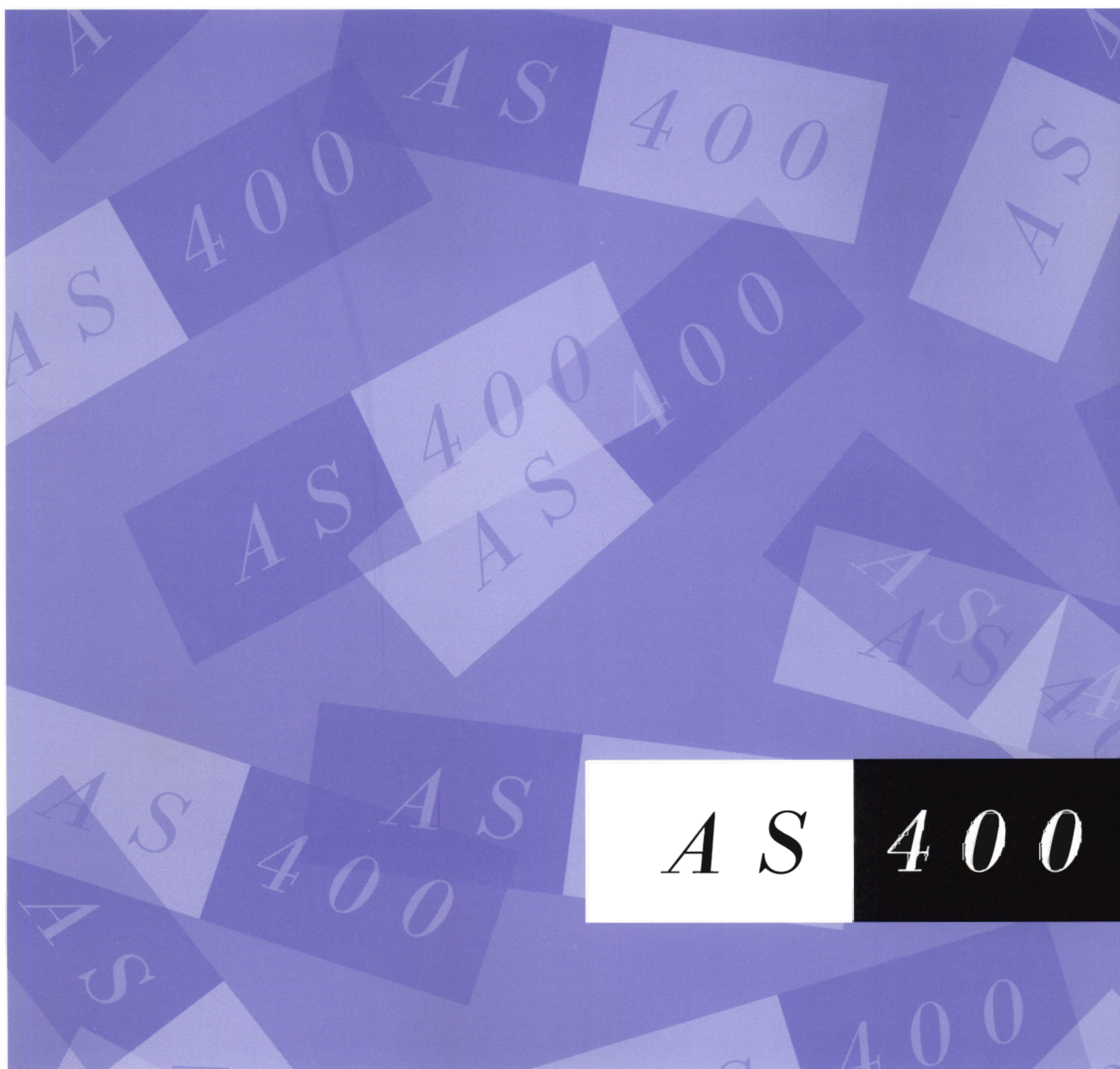# IBM

# AS/400
# 9402/9404 Models 2xx
# Repair and Parts

*Version 3*

AS 400

IBM

Application System/400

SY44-3942-00

**9402/9404 Models 2xx Repair and Parts**

Version 3

```
┌─── Take Note! ──────────────────────────────────────────────────────────────────┐
│                                                                                   │
│  Before using this information and the product it supports, be sure to read the general information under "Notices" on page v. │
│                                                                                   │
└───────────────────────────────────────────────────────────────────────────────────┘
```

# Contents

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Each safety notice contains a reference number (RSFTxxxx). To see if the safety notice is available in your language, refer to the reference number in the *Safety Information* book, SA41-3139.

## Danger Notices

A danger notice calls attention to a situation that is potentially lethal or extremely hazardous to people.

The following danger notices apply to all procedures in this book.

**DANGER**

> **An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.**
>
> *(RSFTD201)*

**v**

**DANGER**

To prevent a possible electrical shock when installing the system, ensure that the power cords for all devices are unplugged before installing signal cables. *(RSFTD202)*

**DANGER**

To prevent a possible electrical shock when adding or removing any devices to or from the system, ensure that the power cords for those devices are unplugged before the signal cables are connected or disconnected. If possible, disconnect all power cords from the existing system before you add or remove a device. *(RSFTD203)*

**DANGER**

To prevent a possible electrical shock during an electrical storm, do not connect or disconnect cables or station protectors for communications lines, display stations, printers, or telephones. *(RSFTD003)*

**DANGER**

To prevent a possible electrical shock from touching two surfaces with different electrical grounds, use one hand, when possible, to connect or disconnect signal cables. *(RSFTD004)*

**DANGER**

To prevent power from switching on automatically during service procedures, select manual mode on the system unit control panel. *(RSFTD212)*

## Caution Notices

A caution notice calls attention to a situation that is potentially hazardous to people because of some existing condition.

**CAUTION:**
The circuit card contains lead solder. Do not burn. Discard the circuit card as instructed by local regulations. *(RSFTC234)*

**CAUTION:**
This assembly has a circuit card that contains lead solder. Do not burn. Discard the assembly as instructed by local regulations. *(RSFTC235)*

## Warning Notices

A warning notice indicates the possibility of damage to a program, device, system, or data.

## Product Recycling

This unit contains recyclable materials. The unit should be recycled where facilities are available and according to local regulations. In some areas IBM will provide a product take-back program that ensures proper handling of the product. Contact your IBM representative for more information.

## Product Disposal

This unit may contain batteries that are accessible to certified service personnel only. Before disposing of the unit, these batteries must be removed and discarded or recycled according to local regulations. Contact your IBM Representative to remove these batteries.

