



RAID Array 310 Controller Cover and Faceplate Replacement Kit

Installation Guide

EK-SMCPL-IG. A01

First Edition, June 1998

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Revision Record

This Revision Record gives a publication history of the guide; it lists the guide revision levels, the release date of each revision, and a summary of the changes made by each revision.

The following revision history lists all revisions of this guide and their effective dates. The publication part number is shown in the Revision Level column, with the last entry denoting the latest revision. This guide supports the StorageWorks RAID Array 310 Controller.

Revision Level	Date	Summary of Changes
EK-SMCPL-IG. A01	June 1998	Initial Release

About This Guide

This section identifies the audience of the guide, describes the guide's contents (chapter-by-chapter) and structure, and lists related documents.

Visit our Web Site for the Latest Information

Check our Web site for the latest drivers, technical tips, and documentation. We can be found in the technical area of our Web page:

<http://www.storage.digital.com/>

Intended Audience

This guide is intended for administrators of StorageWorks RAID Array 310 subsystems. Installing the controller cover and faceplate requires a general understanding of PCs and basic hardware installation procedures.

Document Structure

This guide contains the following chapters:

Chapter 1 Installation Kit Description

This chapter lists and describes the Installation Kit part numbers, and illustrates the major components of the Kit, including the cover and faceplate.

Chapter 2 Installation Procedures

This chapter tells you how to install the major components of the Installation Kit.

Chapter 3 Controller Battery Replacement

This chapter tells you how to replace the controller battery after the major components have been installed.

Chapter 4 Controller PCMCIA Card Replacement

This chapter tells you how to replace the controller PCMCIA card after the major components have been installed.

Support and Services

Who to contact in the Americas

Information and Product Questions:	Local Sales Office / StorageWorks Hotline 1-800-786-7967
---	---

Installation Support:	Contact the DIGITAL Distributor where the Storage Solution was Purchased / Local Digital Sales Office.
------------------------------	--

DIGITAL Multivendor Customer Service (MCS)

Installation	Contact the DIGITAL Customer Support Center (CSC).
---------------------	--

Warranty	Contact the DIGITAL Customer Support Center (CSC) for warranty service after solution is installed and operating.
-----------------	---

Remedial	Contact the DIGITAL Customer Support Center (CSC)
-----------------	---

Note: A Service Contract is recommended when the equipment is out of warranty. Contact the local DIGITAL Sales Office.

Customer Support Center (CSC)	1 800-354-9000
--------------------------------------	----------------

Who to contact in Europe

Information and Product Questions,	Contact the DIGITAL Distributor or reseller
---	---

Installation Support, and Installation:	from whom the Storage Solution was purchased.
--	---

For Warranty Service	See the Warranty Card packaged with the product.
-----------------------------	--

For Remedial Service	Contact the DIGITAL Distributor or reseller from whom the Storage Solution was purchased.
-----------------------------	---

Note: A Service Contract is recommended when the equipment is out of warranty.

Who to contact in Asia Pacific

For all services, contact the DIGITAL Distributor or reseller from whom the equipment was purchased.

1

Replacement Kit Description

This chapter lists and describes the cover and faceplate replacement kit part numbers, and illustrates major components of the replacement kit.

The replacement kit (Part Number 70-33732-01) is designed to make it easier to remove and replace both the controller battery and the PCMCIA card. The new cover and faceplate make the battery accessible from the front of the RAID Array 310 cabinet and the PCMCIA card accessible from the left side of the controller. The component list of replacement kit part numbers is listed in Table 1-1 together with a description of each part and the quantity contained in the kit; Figure 1-1 illustrates the major components of the kit.

