

# *Compaq StorageWorks*

## **Compaq TL881/TL891 Family MiniLibrary System Drive Upgrade Procedure**

Reference Guide

Second Edition (November 1999)  
Part Number ER-TL891-DA. B01 / 127511-002  
Compaq Computer Corporation

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# About This Guide

This guide is designed to be used as step-by-step instructions for upgrading and as a reference for future upgrades.

## Text Conventions

This document uses the following conventions to distinguish elements of text:

<b>Keys</b>	Keys appear in boldface. A plus sign (+) between two keys indicates that they should be pressed simultaneously.
USER INPUT	User input appears in a different typeface and in uppercase.
<i>FILENAMES</i>	File names appear in uppercase italics.
Menu Options, Command Names, Dialog Box Names	These elements appear in initial capital letters.
COMMANDS, DIRECTORY NAMES, and DRIVE NAMES	These elements appear in uppercase.
Type	When you are instructed to <i>type</i> information, type the information <b>without</b> pressing the <b>Enter</b> key.
Enter	When you are instructed to <i>enter</i> information, type the information and then press the <b>Enter</b> key.

## Symbols in Text

These symbols may be found in the text of this guide. They have the following meanings.



**WARNING:** Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.

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**CAUTION:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

---

**IMPORTANT:** Text set off in this manner presents clarifying information or specific instructions.

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**NOTE:** Text set off in this manner presents commentary, sidelights, or interesting points of information.

## Symbols on Equipment

These icons may be located on equipment in areas where hazardous conditions may exist.



Any surface or area of the equipment marked with these symbols indicates the presence of electrical shock hazards. Enclosed area contains no operator serviceable parts.

**WARNING:** To reduce the risk of injury from electrical shock hazards, do not open this enclosure.

---



Any RJ-45 receptacle marked with these symbols indicates a Network Interface Connection.

**WARNING:** To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.

---



Any surface or area of the equipment marked with these symbols indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

**WARNING:** To reduce the risk of injury from a hot component, allow the surface to cool before touching.

---



Power Supplies or Systems marked with these symbols indicate the equipment is supplied by multiple sources of power.

**WARNING:** To reduce the risk of injury from electrical shock, remove all power cords to completely disconnect power from the system.

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## Getting Help

If you have a problem and have exhausted the information in this guide, you can get further information and other help in the following locations.

### Compaq Technical Support

You are entitled to free hardware technical telephone support for your product for as long you own the product. A technical support specialist will help you diagnose the problem or guide you to the next step in the warranty process.

In North America, call the Compaq Technical Phone Support Center at 1-800-OK-COMPAQ<sup>1</sup>. This service is available 24 hours a day, 7 days a week.

Outside North America, call the nearest Compaq Technical Support Phone Center. Telephone numbers for world wide Technical Support Centers are listed on the Compaq website. Access the Compaq website at <http://www.compaq.com>.

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<sup>1</sup> For continuous quality improvement, calls may be recorded or monitored.

Be sure to have the following information available before you call Compaq:

- Technical support registration number (if applicable)
- Product serial number (s)
- Product model name(s) and numbers(s)
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level
- Detailed, specific questions

## **Compaq Website**

The Compaq website has information on this product as well as the latest drivers and Flash ROM images. You can access the Compaq website at <http://www.compaq.com>.

## **Compaq Authorized Reseller**

For the name of your nearest Compaq Authorized Reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- Elsewhere, see the Compaq website for locations and telephone numbers.

# Adding a Second Drive

## Introduction

This guide explains how to add a second tape drive to the TL881/TL891 Family MiniLibrary System.

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**IMPORTANT:** All screws that do not use lock washers, captive washers, or lock nuts must have Loctite 222 applied when parts are reassembled in the field. If you ignore this step, you might cause premature failure of the mechanism.

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## Parts Location

Figure 1 shows the location of most of the field-replaceable parts.