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AS/400         OS/400

# Chapter 1. Removal and Installation Procedures

## Access Plate

**1** Power off the system. See Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1.

**2** Disconnect the power cord.

**3** Remove the covers. See "Covers" on page 1-10.

**4** Remove the screws **A** .

**5** Lift the access plate up and off of the frame.

**6** Replace the access plate by reversing the removal procedure.

**This ends the procedure.**

**System Unit**
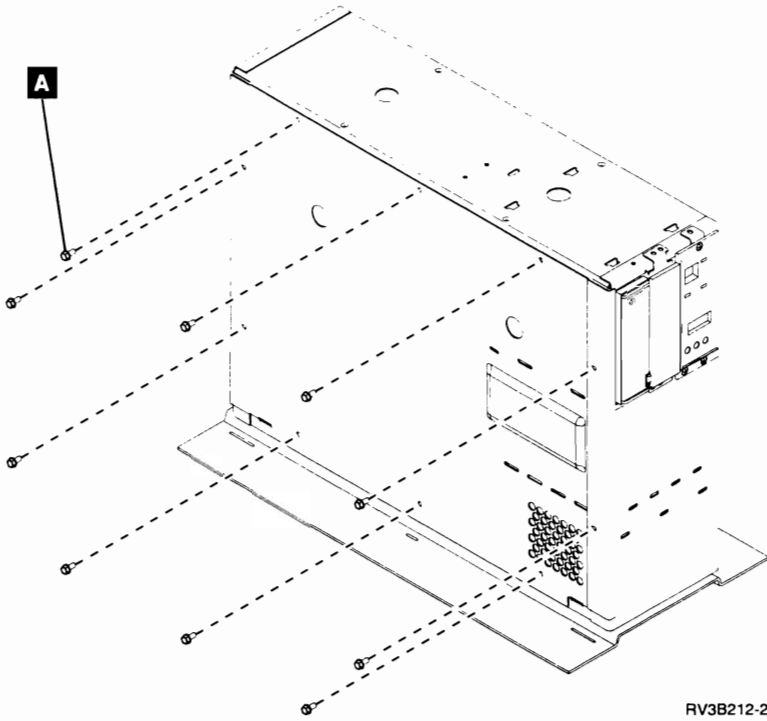


RV3B212-2

**Expansion Unit**
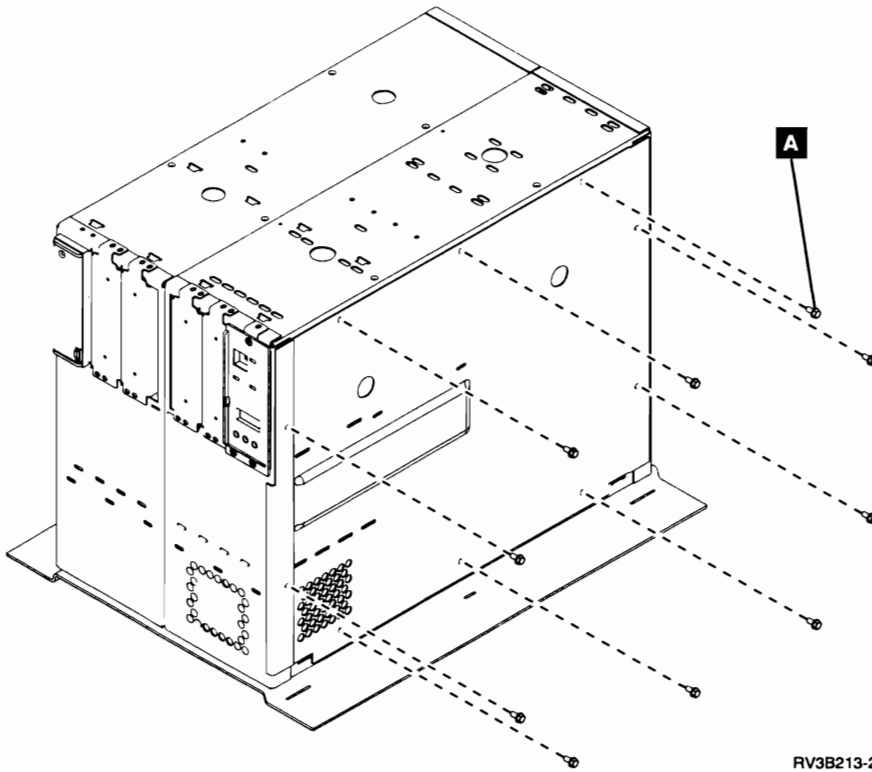


RV3B213-2

# Cards

**Warning:** All cards are sensitive to electrostatic discharge. See Appendix A, "Working with Electrostatic Discharge-Sensitive Parts" on page A-1.

**1** Power off the system. See Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1.

**2** Disconnect the power cord.

**3** Remove the rear cover. See "Covers" on page 1-10.

**4** Label and disconnect any cables attached to the card you are going to remove.

**5** If you are working with card type 2620, 2628, 6502, or 6503, read the following:

**CAUTION:**
**This card assembly contains a lithium battery. Do not burn, exchange, or charge the battery. Discard the card assembly as instructed by local regulations for lithium batteries.** *(RSFTC233)*

**6** If you are working with card type 2620 or 2628, read the following:

**Warning:** Disconnecting or removing the type 2620 or type 2628 cryptographic I/O processor *for any reason* causes the loss of the master encryption key.

Read "Cryptographic I/O Processor Warning" in the system *Problem Analysis* documentation before disconnecting or removing the cryptographic I/O processor.

**7** Remove a full-size card from the slot by doing the following:

   a. Press the two latch surfaces together to release each latch.

   b. Pull on both latches at the same time to remove the card from the slot.

**8** Remove an adapter card by doing the following:

   a. Press the two latch surfaces together to release the latch.

   b. Rotate the latch downward.

   c. Pull on the latch to remove the adapter card.

**9** Replace the card by reversing the removal procedure.

**This ends the procedure.**
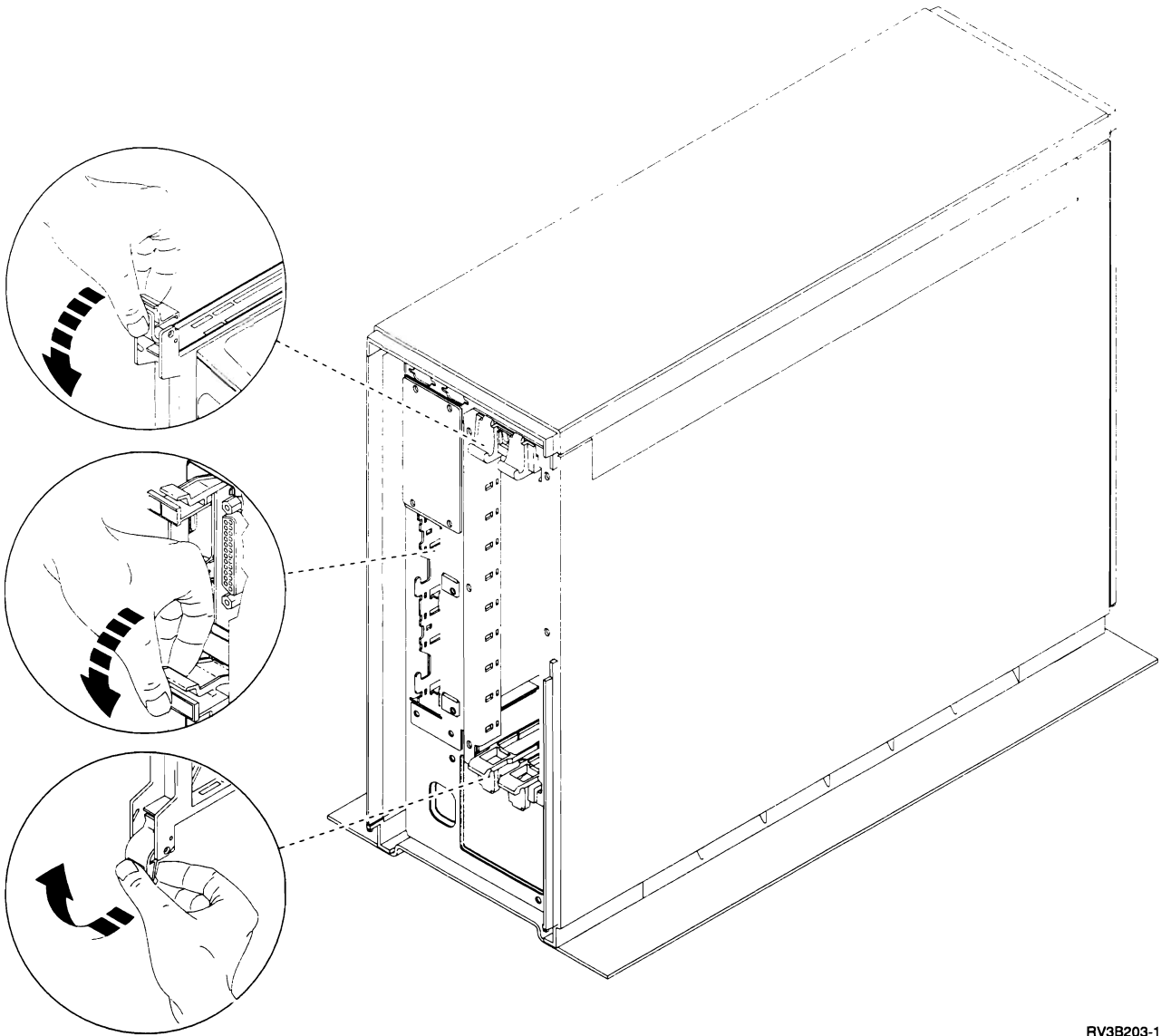
RV3B203-1

## Card Enclosure

**1** Power off the system. See Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1.

**2** Disconnect the power cord.

**3** Remove the covers. See "Covers" on page 1-10.

**4** Remove the access plate. See "Access Plate" on page 1-2.

**5** Label or write down each card and the slot where it is located.

**6** Remove all of the cards in the card enclosure. See "Cards" on page 1-4.

**7** Disconnect the cable or cables connected to the card enclosure. You may need to remove some disk units to access the cables. See "Disk Unit" on page 1-12 (start with step 2).

**8** Loosen the screws **A**. You may need to remove some disk units to access the screws. See "Disk Unit" on page 1-12 (start with step 2).

**9** Remove the screws **B**.

**10** Slide the card enclosure out of the rear of the frame.

**11** Remove the screws **C** to disassemble the card enclosure.

**12** Install the card enclosure by reversing the removal procedure.

Ensure that the cards are installed in the same slots where they were originally located.

**This ends the procedure.**

**System Unit**

RV3B204-3

**Expansion Unit**
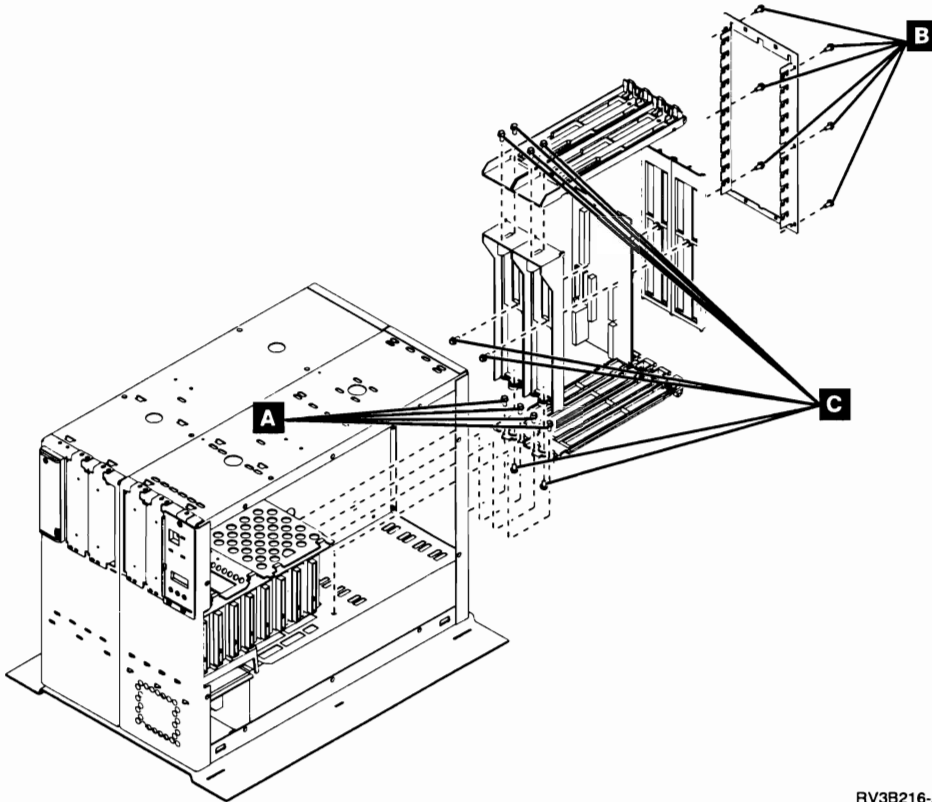
RV3B216-2

## Control Panel

**Warning:** The control panel is sensitive to electrostatic discharge. See Appendix A, "Working with Electrostatic Discharge-Sensitive Parts" on page A-1.