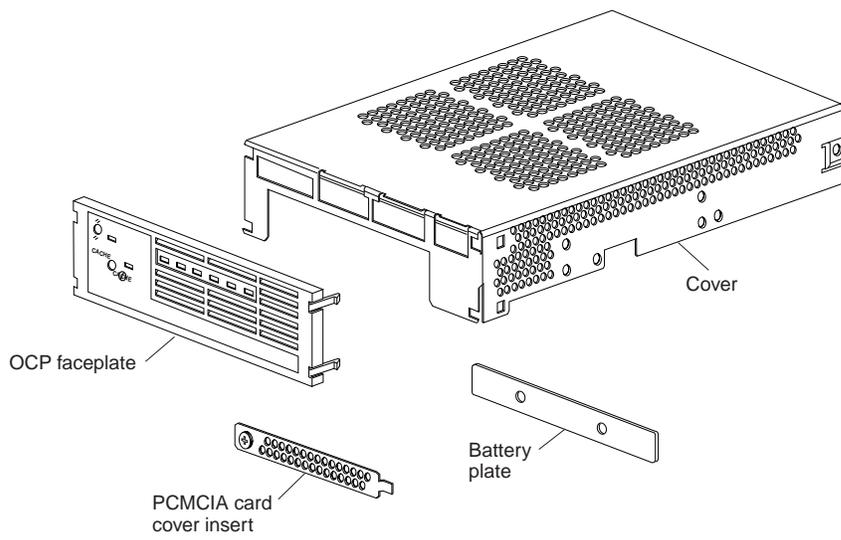
Unpack the kit and make an inventory of the parts; if any of the parts is missing, contact the applicable DIGITAL office (refer to *Support and Services* in the *About This Guide* section).

Table 1-1 Replacement Kit Part Numbers

Part Number	Description	Quantity
70-32154-02	COVER ASSEMBLY	1
74-49680-01	OCP* FACEPLATE (BEZEL)	1
74-52614-01	BATTERY PLATE	1
70-33295-01	PCMCIA CARD COVER INSERT	1
90-10174-00	SCREW, SEMS 6-32 PAN	2
90-00039-42	SCREW, 6-32 x ¼ FLAT	5
99-06557-03	BAG, POLY RECLOSE (3 x 4)	1
99-06557-30	BAG, POLY RECLOSE (10 x 13)	1
36-28231-01	LABEL, DIR. THERMAL (.81 x 6.00)	1
EK-SMCPL-IG	INSTALLATION GUIDE	1

***Operator Control Panel**

Figure 1-1 Replacement Kit Major Components



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2

Replacement Procedures

This chapter tells you how to prepare the subsystem so you can replace the cover and faceplate and lists the replacement procedures.

CAUTION

Make sure you have an electrostatic discharge (ESD) mat ready to use as a work surface, and be sure to connect yourself to a good ground with an ESD wrist strap when you handle the subsystem controller.

NOTE

Take the necessary steps to ensure that you preserve the original storage set configuration(s).

2.1 Turning off the RAID Array 310 Subsystem

Do these steps to prepare the subsystem for the kit installation.

1. Turn off the system to which the RAID Array 310 subsystem is attached, or terminate all the jobs that are using the subsystem.
2. Connect a maintenance terminal to the controller maintenance port located on the rear of the subsystem cabinet.
3. Remove the controller from service by issuing the following CLI command:

```
HSZ20> SHUTDOWN THIS_CONTROLLER
```

4. The controller green LED lights continuously when the shutdown is complete; when the LED lights continuously turn off the subsystem power and disconnect the ac power cord.

NOTE

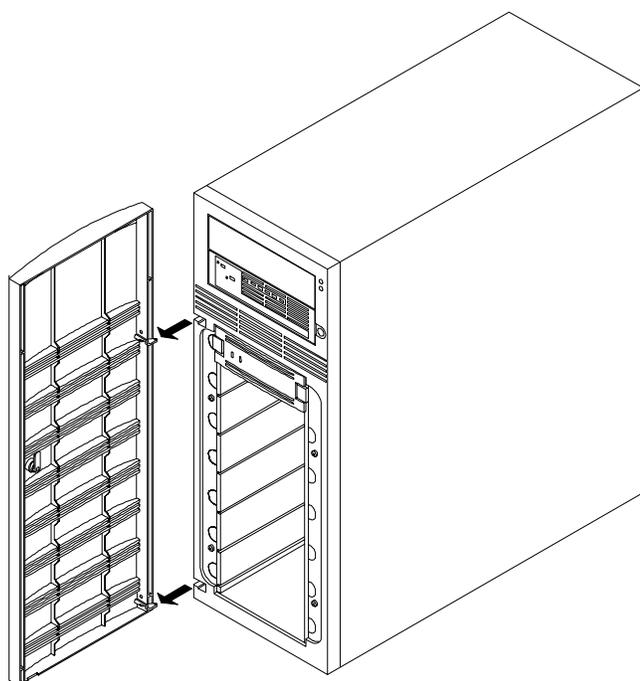
If you wish to move the cabinet about, disconnect the SCSI cable and the maintenance terminal cable from the rear of the cabinet.

2.2 Removing the Subsystem Cabinet Door

Do these steps to remove the cabinet door.