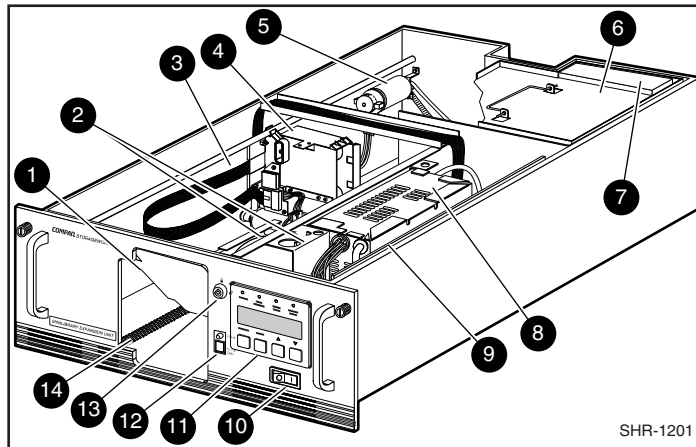


Figure 1. Parts location

**Table 1**  
**Parts Location**

Figure Legend	Description
①	Magazine door
②	Door opener/magazine lock
③	Shuttle cable
④	Shuttle
⑤	Shuttle motor
⑥	Drive caddy assembly
⑦	Fan
⑧	Power supply
⑨	Controller PWB
⑩	AC power switch

*continued*

**Table 1**  
**Parts Location** *continued*

Figure Legend	Description
11	Control panel
12	<b>Unlock/Open</b> button and locked indicator
13	Magazine security lock
14	Leadscrew

## Overall Procedure

**NOTE:** If the Base Module is part of an expanded TL881/TL891 Family MiniLibrary System, refer to the *Compaq StorageWorks TL881/TL890/TL891 Family MiniLibrary System Maintenance and Service Guide* for information on removing the Base Module from the MiniLibrary system.

To add a second drive to the Base Module:

1. Remove the skin cover, if present.
2. Remove the cover plate.
3. Remove the drive caddy assembly.
4. Install the new drive.
5. Replace the drive caddy assembly.
6. Replace the cover plate.
7. Replace the skin cover.

## Removing and Replacing the Skin Cover (Desktop Models Only)

The skin cover is held in place by two captive screws near the top of the front panel and by two screws on each side of the Base Module (Figure 2).

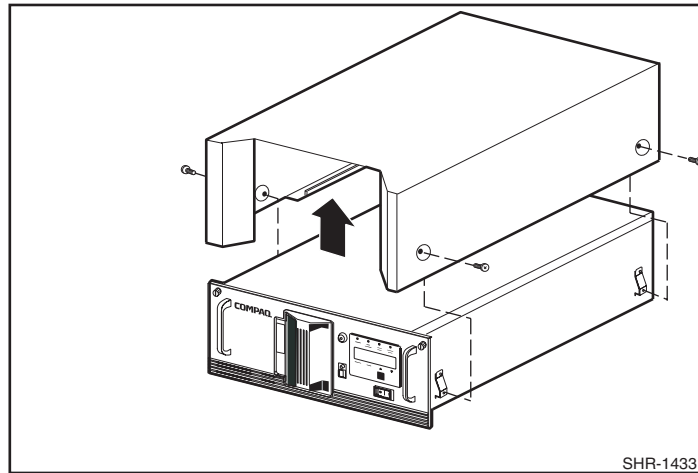


Figure 2. Removing the skin cover

### Removing

To remove the skin cover from the Base Module:

1. Remove the two screws on each side of the Base Module.
2. Grasp the cover at the lower edge of each side and then lift it straight up. There are two notches on each side of the cover to help clear the mounting brackets.

## **Replacing**

To replace the skin cover on the Base Module:

1. Slide the skin cover over the module until it touches the front panel.
2. Insert the two screws through the skin cover into the Base Module, but do not tighten the screws yet.
3. Position the front edge of the skin cover so that it is flush against the back of the front panel. Tighten the captive screws in the clip nuts.
4. Tighten the two screws into the Base Module.