**1** Power off the system. See Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1.

**2** Disconnect the power cord.

**3** Remove the front and top covers. See "Covers" on page 1-10.

**4** Remove the screws **A**.

**5** Pull the control panel assembly from the frame.

**6** Disconnect the control panel cable from the control panel assembly.

**7** Remove the screw **B** to remove the bezel assembly **C** from the circuit card assembly **D**.

**8** Install the control panel assembly by reversing the removal procedure.

**This ends the procedure.**
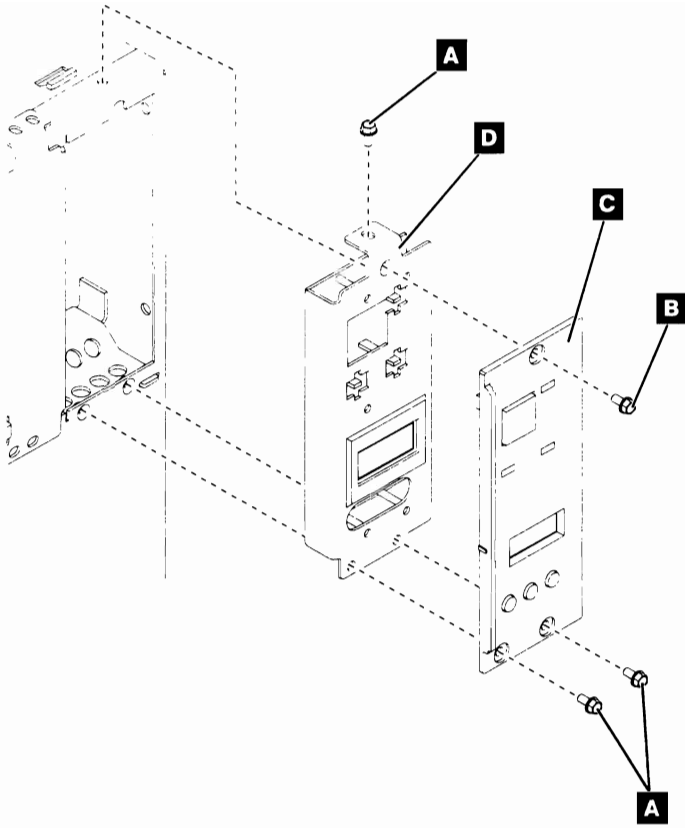
RV3B205-2

## Covers

**1** Remove the rear cover by doing the following:

   a. Hold the cover near the top.

   b. Pull until the cover comes off of the frame.

**2** Remove the front cover by doing the following:

   a. Hold the cover near the top.

   b. Pull until the cover comes off of the frame.

**3** Remove the top cover by lifting from the frame.

**4** Remove the side cover by doing the following:

   a. Remove the screws **A** .

   b. Lift the cover up and off of the frame.