1. Unlock the door if necessary, and swing the door open (Figure 2-1).
2. Lift the door upwards to free the two pivots on the left side of the door from the receptacles on the left front of the cabinet; set the door aside.

Figure 2-1 Removing the Door



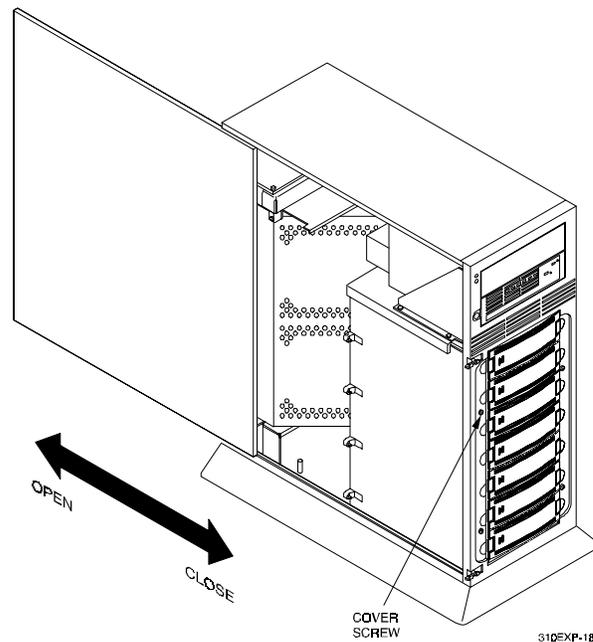
RAID310-25

2.3 Removing the Left-Side Cover

Do the following steps to remove the left-side cover from the cabinet.

1. Use a #10 TORX-head screwdriver to remove the screw that secures the left-side cover to the cabinet (Figure 2-2); set the screw aside.
2. Grasp the hand hold on the rear of the cover and slide the cover towards the rear of the cabinet until it is free of the cabinet; set the cover aside.

Figure 2-2 Removing the Left-Side Cover

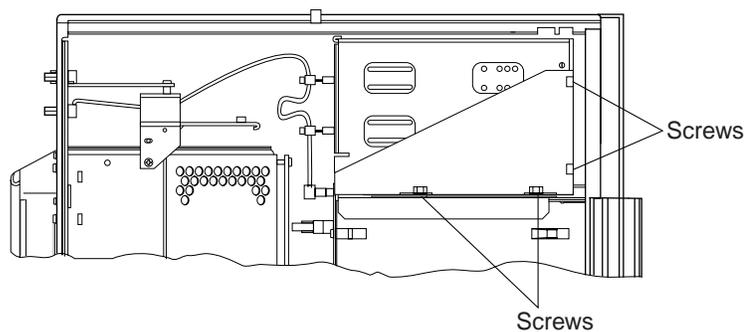


2.4 Removing the Controller Housing from the Cabinet

Do the following steps to remove the controller housing from the cabinet.

1. The controller housing is secured to the cabinet by a bracket that is held to the cabinet with four screws (Figure 2-3).
 - a. Use a flat-head screwdriver to remove the two screws that hold the controller housing to the drive housing; set the screws aside.
 - b. Use a #10 TORX-head screwdriver to remove the two screws that hold the controller housing to the cabinet front bezel; set the screws aside.
2. Using your thumbs, press against the front panel of the controller to push the housing free of the cabinet bezel.
3. Move the housing out far enough so you can disconnect all the cables connected to it; make a note of where each cable connects before you disconnect it.
4. Lift the housing out of the cabinet and set it on the ESD mat.

