven mechanical loading of a rack.

StorageLoader 1U uses 1U of vertical rack space. The rails must be installed in a full U position (The bottom of the rails must be aligned with the bottom of a U), see figure 3.

4.45 cm
(1.75 in)
1U

Figure 3. Rack mount rail

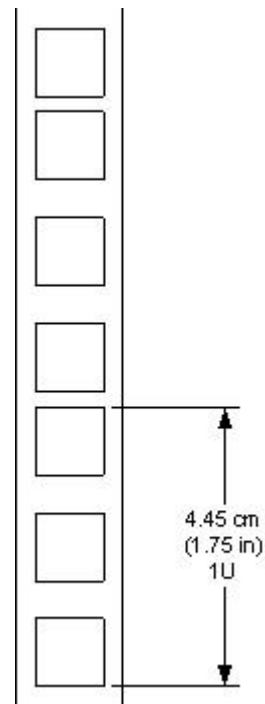### *Installing the "Rail Left Assembly"*

1. Measure the length between the rear rack mount rails and the front rack mount rails. If the measurement is shorter than the StorageLoader, move the two sets of screws M4x12, washers and nuts shown in Figure 4.

2. Adjust the "Rail Left Assembly" to fit the measurement in step 1.

3. Use a 7 mm open-end wrench together with the screwdriver to tighten the two M4x12 screws to fix the rail length. **Note**: *Using more than two screws will increase the stability of the Rack Mounting Kit.*

4. Place the "Rail Left Assembly" on the left side of the rack, between the rear rack mount rail and the front rack mount rail.

5. Mount the "Rail Left Assembly" at desired height using one M6x12 screw in front (upper hole in rail only) and two M6x12 screws at the backside. See figure 5.

Installing the "Rail Right Assembly"

Follow the instruction for left side only using the "Rail Right Assembly" on the right side of the rack.
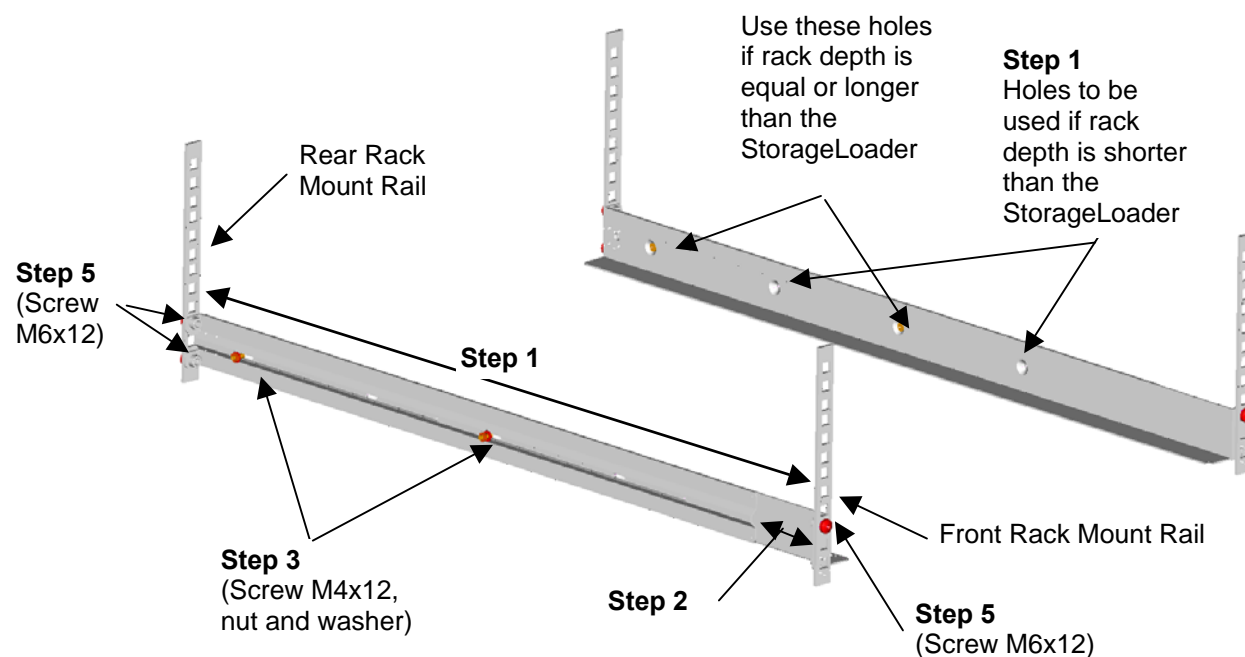

Figure 4. Mounting the Rack mounting kit to a rack

Figure 5 shows step 5 in the description:

Rack mounting kit mounted in rack with one screw M6x12 in upper hole on both left and right side.