**5** Install the covers by reversing the removal procedure.

**This ends the procedure.**

**System Unit**
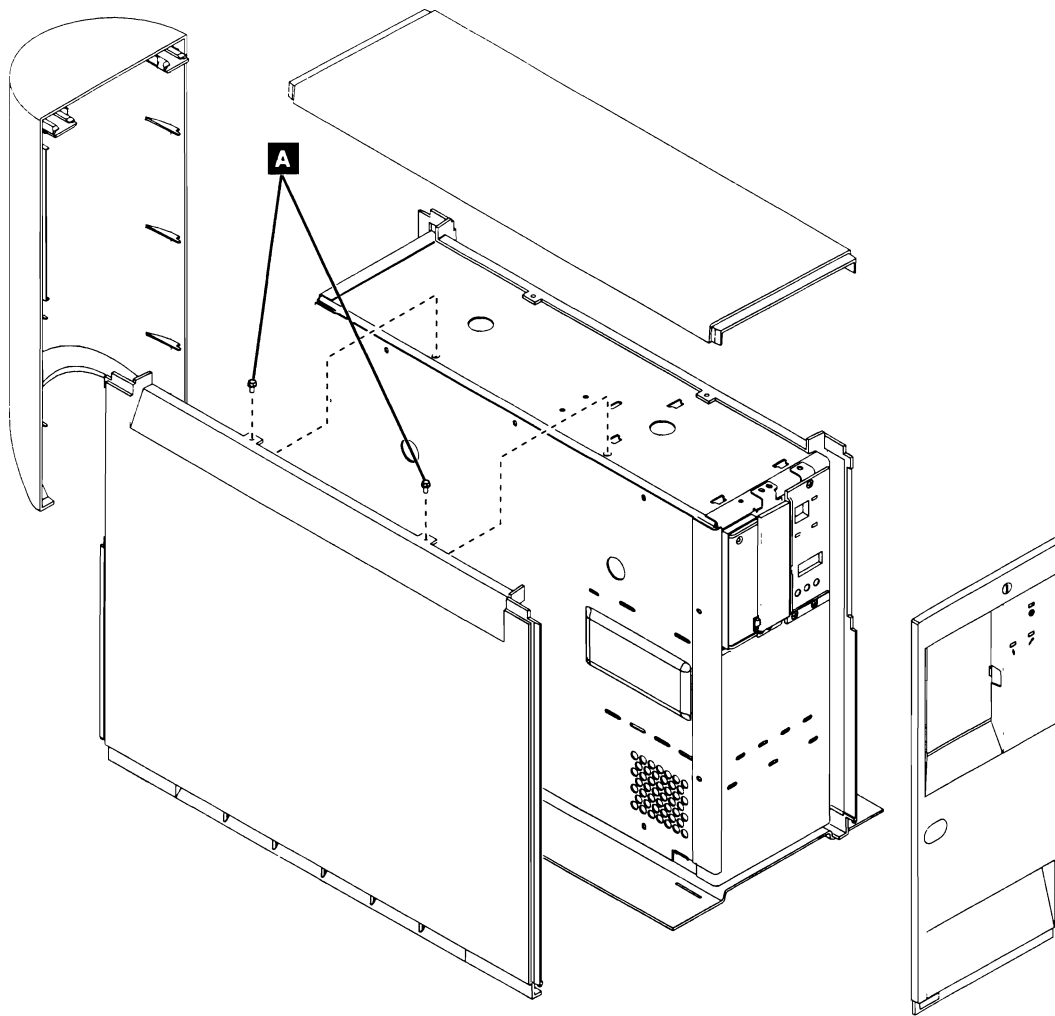
RV3B201-4

**Expansion Unit**
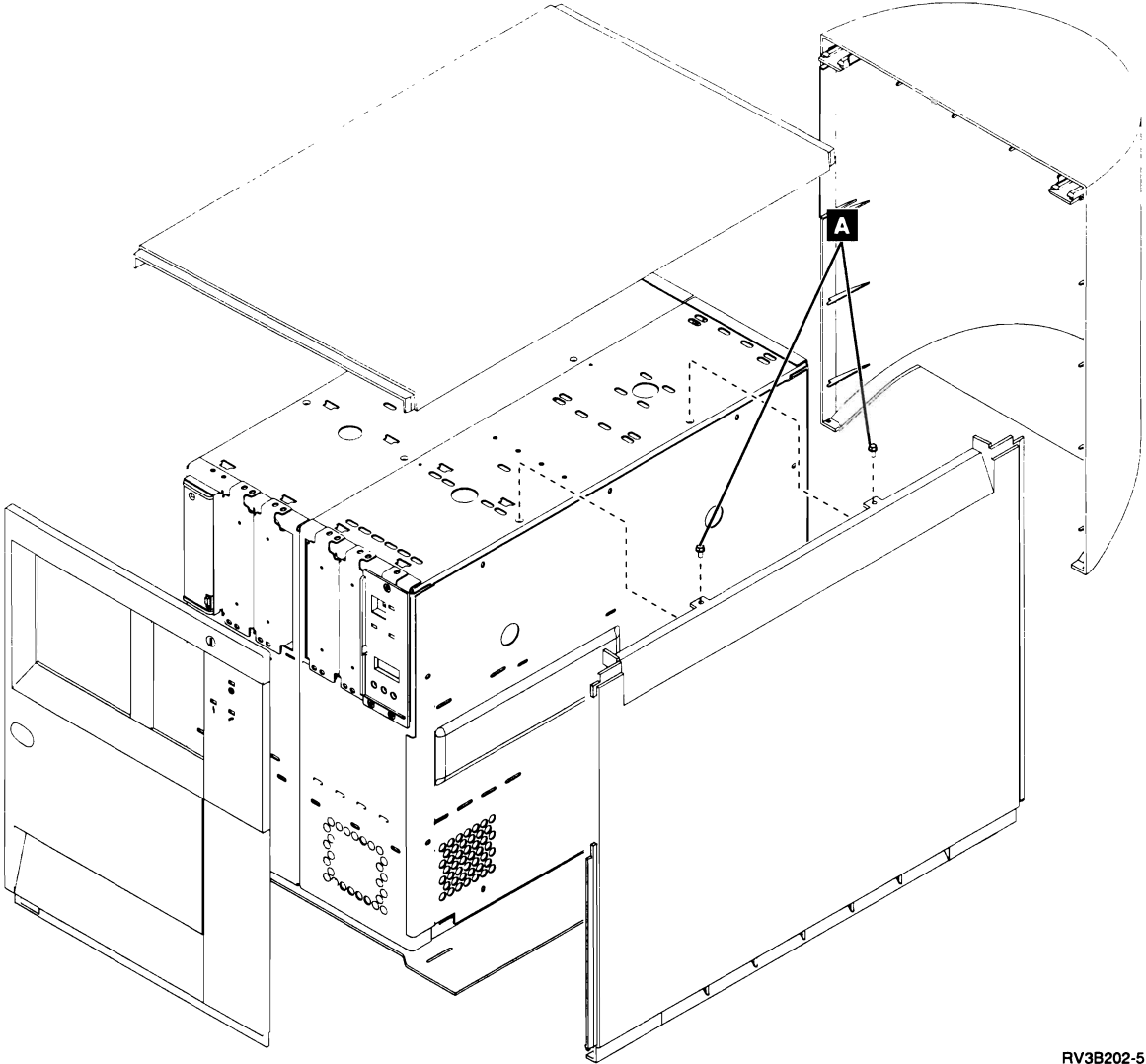
RV3B202-5

# Disk Unit

**Warning:** The disk unit is sensitive to electrostatic discharge. See Appendix A, "Working with Electrostatic Discharge-Sensitive Parts" on page A-1.

**1** Before exchanging a disk unit, you must attempt to save customer data. If you did not come to this procedure from Chapter 2, Recovery Procedures, then go to Start Disk Service Here in Chapter 2, "Recovery Procedures" on page 2-1.
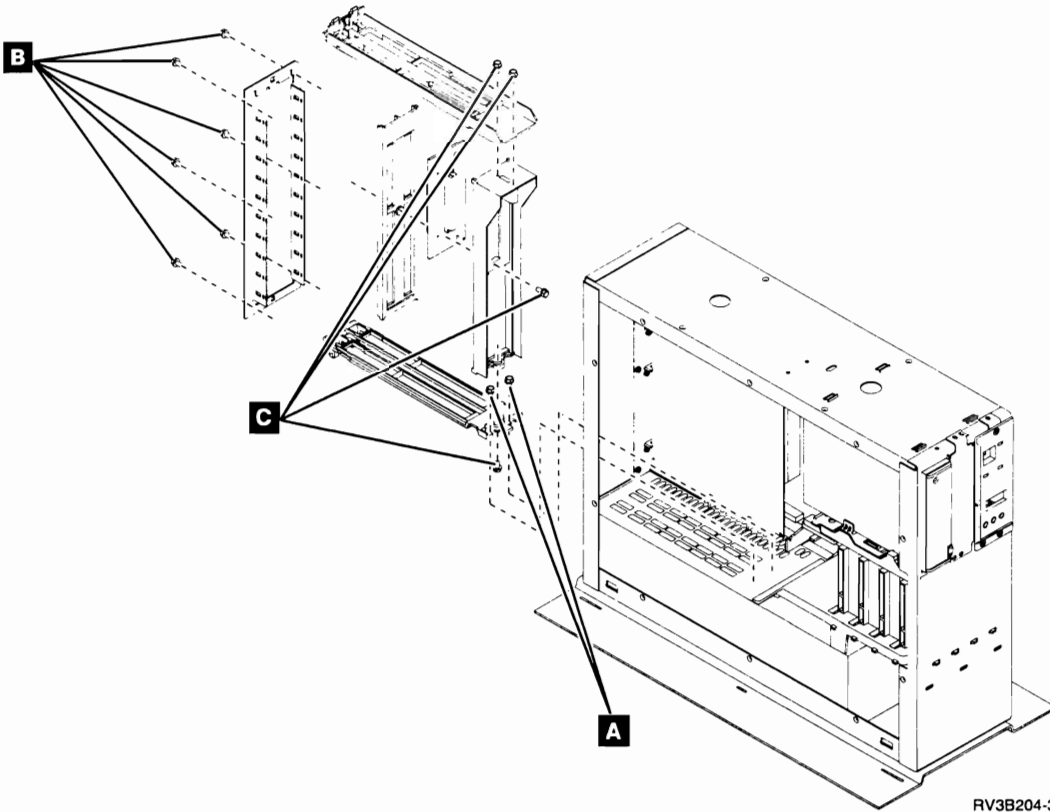
**2** Power off the system. See Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1.

**3** Disconnect the power cord.

**4** Remove the covers. See "Covers" on page 1-10.

**5** Remove the access plate. See "Access Plate" on page 1-2.

**6** Remove the disk unit cables from the disk units.

**7** Pull the disk unit from the frame.

**8 Warning:** Failure to replace the disk unit jumpers where they were originally located may cause data loss.

Write down the location of the jumpers on the disk unit that was just removed. See the *9402/9404 Models 2xx Problem Analysis* documentation for information about address jumper locations.

**9** To exchange the disk drive logic card, use the instructions included with the new disk drive logic card.

**10** Install the disk unit by reversing the removal procedure. Ensure that the address jumpers from the original disk unit are installed correctly on the new disk unit. See the *9402/9404 Models 2xx Problem Analysis* documentation for information about address jumper locations.

**This ends the procedure.**

**System Unit**
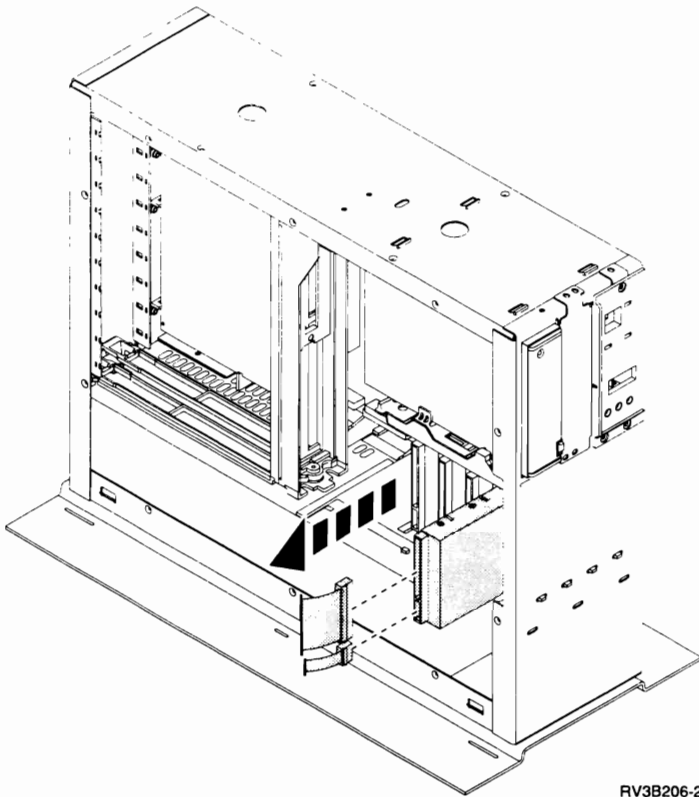


RV3B206-2

**Expansion Unit**
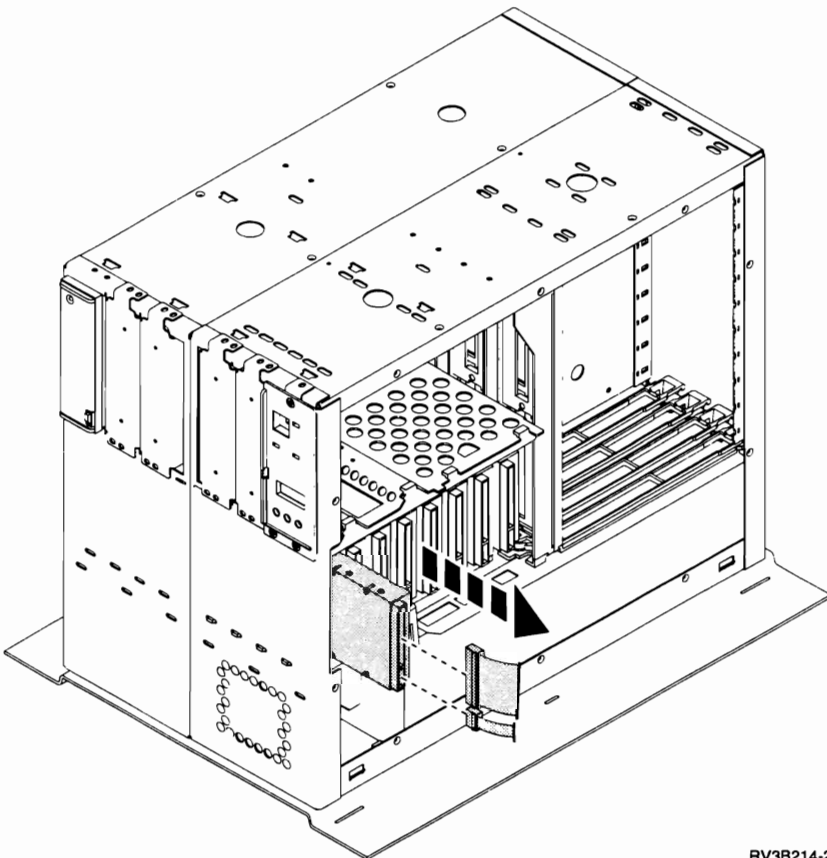


RV3B214-2

## Main Storage Card

**Warning:** The main storage cards are sensitive to electrostatic discharge. See Appendix A, "Working with Electrostatic Discharge-Sensitive Parts" on page A-1.