Figure 2-3 Controller Housing Bracket Screws



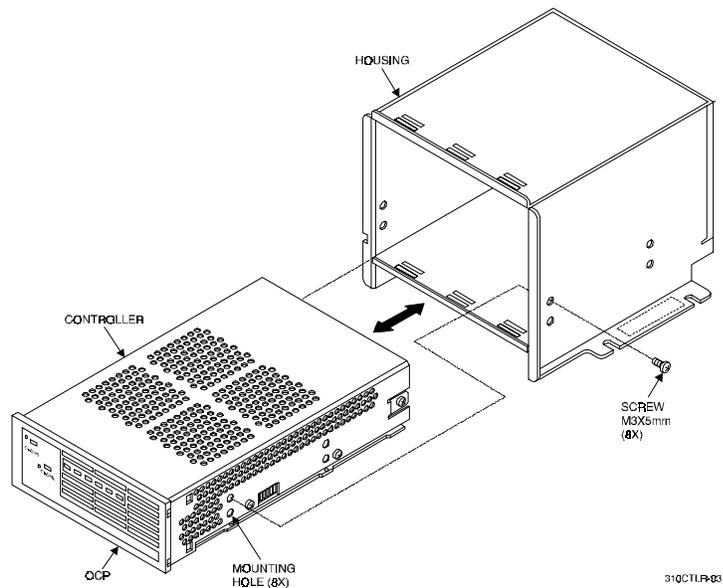
CX06377A

2.5 Removing the Controller from the Housing

Do the following steps to remove the controller from the controller housing.

1. There are four Phillips-head screws on each side of the housing that secure the controller in the housing (Figure 2-4). Remove the eight screws and set them aside.
2. Slide the controller forward out of the housing; put it on the ESD mat and set the housing aside.

Figure 2-4 Removing the Controller from the Housing

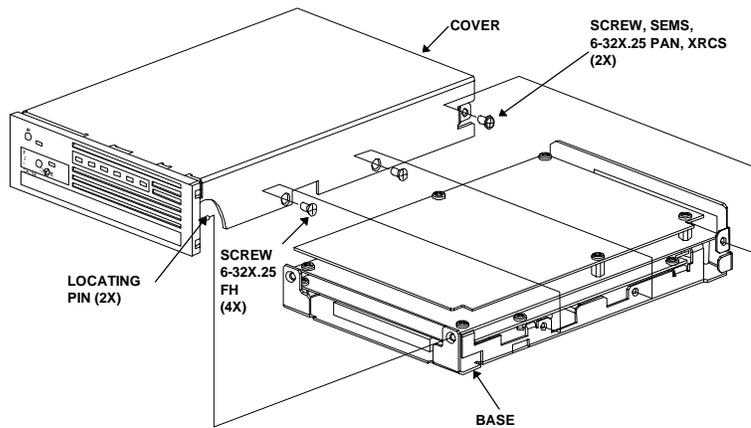


2.6 Removing the Controller Cover

Do the following steps to remove the controller cover.

1. There are two flat-head screws on each side of the controller cover that secure it to the base (Figure 2-5); remove the four screws and set them aside.
2. There is a pan-head screw on each side of the cover at the rear that also holds the cover to the base; remove the two screws and set them aside.
3. Slide the cover forward carefully and remove it from the base; you will be installing a replacement cover, so the cover just removed will not be used again.

Figure 2-5 Removing the Controller Cover



2.7 Installing the Replacement Cover (Part Number 70-32154-02)

Do the following steps to install the replacement cover on the controller base.

1. Find both the replacement cover and the PCMCIA card cover insert (part number 70-33295-01).
2. Attach the PCMCIA card cover insert to the left side of the replacement cover (Figure 2-6) with one of the 6-32 flat-head screws provided in the kit; leave this screw as loose as you possibly can to avoid interference when you install the cover on the base.
3. There are two locator pins inside the front of the replacement cover (you can see these clearly in the illustration of the original cover, Figure 2-5). The two pins fit into the locator holes on the front of the controller base (Figure 2-7). Set the replacement cover down over the base with the front of the cover forward of the front of the base; then slide the cover toward the rear of the base so that the locator pins slide into the locator holes.
4. Secure the cover to the base with four 6-32 flat-head screws and two SEMS screws; do not tighten any screws until all six screws have been started.
5. Tighten the screw that secures the PCMCIA card cover insert.