## **Removing and Replacing the Cover Plate**

### **Removing**

To remove the cover plate from the Base Module:

1. If the Base Module is a desktop model, remove the skin cover as described in “Removing and Replacing the Skin Cover (Desktop Models Only).”
2. Disconnect the power and interface cables at the rear of the module.
3. Unscrew the captive screw in the center of the cover plate (Figure 3).
4. Slide the cover plate one-half inch toward the rear of the module.
5. Lift the cover plate off the Base Module.

## Replacing

To replace the cover plate on the Base Module:

1. Place the cover plate on the Base Module so that it overhangs one-half inch at the rear of the module (Figure 3).
2. Slide the cover plate toward the front of the Base Module until the cover plate touches the front panel.
3. Tighten the captive screw in the center of the cover plate.
4. Connect the power and interface cables at the rear of the module.
5. If the Base Module is a desktop model, replace the skin cover as described in "Removing and Replacing the Skin Cover (Desktop Models Only)."

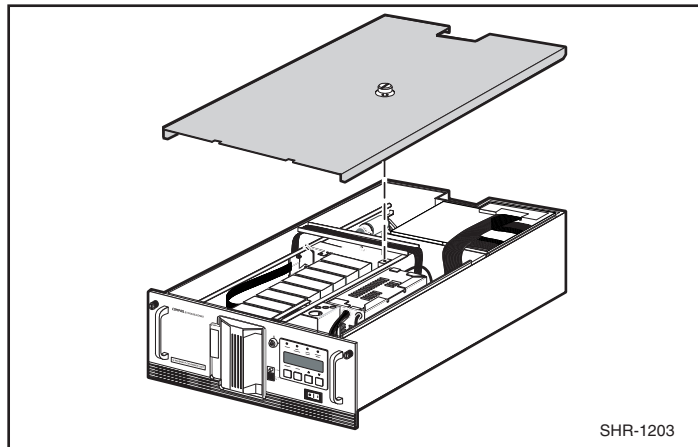


Figure 3. Removing the cover plate

## Removing and Replacing the Drive Caddy Assembly

The drive caddy assembly is an enclosure that holds one or two DLT drives and the interconnecting cables. The assembly includes the SCSI interface connectors and cables for the Base Module, the power cables for the drives, and communication cables from the drives to the controller PWB.

### Removing

To remove the drive caddy assembly from the Base Module:

1. Remove the cover plate as described in “Removing and Replacing the Cover Plate.”
2. Disconnect the SCSI cable connectors ❶, from the controller SCSI extension cable.