**1** Power off the system. See Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1.

**2** Disconnect the power cord.

**3** Remove the covers. See "Covers" on page 1-10.

**4** Remove the access plate. See "Access Plate" on page 1-2.

**5** If a card enclosure is installed, remove the cards. See "Cards" on page 1-4.

**6** Note the location of the notch **A** on the storage card. You will need to install the storage card in the socket with the notch in the same position.

Push outward on the latches located at each end of the storage card. You may need to remove the card enclosure. See "Card Enclosure" on page 1-6.

**7** Pull the card from the card socket.

**8** Install the main storage card by reversing the removal procedure.

**This ends the procedure.**
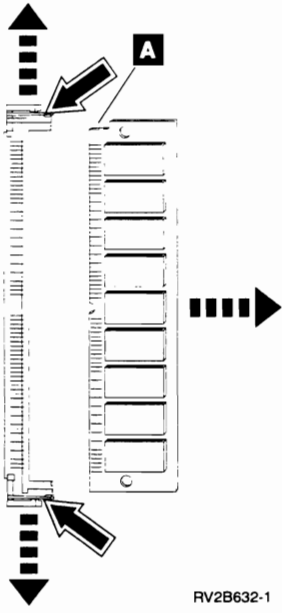
RV2B632-1

## Multiple Function Input/Output Processor

**Warning:** The multiple function input/output processor (MFIOP) is sensitive to electrostatic discharge. See Appendix A, "Working with Electrostatic Discharge-Sensitive Parts" on page A-1.

**1** Power off the system. See Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1.

**2** Disconnect the power cord.

**3** Remove the covers. See "Covers" on page 1-10.

**4** Remove the access plate. See "Access Plate" on page 1-2.

**5** If a card enclosure is installed, remove the card enclosure. See "Card Enclosure" on page 1-6.

**6** Remove the system processor. See "System Processor" on page 1-20.

**7** Remove the adapter cards attached to the MFIOP. See "Cards" on page 1-4.

**8** Remove the cables attached to the MFIOP.

If an expansion unit is attached to the system unit, then a cable is attached to the back of the MFIOP. This cable must be removed from the expansion unit side. Do the following to remove the cable:

    a. Remove the expansion unit side cover. See "Covers" on page 1-10.

    b. Remove the expansion unit access plate. See "Access Plate" on page 1-2.

    c. Remove the cable from the back of the MFIOP.

**9** If card retainer style **A** is installed, do the following:

    a. Remove the card retainer and screw **C** .

    b. Release the other card retainers as shown.

**10** If card retainer style **B** is installed, do the following:

    a. Remove the screws **D** .

    b. Remove the card retainer.

**11** Hold the edges of the card, slide to the right, and pull to remove the card.

**12** **Warning:** Do not touch the flat sides of the battery with your fingers.

Remove the battery from the MFIOP by doing the following:

    a. Insert the tip of a small screwdriver between the battery and the holder.

    b. Rotate the screwdriver to push the battery partially out of its holder.

    c. Push the battery from the holder with the screwdriver.

    **CAUTION:**
    **The battery is a lithium battery. Do not burn or charge the battery. Exchange only with the IBM-approved part. Discard the battery as instructed by local regulations.** (RSFTC227)

**13** Install the MFIOP by reversing the removal procedure.

**This ends the procedure.**

A

C

RV3B207-3

B

D
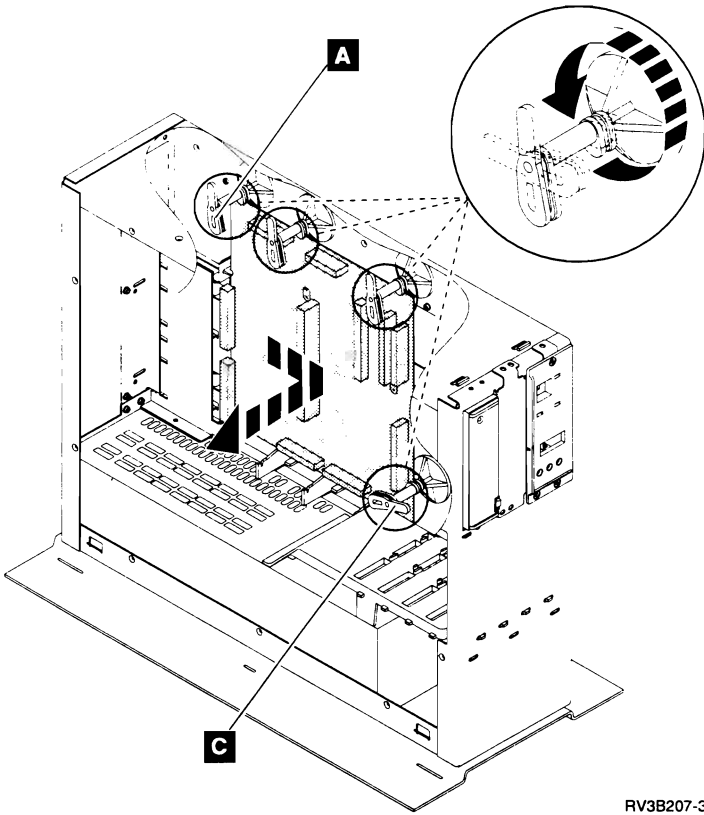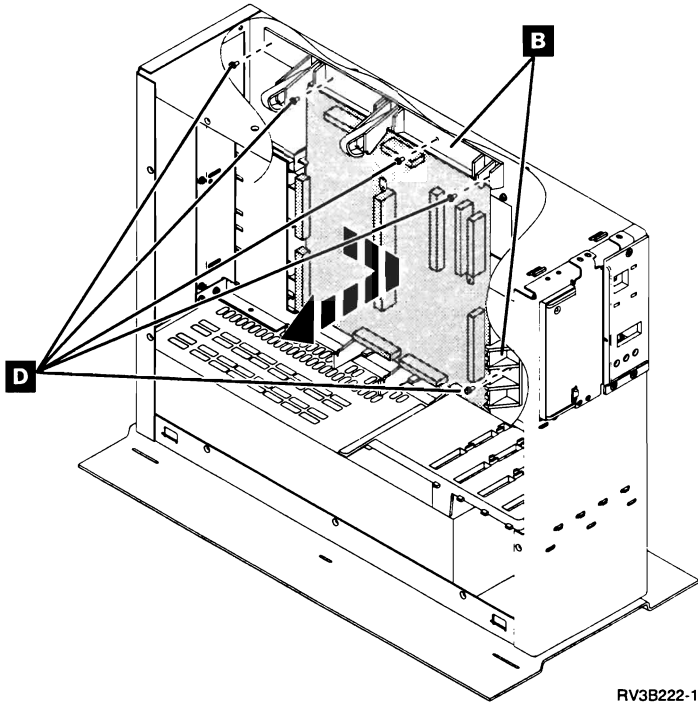
RV3B222-1

## Power Supply

**1** Power off the system. See Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1.

**2** Disconnect the power cord.

**3** Remove the covers. See "Covers" on page 1-10.

**4** Remove the access plate. See "Access Plate" on page 1-2.

**5** Label or write down each disk unit and the slot where it is located.

**6** Remove all of the disk units located above the power supply. See "Disk Unit" on page 1-12 (start with step 2).

**7** Remove the lower disk unit support ▨ .

**8** Remove the air shroud ▨ .

**9** If a card enclosure is installed, remove the card enclosure. See "Card Enclosure" on page 1-6.

**10** If you are removing a power supply from the system unit, do the following:

  a. Remove the system processor. See "System Processor" on page 1-20.

  b. Remove the MFIOP. See "Multiple Function Input/Output Processor" on page 1-16.

**11** Remove the power supply from the frame by doing the following:

  a. Remove any remaining cables from the power supply.

  b. If you are removing a power supply from the system unit, remove the lower card supports ▨ .

  c. Remove the screws ▨ .

  d. Push the power supply toward the front of the frame.

  e. Lift the power cord end of the power supply to remove the power supply.