Figure 2-6 Attaching the PCMCIA Card Cover Insert

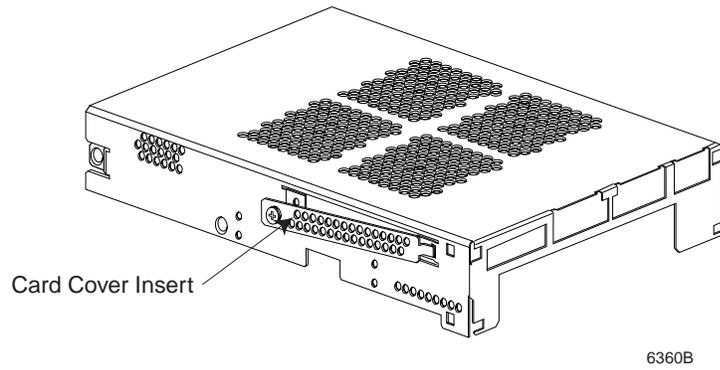
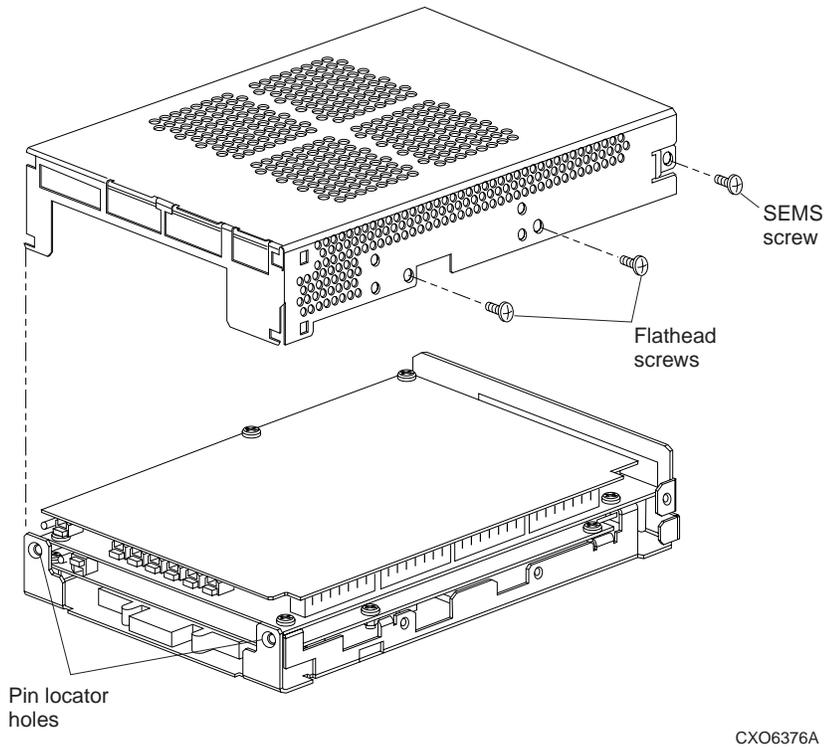


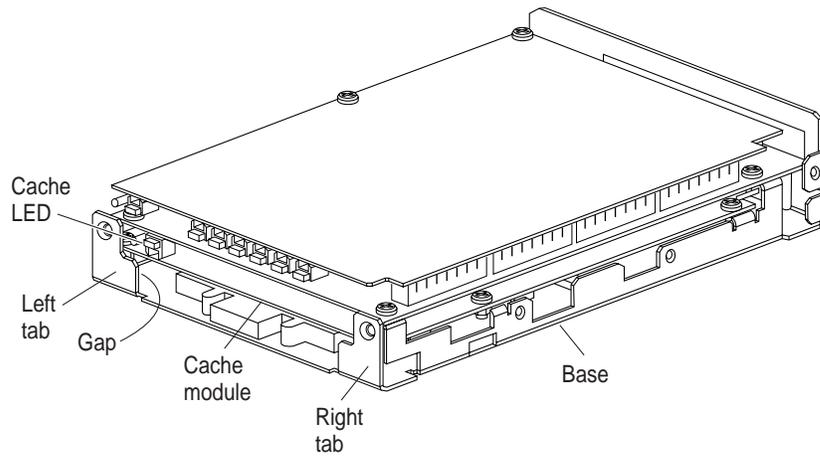
Figure 2-7 Installing the Replacement Cover



2.8 Installing the Battery Plate (Part Number 74-52614-01)

Figure 2-8 shows the controller base without its cover to illustrate how the battery plate installs. There is a gap between the tabs and the cache module; the battery plate slips into this gap. Do the following steps to install the plate.

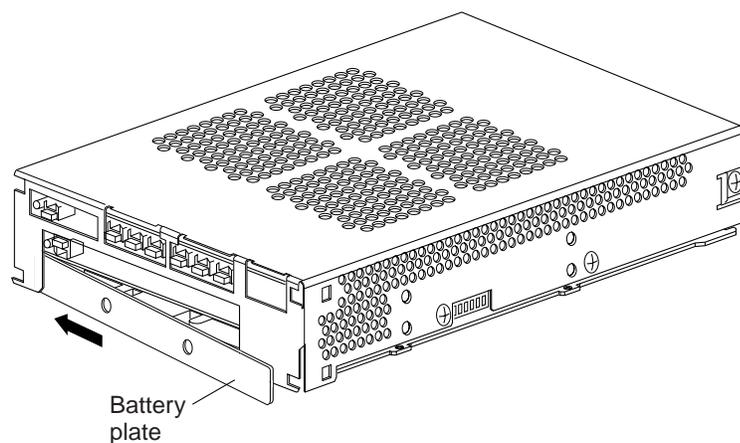
Figure 2-8 Gap Between Tabs and Cache Module