On the rear side two screws must be used on both left and right side.

Totally six screws are used to install the "rack mounting kit" to the rack.

**Figure 5. Rack mounting kit mounted
in rack**

Mounting the StorageLoader to the Rack

Make sure that all the screws in the Rack Mounting Kit are tightened properly before installing the StorageLoader in the rack.

Slide the StorageLoader on the rails from the front of the rack, as shown in figure 6. Then fix the StorageLoader using one M6x12 screw in front of the rack on both left and right side (see figure 7) and one M5x8 on the backside of the Rack Mounting Kit on both left and right side (see figure 8).

**Figure 6. Slide the StorageLoader in
from the front**

**Figure 7. Fasten the front of the
StorageLoader to the rack**

Use one M5x8 screw on both left and right side (M5-thread) to fasten the StorageLoader to the rails' backside.
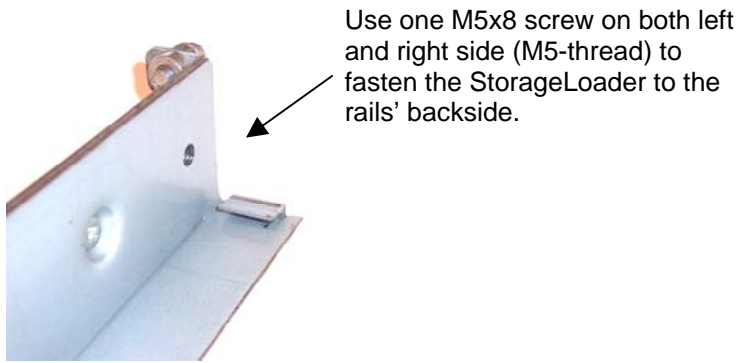
**Figure 8. Fasten the rear of the StorageLoader to the rails.**

Step 3. Connecting Power Cable

Before connecting the StorageLoader to your host computer system you should run the self-diagnostic of the unit. This preparation requires power to the StorageLoader. Go through the following steps to perform this test:

1. Use the power cables from the accessories included in the shipment. Make sure you select the power cord suited for your power system.

2. Plug the power cable into the rear of the StorageLoader (see figure 9). Plug the other end of the cable into a properly grounded electrical outlet.

Note: *Reliable earthing depends on earthing in the AC electrical outlet, in which the StorageLoader's power cable is connected. Adding the StorageLoader to an existing rack installation can cause a leaking current fault condition because of the summation of the leaking currents. For security, a 250V 2A (H) fuse is located near the power switch.*

3. Turn on the StorageLoader by switching the Power Switch to "1".
   If the transport lock is present the loader will detect this and instruct the user to remove it, see next step.
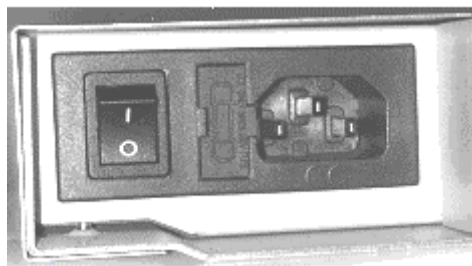
Figure 9. Power switch, fuse holder and power cord connection

Step 4. Removing the Transport Lock

The robot mechanism is protected from damage during shipment with a screw holding the robotics in a locked position.

This locking screw is marked with a red plastic tab protruding between the right magazine and the front panel assembly.