**12** Install the power supply by reversing the removal procedure.

**This ends the procedure.**

**System Unit**
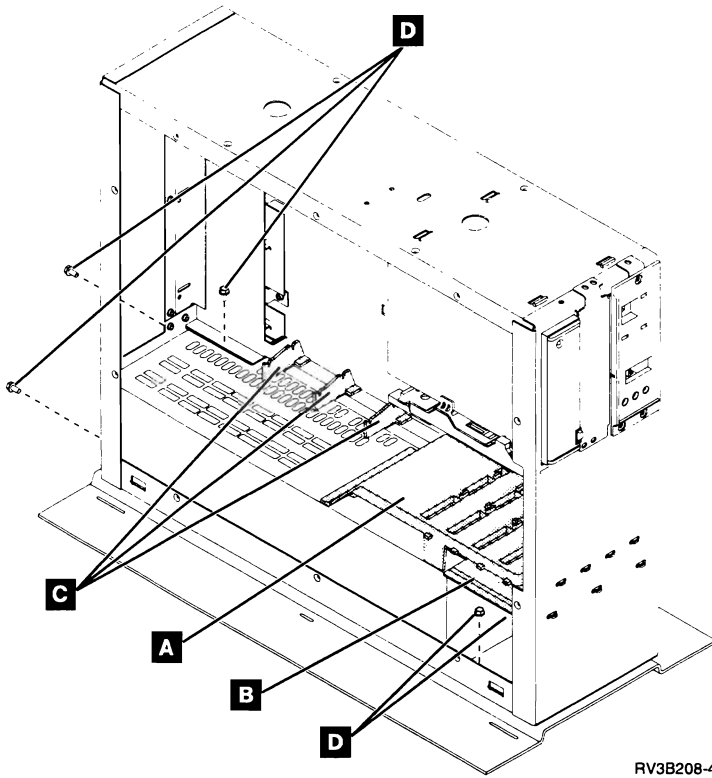


RV3B208-4

**Expansion Unit**
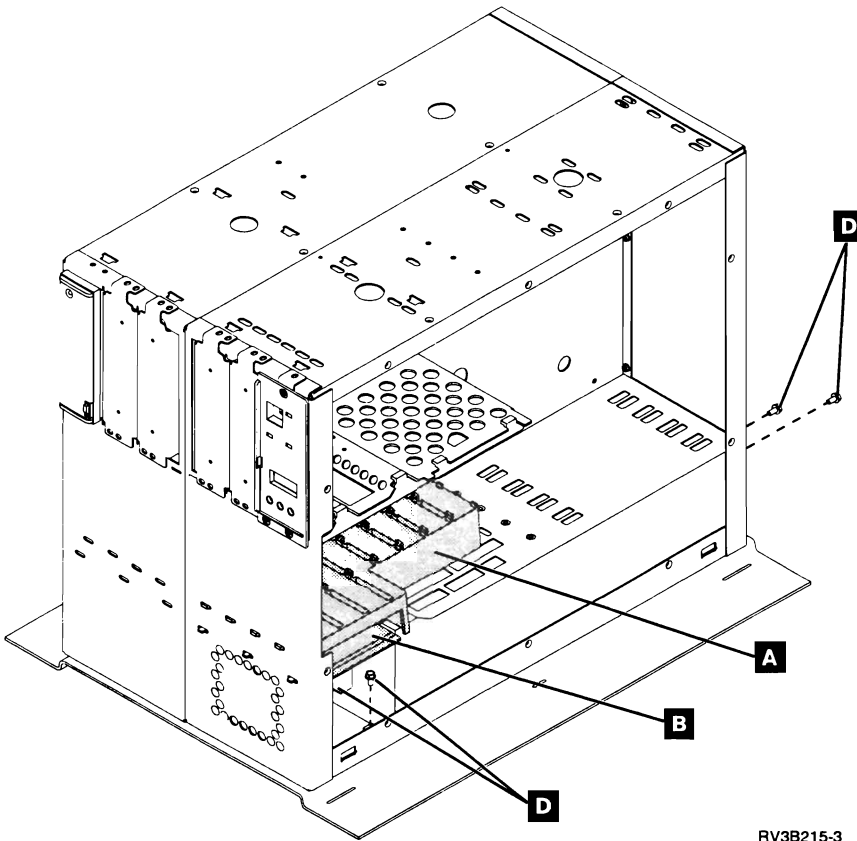


RV3B215-3

## System Processor

**Warning:** The system processor is sensitive to electrostatic discharge. See Appendix A, "Working with Electrostatic Discharge-Sensitive Parts" on page A-1.

**1** Power off the system. See Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1.

**2** Disconnect the power cord.

**3** Remove the covers. See "Covers" on page 1-10.

**4** Remove the access plate. See "Access Plate" on page 1-2.

**5** If a card enclosure is installed, remove the card enclosure. See "Card Enclosure" on page 1-6.

**6** If you are exchanging the system processor, you must remove the main storage cards. See "Main Storage Card" on page 1-14.

**7** Remove the screws and clips **C** .

**8** Release the card retainers **A** or **B** .

**9** Hold the edges of the card above and below the connector. Pull to remove the card.

**10** Install the system processor by reversing the removal procedure.

**This ends the procedure.**
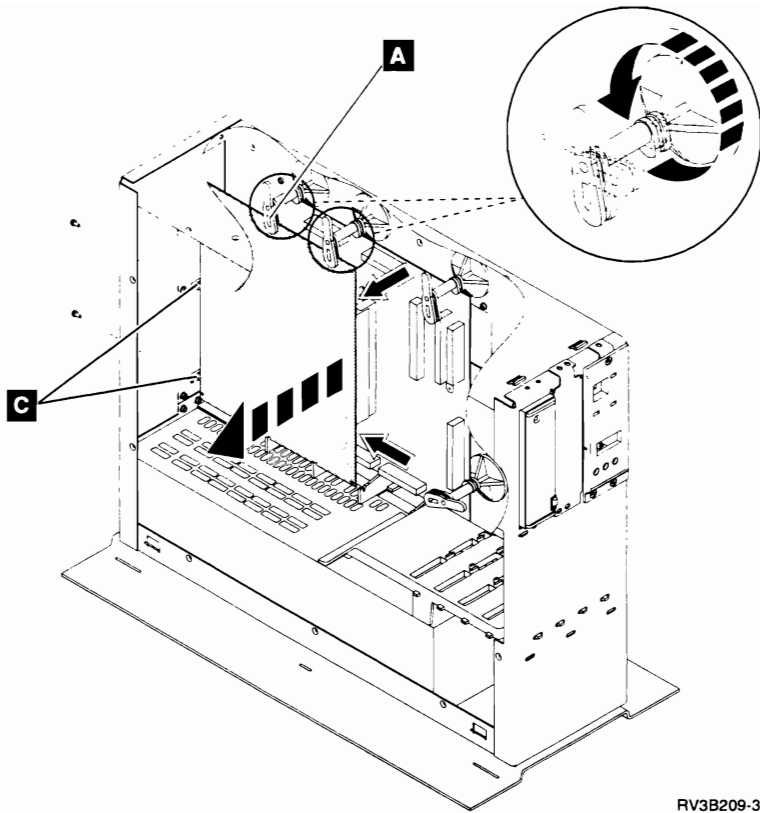
RV3B209-3
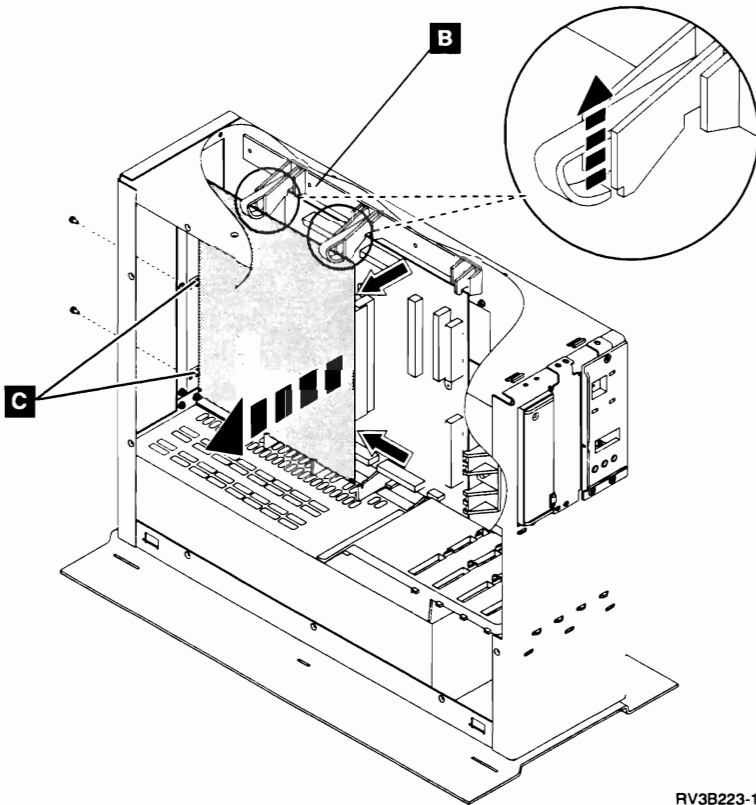
RV3B223-1

# Tape Unit

**1** Power off the system. See Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1.

**2** Disconnect the power cord.

**3** Remove the covers. See "Covers" on page 1-10.

**4** Remove the access plate. See "Access Plate" on page 1-2.

**5** Remove the tape unit cables.

**6** If you are removing a tape unit from the system unit, do the following:

    a. Remove the screw **A** .

    b. Pull the tape unit from the frame.

**7** If you are removing a tape unit from the expansion unit, do the following:

    a. Label or write down each disk unit and the slot where it is located.

    b. Remove all of the disk units in the expansion unit. See "Disk Unit" on page 1-12.

    c. Remove the upper disk unit holder **B** .

    d. Remove the screws **C** .

    e. Pull the tape unit from the frame.

**8** Install the tape unit by reversing the removal procedure. Ensure that the address jumpers from the original tape unit are installed correctly on the new tape unit. See the *9402/9404 Models 2xx Problem Analysis* documentation for information about address jumper locations.

Push the tape unit into the frame just far enough to align the screw holes.