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1. Set the battery plate flat against the cache module and slide it into the gap between the cache module and the left tab (Figure 2-9)

Figure 2-9 Battery Plate Behind Left Tab



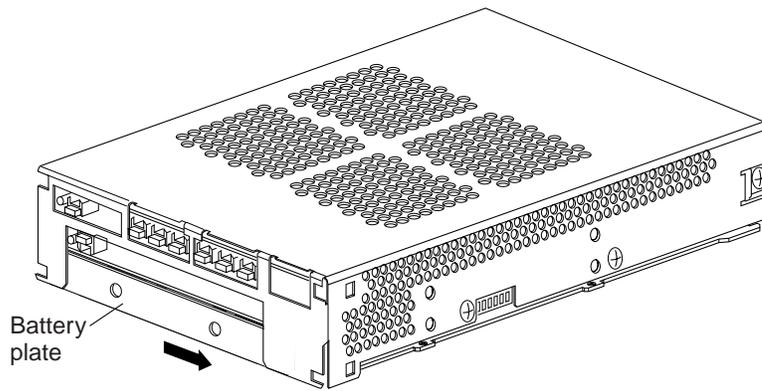
CXO6362A

2. Slide the battery plate all the way to the left.
3. Slide the plate to the right, into the gap between the right tab and the cache module (Figure 2-10).
4. Center the battery plate so that it is held securely by the tab at each end.
5. Push down the battery plate gently so that it does not press against the cache module LED (shown in Figure 2-8).

NOTE

The holes in the battery plate are service holes,
not screw holes

Figure 2-10 Battery Plate Behind Right Tab

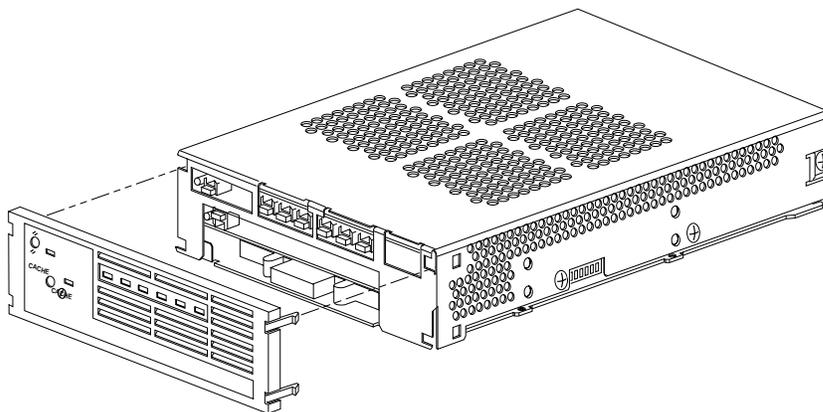


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2.9 Installing the Replacement OCP Faceplate (Bezel) (Part Number 74-49680-01)

The replacement OCP faceplate has four locking tabs that snap into holes in the sides of the new cover (Figure 2-11). Line up the locking tabs with the slots in the front of the cover and slide the tabs in until they lock into the holes in the sides of the cover. Make sure the LEDs and pushbuttons on the modules are aligned with the access holes in the faceplate; if you have to move them to line them up, do so carefully.

Figure 2-11 Installing the OCP Faceplate (Bezel)



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2.10 Post-Installation

To return the subsystem to operation do the following:

1. Replace the controller in the controller housing (reverse the procedure in Section 2.5).
2. Replace the controller housing in the subsystem cabinet (reverse the procedure in Section 2.4).
3. Replace the left-side cover (reverse the procedure in Section 2.3).
4. Replace the subsystem front door (reverse the procedure in Section 2.2).
5. Reconnect the ac power cord and turn on the ac power.

NOTE

Be sure you verify that the subsystem storage configuration is the same as it was before you installed the cover and faceplate kit.

3

Controller Battery Replacement

This chapter tells you how to change the controller battery after the cover and faceplate kit has been installed.