This locking screw must be removed before the StorageLoader can operate normally.
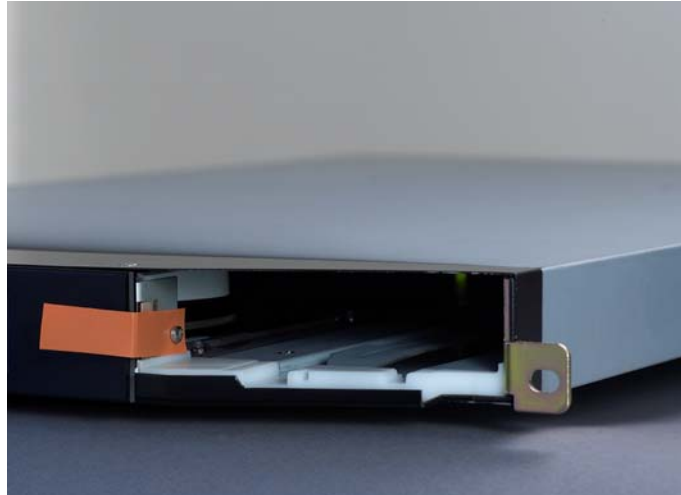

Figure 10. Magazine lock marked with red plastic tab

The locking screw will be detected when the StorageLoader is powered on. The display will show a message indicating the locking screw has been detected. The display will instruct the user to remove the magazine to gain access to the locking screw. Remove the screw and reinsert the magazine. The loader will now continue its power on sequence, see next step.

Note*: Keep the screw in a safe place. You will need it to lock the robot if you need to return your StorageLoader to the supplier for service or repair.*

Important: *The warranty does not cover damage to the loader, shipped without the locking screw properly installed.*

Step 5. Running Power-On Selftest

After the transport lock is removed, the loader will continue running it's power-on selftest and doing an inventory of its cartridges.

The word Idle and the cartridge map will appear on the default display screen. If the self-diagnostics and the inventory sequence are successfully completed, the green LED will illuminate. The StorageLoader is now ready to be installed in the system.

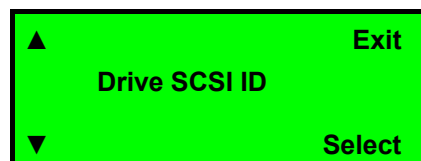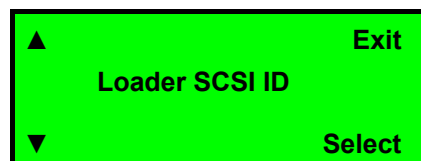If a problem occurs during the power-on sequence, the StorageLoader will display an error message on the display.

Step 6. Setting the SCSI Address

There is a LCD display on the front panel, and four control buttons. After the Power-on sequence is finished, select Menu and scroll down until you can select Setup. Then you scroll down until the display look like the figure below, and you select SCSI setup.

```
┌─────────────────────────────────────┐
│ ▲                             Exit   │
│         SCSI setup                   │
│                                      │
│ ▼                            Select  │
└─────────────────────────────────────┘
```

The SCSI address is a unique address that identifies the unit connected to the SCSI bus. The StorageLoader uses two SCSI addresses or Id's. One is for the loader robotics controller and the other is for the tape drive. The SCSI addresses can be configured through the operator buttons and the display on the front panel. In most cases the default addresses can be used. The default SCSI address for the StorageLoader robotics is 4 and the tape drive has SCSI address set to 5.

```
┌─────────────────────────────────────┐
│ ▲                             Exit   │
│        Loader SCSI ID                │
│                                      │
│ ▼                            Select  │
└─────────────────────────────────────┘
```

```
┌─────────────────────────────────────┐
│ ▲                             Exit   │
│        Drive SCSI ID                 │
│                                      │
│ ▼                            Select  │
└─────────────────────────────────────┘
```

To set the SCSI addresses for the StorageLoader and the built in tape drive, see the Installation and User manual for details. You may also wish to reserve a magazine slot for a cleaning cartridge, and set a security password at this time.

Changing some of these settings causes the StorageLoader and the drive to automatically reboot.

Step 7. Connecting the SCSI Bus Cable

Guidelines before connecting the SCSI cable:

A) Before the SCSI bus cable is connected to the StorageLoader, turn the StorageLoader power switch off.

B) Make sure that your host system is in a state were a new SCSI device can be safely connected to the SCSI bus.