**This ends the procedure.**

**System Unit**

A
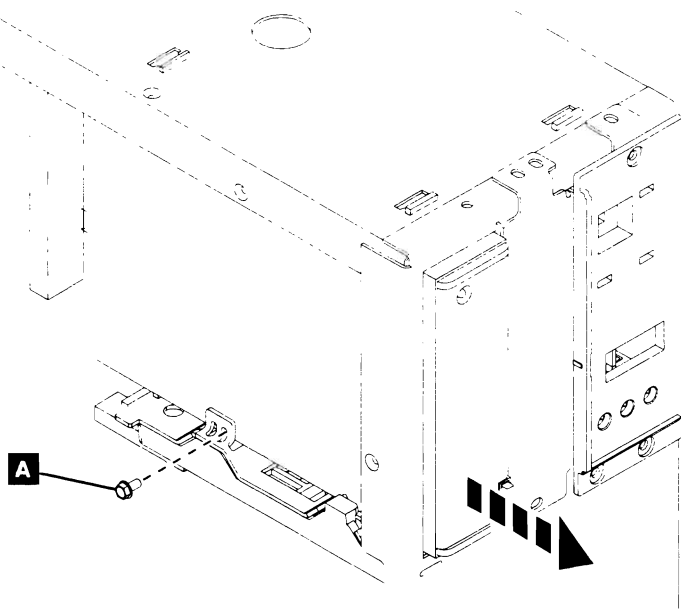
RV3B210-3

**Expansion Unit**
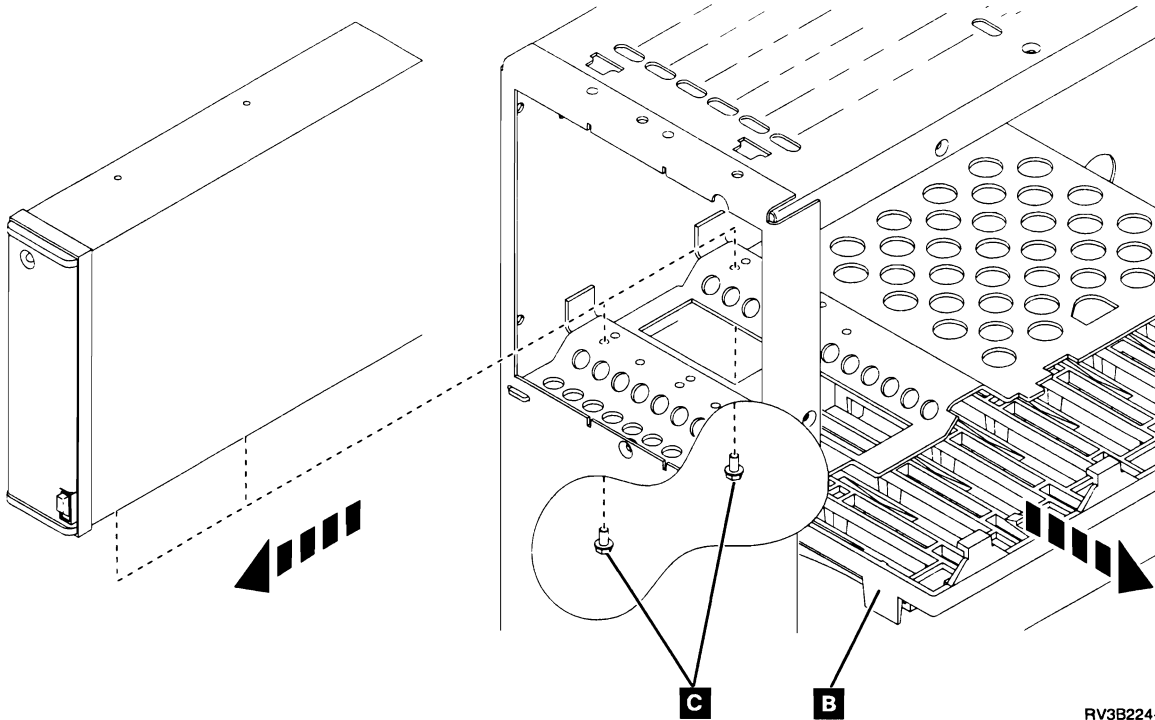
C    B    RV3B224-1

## Workstation Plate

**1** Power off the system. See Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1.

**2** Disconnect the power cord.

**3** Remove the covers. See "Covers" on page 1-10.

**4** Remove the access plate. See "Access Plate" on page 1-2.

**5** If you have a card enclosure installed, remove the cards. See "Cards" on page 1-4.

**6** Disconnect the workstation plate cable or cables from the MFIOP.

**7** Remove the workstation plate from the frame by removing the screws.

**8** Install the workstation plate by reversing the removal procedure.

**This ends the procedure.**
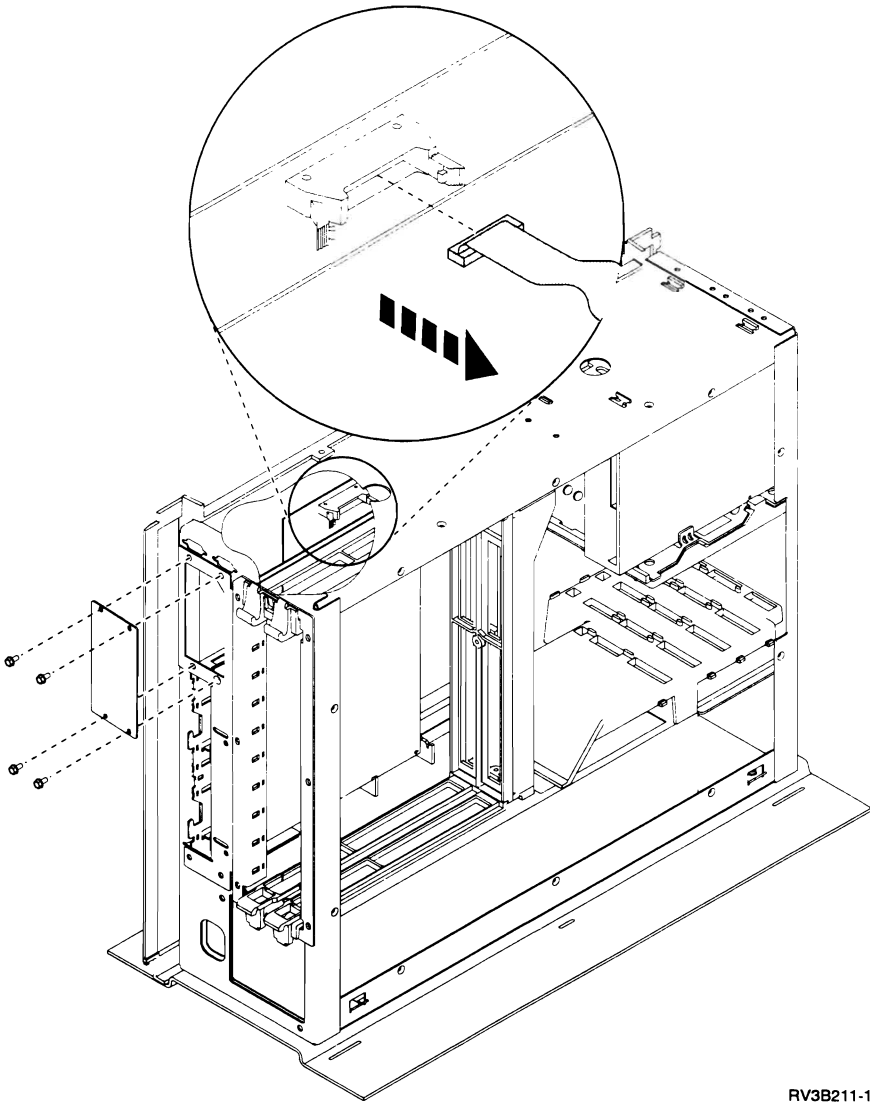
RV3B211-1

# Chapter 2.  Recovery Procedures

# Disk Service Support

## Start Disk Service Here

Before exchanging a disk unit, you must attempt to save customer data.

This procedure will direct you to the correct recovery procedure to use when attempting to save customer data.

**1** Do you know if your system has storage protection for the failing disk unit?

**Yes**  **No**

↓  Go to "Determining Storage Protection Status." Then return to step 2 of this procedure.

**2** Does your system have mirrored protection for the failing disk unit?

**No**  **Yes**

↓  Go to "Exchanging a Disk Unit with Mirrored Protection" on page 2-3.

**This ends the procedure.**

**3** Does your system have device parity protection for the failing disk unit?

**No**  **Yes**

↓  Go to "Exchanging a Disk Unit with Device Parity Protection" on page 2-3.

**This ends the procedure.**

**4** Are you exchanging the disk drive logic card?

**No**  **Yes**

↓  Exchange the failing FRU (see Disk Unit in Chapter 1, "Removal and Installation Procedures" on page 1-1).

**This ends the procedure.**

**5** You are exchanging the disk unit.

Go to "Disk Unit Data Save and Initialize — Pump Data to Tape" on page 2-5.

**This ends the procedure.**

## Determining Storage Protection Status

The customer should know if the system is configured for storage protection and should have kept a printout of the storage protection configuration in the binder for the *System Operation* information. If not, perform this procedure.

**1** Select the *Work with disk units* option on the System Service Tools (SST) display. If you cannot get to SST, select the *Work with disk units* option on the Dedicated Service Tools (DST) display.

**2** Select the *Display disk configuration* option on the Work with Disk Units display.

**3** Select the *Display disk configuration status* option on the Work with Disk Configuration display.

Each auxiliary storage pool (ASP) is listed, showing the disk units that are members of the ASP. The *Status* column shows one of the following protection statuses for the ASP:

Mirrored
Unprotected
Checksummed

Disk units in an ASP with a protection status of *Mirrored* are configured for mirrored protection.