NOTE

Take the necessary steps to ensure that you preserve the original storageset configuration(s).

CAUTION

You need to wear an electrostatic discharge (ESD) wrist strap to prevent electrostatic damage.

3.1 Turning off the RAID Array 310 Subsystem

Do these steps to ensure that you preserve the storage configuration information.

1. Shut down the system to which the RAID Array 310 subsystem is attached, or terminate all jobs that are using the subsystem.
2. Connect a maintenance terminal to the controller maintenance port located on the rear of the subsystem cabinet.
3. Remove the controller from service by issuing the following CLI command:

```
HSZ20> SHUTDOWN THIS_CONTROLLER
```

4. The controller green LED lights continuously when the shutdown is complete; when the LED lights continuously turn off the subsystem power switch and disconnect the ac power cord.

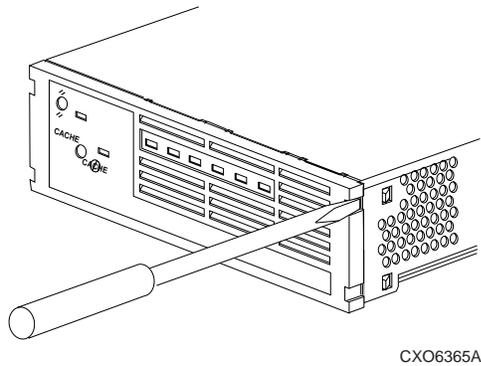
3.2 Removing the Battery

Do these steps to remove the battery from the controller.

1. Unlock the subsystem cabinet front door if necessary and swing the door open.

2. There are two locking tabs on each side of the controller faceplate that snap into slots in the controller cover (Figure 3-1 shows the two slots on the right side of the cover). To release a locking tab insert a blade screwdriver in the locking tab recess and push the tab towards the interior of the controller to snap the tab end out of the cover slot. Release all four tabs and remove the faceplate.

Figure 3-1 Releasing Faceplate Tabs



3. Remove the battery plate by first sliding it to the left to free the right side of the plate (Figure 3-2); then grasp the right side of the plate and pull the plate free (Figure 3-3). Be careful not to move or dislodge any of the controller components when you are removing or replacing the plate.

Figure 3-2 Sliding the Battery Plate

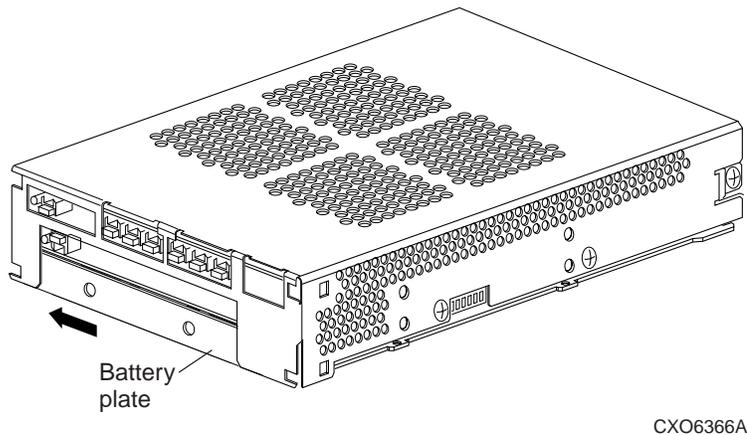
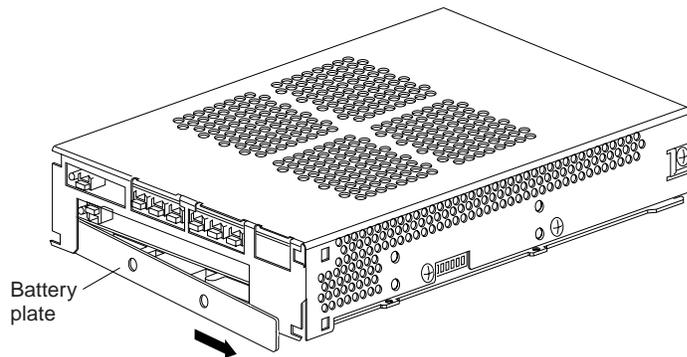


Figure 3–3 Removing the Battery Plate



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WARNING

Lead-acid batteries are high-energy devices. To prevent personal injury or equipment damage do not allow the battery tabs to contact any conductive surface.