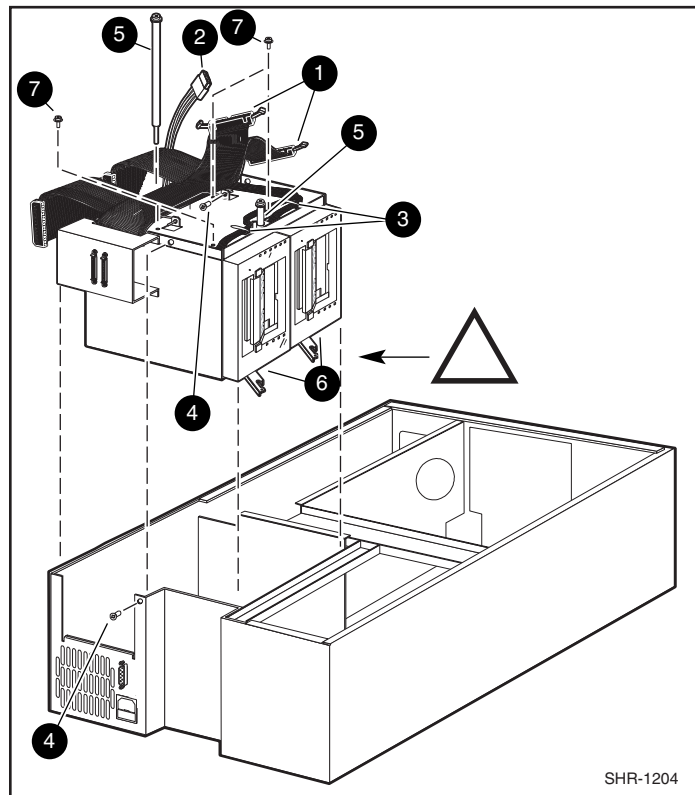


Figure 4. Drive caddy

3. Disconnect the drive power Y cable ❷ from the power supply connector.
4. Disconnect the drive 1 RS-422 cable ❸ from the controller PWB end.
5. Remove two M4 x 8 mm flat-head screws ❹ from along the upper edge of the drive caddy assembly.
6. Remove two M4 extension screws ❺ from the top of the drive caddy assembly.



**CAUTION:** Be careful not to break the door levers when you lift the drive caddy assembly out of the Base Module in the next step. To prevent this, steady the caddy so it cannot rock forward as it clears the platform when you're lifting it up, and do not allow the door levers to touch the strut across the top of the Base Module.

---

7. Grasp the handle on top and lift the drive caddy assembly out of the Base Module carefully. Make sure you tilt the rear end of the caddy as it is being removed so the door levers don't bump against the chassis crossbrace.
8. Set the drive caddy assembly on the work surface and install the second tape drive as described in "Installing the Second Tape Drive."

## Replacing

To replace the drive caddy assembly in the Base Module:



**CAUTION:** Be careful not to break the door levers when you set the drive caddy assembly down in the Base Module. To prevent this, steady the assembly as you lower it by the handle so it cannot rock forward as it approaches the platform, and do not allow the door levers to touch the strut across the top of the chassis.

---

1. Grasp the drive caddy assembly by the handle, tilt the front end down at a slight angle, and then lower it into position in the Base Module. Orient it as shown in Figure 4.
2. Replace the two M4 extension screws ❺ at the top of the assembly.
3. Coat the threads of the two M4 x 8 mm flat-head Phillips screws ❹ with Loctite 222, and replace them on the upper edge of the drive caddy assembly.
4. Connect the drive 0 and drive 1 RS-422 cables ❸ to the controller PWB.

5. Connect the drive power cable ❷ to the power supply connector.
6. Connect the SCSI cable connectors ❶ to the controller SCSI extension cable.
7. Replace the cover plate as described in “Removing and Replacing the Cover Plate.”

## Installing the Second Tape Drive

To install the second tape drive:

1. Remove the four 6-32 sems pan-head Phillips screws ❷ that hold the blank panel in place in the drive caddy assembly; there are two on the top of the assembly (Figure 4) and two on the bottom of the assembly.
2. Slide the blank panel out of the drive caddy assembly.
3. Disconnect the RS-422 cable that is located toward the front on the top of the drive. Lift the cable clear of the cable clamps and set it aside.
4. Install the door lever on the flattened shaft at the bottom of the drive.
5. Slide the drive ❸ into the drive caddy assembly. Position the drive so the threaded holes in the top and bottom of the drive are aligned with the screw holes.
6. Install the four 6-32 sems pan-head Phillips screws that were removed in Step 1.
7. Connect the unused connector on the power Y-cable to the drive just installed.
8. Connect the unused connector on the SCSI cable to the drive just installed.
9. Install the RS-422 cable supplied with the kit, sliding it under the clamps so that the connector is adjacent to the connector on top of the new drive.
10. Install the RS-422 cable removed in step 3 over the top of the new RS-422 cable so that the connector is adjacent to the connector on top of the original drive.
11. Connect the RS-422 cables to the connectors on the top of the drives, through the holes in the top of the drive caddy assembly.
12. Replace the drive caddy assembly as described in “Removing and Replacing the Drive Caddy Assembly.”