C) Do not exceed SCSI bus length restrictions.

1. Add the length of all external and internal SCSI cables on the bus

2. Add 80 cm (31.5 inch) for the internal cable length in the StorageLoader.

3. The maximum allowed length of an LVD SCSI bus is 12 m (39 ft) if the number of SCSI devices exceeds two.

4. For an SE SCSI bus, be very careful regarding bus length. The normal combination has a SE bus transfer speed of 160 Mbyte/s with a maximum bus length of 3 m (9.8ft) and up to 4 SCSI devices connected. If your SE system operates with a different transfer speed or have more than 4 SCSI devices, we refer to the actual SCSI standard for complete bus length restrictions.

D) Before the StorageLoader is powered on and the system is restarted, make sure that the SCSI bus is properly terminated. If the StorageLoader terminates the SCSI bus, it is recommended to connect the terminator from the accessory kit box on the lower SCSI connector on the back plane.

To connect the SCSI bus cable:

1. On the rear of the StorageLoader, attach the device connector of the SCSI cable to the upper SCSI connector, see figure 11.

2. Secure the cable with the thumbscrews on the connector.

3. Connect the other end of the SCSI cable to the appropriate SCSI adapter on your system and fasten it with the thumbscrews.

4. If the StorageLoader is the last device on the SCSI bus, install a SCSI bus terminator to the free SCSI connector on the StorageLoader. Make sure that the terminator is of the correct type for your SCSI system.

5. It is possible to daisy chain several SCSI devices on the SCSI bus. If you do, the terminator must be connected to the last device on the bus. Note that there are limitations to the SCSI cable length.

Figure 11. SCSI cable and SCSI terminator connection

Step 8. Connecting the Ethernet Connector

To connect the StorageLoader to the Ethernet, use the provided cable from the accessory kit box.

1. Insert one end of the cable into the StorageLoader Ethernet port. Push until it snaps into place. The open port in figure 11 is for Ethernet connection.

2. Connect the other end to a normal 10/100 BaseT Ethernet outlet.

Step 9. Restarting Your System

It is recommended that all external SCSI devices, including the StorageLoader are powered on before the computer system is re-started. After restarting your system, including the StorageLoader, the StorageLoader will run a power-on Selftest (like in step 5 above). When the display reports that the StorageLoader is in the "Idle" state and the green LED is on, the StorageLoader is ready for further configuration and operation.

Note: The tape drive needs up to 40 seconds from power on until it's active on the SCSI bus. It is recommended to turn on the power at least 40 seconds before the computer system is started.

Step 10. BCR: Labeling of cartridges

If your loader is equipped with a bar code reader and you want to use this functionality, you need to attach bar code labels to the cartridges.

Note: You need to use StorageLoader specific bar code labels to ensure reliable functionality of the bar code reader. The bar code labels for LTO and DLT cartridges differ.

Cartridge labels **must** be oriented on the cartridges as shown in the figures below for LTO cartridges and DLT cartridges respectively.

Figure 12. Positioning of bar code label for LTO cartridges.
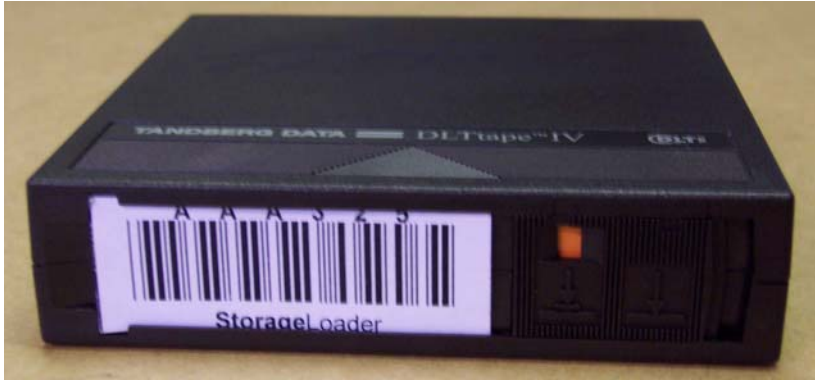
Figure 13. Positioning of bar code label for DLT cartridges.