4. The battery is installed in a tray and is held in place only by friction. The battery terminals are connected to the controller by a connector plug that mates with a printed circuit board (PCB) socket mounted to the left of the battery tray. The plug has a latch on the bottom that secures the plug to the socket. To disconnect the plug from the socket, lift up the front edge of the latch and pull the plug out of the socket.
5. Use the wires attached to the plug to pull the battery out of the tray far enough so you can grasp the battery with your fingers and pull it out of the tray completely; set the removed battery aside.
6. Slide the replacement battery into the tray and connect the plug to the PCB socket; make sure the plug is latched into the socket.
7. Replace the battery plate; refer to Chapter 2, Section 2.8, if you need instructions on installing the plate.
8. Replace the faceplate by lining up the faceplate locking tabs with the slots in the front of the controller cover and sliding the tabs in until they lock into the holes in the sides of the cover. Make sure the LEDs and pushbuttons on the modules line up with the access holes in the faceplate.
9. Close the subsystem cabinet front door.
10. Connect the ac power cord to the ac source, and turn on the ac power switch.

11. Dispose of the replaced battery **properly** by:
- a. Returning the battery to a DIGITAL service center, or
 - b. Recycling it at a local hazardous material disposal location according to your country and local government regulations.

NOTE

Be sure you verify that the subsystem storage configuration is the same as it was before you installed the cover and faceplate kit.

4

Controller PCMCIA Card Replacement

This chapter tells you how to replace the controller PCMCIA card after the cover and faceplate kit has been installed.

NOTE

Take the necessary steps to ensure that you preserve the original storageset configuration(s).

This procedure should be used only to replace a defective PCMCIA card with a new card that has the same version of firmware.

CAUTION

You need to wear an electrostatic discharge (ESD) wrist strap to prevent electrostatic damage.

4.1 Turning off the RAID Array 310 Subsystem

Do these steps to ensure that you preserve the storage configuration information.

1. Shut down the system to which the RAID Array 310 subsystem is attached, or terminate all jobs that are using the subsystem.
2. Connect a maintenance terminal to the controller maintenance port located on the rear of the subsystem cabinet.
3. Remove the controller from service by issuing the following CLI command:

```
HSZ20> SHUTDOWN THIS_CONTROLLER
```

4. The controller green LED lights continuously when the shutdown is complete; when the LED lights continuously turn off the subsystem power switch and disconnect the ac power cord.

4.2 Removing the PCMCIA Card

Do these steps to remove the card from the controller.

1. Remove the subsystem cabinet door (refer to Chapter 2, Section 2.2, for instructions).

2. Remove the left-side cover (refer to Chapter 2, Section 2.3, for instructions).
3. Remove the controller housing from the cabinet (refer to Chapter 2, Section 2.4, for instructions).
4. Remove the controller from the housing (refer to Chapter 2, Section 2.5, for instructions).
5. Remove the screw that holds the PCMCIA card cover insert to the left side of the controller cover (the insert is shown in Chapter 2, Figure 2-6); remove the insert.
6. Behind the insert you will see the PCMCIA card on the right and a pushbutton on the left. Push in the pushbutton to eject the PCMCIA card from its connector, and remove the card from the controller.

NOTE

When you insert the replacement PCMCIA card in the next step, make sure the black dot on the case faces down.

7. Insert the replacement PCMCIA card in the card guides and slide the card in until it snaps into the connector; the pushbutton pops out when the card is pushed into the connector.
8. Replace the card cover insert and secure it with the screw you removed.
9. Replace the controller in the controller housing by doing Section 2.5 in the reverse order.
10. Replace the controller housing by doing Section 2.4 in the reverse order.
11. Replace the left-side cover by doing Section 2.3 in the reverse order.
12. Replace the cabinet door by doing Section 2.2 in the reverse order.
13. Connect the ac power cord to the ac power source and turn on the ac power switch.

NOTE

Be sure you verify that the subsystem storage configuration is the same as it was before you installed the cover and faceplate kit.

Reader's Comments

Manual Order Number:
EK-SMCPL-IG. A01

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Manual Rating	Excellent	Good	Fair	Poor
Accuracy (correct presentation of facts)	[]	[]	[]	[]
Completeness (adequate information)	[]	[]	[]	[]
Clarity (easy to understand)	[]	[]	[]	[]
Organization (logical sequence of information)	[]	[]	[]	[]
Layout (easy to follow subject matter)	[]	[]	[]	[]
Indexing (easy to locate desired information)	[]	[]	[]	[]

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