**Note:** In a mirrored ASP, units with a status of *Suspended* are unprotected. (One of the sub-units is suspended, the other is unprotected.)

If the failing disk unit has mirrored protection, write down the status of the failing disk unit and it's mirrored pair. You will need this information later in one of the recovery procedures.

Disk units in an ASP with a protection status of *Unprotected* may be configured as data parity protected units. Look in the *Status* column of the *Display disk configuration status* display. Every unit in the ASP

will have a status of DPY/xxx, where the xxx can be one of the following:

Active
Degraded
Unprotected
Failed
Unknown

A disk unit that has a status of Active, Degraded, or Failed has data parity protection. Otherwise, the disk unit is **not** data parity protected.

Return to the procedure that sent you here.

**This ends the procedure.**

## Exchanging a Disk Unit with Device Parity Protection

**1** Display the disk unit status. Use either System Service Tools (SST) or Dedicated Service Tools (DST) to perform following: (See "System Service Tools (SST)" or "Dedicated Service Tools (DST)" in the *AS/400 Service Functions* information.)

a. Select the *Work with disk units* option.
b. Select the *Display disk configuration* option.
c. Select the *Display disk configuration status* option.

Does the failing disk unit have one of the following statuses?

DPY/Active
DPY/Degraded
DPY/Failed
DPY/Unknown

**Yes     No**

↓        The failing disk unit cannot be serviced without the possible loss of customer data. Ask your next level of support for assistance.

         **This ends the procedure.**

**2** Exchange the failing disk unit (see Disk Unit in Chapter 1, "Removal and Installation Procedures" on page 1-1). When you are done, return to step 3 of this procedure.

**3** Perform the following:

a. Perform an IPL to Dedicated Service Tools (DST) (see "Dedicated Service Tools (DST)" in the *AS/400 Service Functions* information for the system).
b. Select the *Work with disk units* option.
c. Select the *Work with disk unit recovery* option from the Work with Disk Units display.
d. Select the *Work with disk unit recovery* option.
e. Select the *Rebuild disk unit data* option.
f. Select the disk unit on the display that was installed in place of the failing disk unit.
g. Rebuild the disk unit data. When the new disk unit is rebuilt, the display shows that the status is complete (this may take 30 minutes or longer).
h. Press the Enter key after verifying that the status is complete.

**4** Perform the following:

a. Return to the Use Dedicated Service Tools (DST) display.
b. Select the *Perform an IPL* option to complete the IPL.

**5** Return to the procedure that sent you here.

**This ends the procedure.**

## Exchanging a Disk Unit with Mirrored Protection

**Note:** For help finding disk units on your system, see "Disk Unit Location" in the *Problem Analysis* information for the system.

**1** Display the disk unit status. Use either System Service Tools (SST) or Dedicated Service Tools (DST) to perform following: (See "System Service Tools (SST)" or "Dedicated Service Tools (DST)" in the *AS/400 Service Functions* information.)

a. Select the *Work with disk units* option.
b. Select the *Display disk configuration* option.

c. Select the *Display disk configuration status* option.

Does the disk unit that is mirrored to the failing unit have a status of "Active"?

**Yes    No**

↓        The disk unit does **not** have mirrored protection.

Go to "Disk Unit Data Save and Initialize — Pump Data to Tape" on page 2-5.

**This ends the procedure.**

**2** Exchange the failing disk unit (see Disk Unit in Chapter 1, "Removal and Installation Procedures" on page 1-1). Make a note of this page number because you will be returning to step 3 of this procedure.

**3** Perform an IPL to Dedicated Service Tools (DST) (see "Dedicated Service Tools (DST)" in the *AS/400 Service Functions* information for the system).

Did you exchange the disk unit?

**Yes    No**

↓        If you exchanged only the disk drive logic card, go to "Resuming Mirrored Protection."

**4** Format and initialize the disk unit by doing the following:

a. Select the *Work with disk units* option from the Use Dedicated Service Tools (DST) display.
b. Select the *Work with disk unit recovery* option from the Work with Disk Units display.
c. Select the *Disk unit problem recovery procedures* option from the Work with Disk Unit Recovery display.
d. On the display, select the disk unit you just installed. That unit is not configured.
e. Select the *Download Licensed Internal Code* option from the Disk Unit Problem Recovery Procedures display. Press the Enter key to begin the download and again when the download is complete.

f. Select the *Initialize and format disk unit* option from the Disk Unit Problem Recovery Procedures display.
g. Initialize and format the disk unit. When the new disk unit is initialized and formatted, the display shows that the status is complete (this may take 30 minutes or longer).
h. Press the Enter key after verifying that the status is complete.

**5** Perform the following:

a. Return to the Select Disk Unit Recovery Procedures display.
b. Return to the Work with Disk Unit Recovery display.
c. Select the *Replace configured unit* option from the Work with Disk Unit Recovery display.
d. Select the configured disk unit that is being exchanged from the Select Configured Unit to Replace display.
e. Select the replacement disk unit from the Select Replacement Unit display.

**6** Perform the following:

a. Return to the Use Dedicated Service Tools (DST) display.
b. Select the *Perform an IPL* option to complete the IPL. Data is copied to the new disk unit during the IPL.

**This ends the procedure.**

## Resuming Mirrored Protection

Use this procedure to resume mirrored protection on suspended disk units.

**1** Select the *Work with disk units* option on the System Service Tools (SST) display or on the Dedicated Service Tools (DST) display.

**2** Select the *Work with disk unit recovery* option on the Work with Disk Units display.

**3** Select the *Suspend/Resume mirrored protection* option on the Work with Disk Unit Recovery display.

**4** On the Suspend/Resume Mirrored Protection display, select the disk unit that you just replaced. It has a status of suspended. This is done by entering a *2* in the option column next to the disk unit you are selecting, then pressing the Enter key.

**5** Are you in System Service Tools (SST)?

**No      Yes**

↓        The disk unit that you selected will be made active while the system is operational.

**This ends the procedure.**

**6** Perform the following:

a. Return to the Dedicated Service Tools (DST) display.
b. Perform an IPL.

**Note:** The disk unit you selected is made active during the IPL.

**This ends the procedure.**

---

## Disk Unit Data Save and Initialize — Pump Data to Tape

**Note:** To complete this procedure, you may need the latest set of SAVSYS or SAVSTG tapes made before the problem occurred and three blank tapes.

**1** Are you exchanging a disk enclosure because a disk unit failure caused system operations to stop completely?

**Yes      No**

↓        You may use the Remove Units from Configuration function of DST to move all data from the disk unit you want to exchange to the other disk units in the same ASP.

Go to step 18 of this procedure.

**2** Perform an IPL to Dedicated Service Tools (DST) (see "Dedicated Service Tools (DST)" in the *AS/400 Service Functions* information for the system).

Does the Use Dedicated Service Tools (DST) display appear?

**Yes      No**

↓        Repeat this step of this procedure.

If the same system reference code (SRC) occurs again, the customer's data is not recoverable. Go to step 5 of this procedure.

If a different SRC occurs, use it to correct the problem (see "Starting Problem Analysis" in the *Problem Analysis* information for the system).

**This ends the procedure.**

**3** From the Use Dedicated Service Tools (DST) display, perform the following to save the customer data from the failing disk unit:

a. Select the *Work with disk units* option.
b. Select the *Work with disk unit recovery* option from the Work with Disk Units display.
c. Select the *Save disk unit data* option from the Work with Disk Unit Recovery display.
d. Select the disk unit that you want the data saved from on the Select Disk Unit Data to Save display.

If the disk unit is missing, you cannot save the customer data to tape at this time. Go to step 5 of this procedure.

e. Install a tape in the tape unit.
f. The Specify Volume Identifier prompt appears. Enter the volume identifier for the tape. Write down the tape volume identifier here_____. You will use the tape volume identifier later in this procedure.
g. The Select Tape or Diskette Unit prompt appears.

Select the tape unit that you loaded with a tape.

**Note:** If the tape volume identifier that you entered does not match the tape volume identifier written on the tape, the Device Intervention Required prompt appears. The message "Wrong volume loaded" appears at the bottom of the display. The tape volume identi-

fier written on the tape is shown in the "Volume or file loaded" field. Press the Enter key. The Handle Tape or Diskette Intervention prompt appears. Select the *Format* option and press the Enter key to continue the save operation.

h. If the Check for Device Intervention Required display appears, press the Enter key to continue.

i. If the Handle Tape or Diskette Intervention display appears, select the *Format the tape* option.

The Save Disk Unit Data display appears. This display shows the percent of disk data saved.

j. After the tape is full, the Handle Tape or Diskette Intervention display appears.

  1) Insert the next tape into the tape unit.

  2) Enter the option to continue saving data to the tape you just inserted.

k. Continue saving the customer's data to tapes until the Save Disk Unit Data display shows that the status of the save is complete.

If the save operation does not complete or if there are large numbers of unreadable sectors on the disk unit being saved, the customer's data is not recoverable.

Continue with step 4 of this procedure.

**4** Does the display show that the status of the save is complete?

**No    Yes**

↓

  a. Power off the system (see Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1).

  b. Exchange the failing disk unit (see Disk Unit in Chapter 1, "Removal and Installation Procedures" on page 1-1).

  c. Go to step 7 of this procedure.

**5** Have you already exchanged the disk drive logic card?

**Yes    No**

↓

  a. Power off the system (see Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1).

  b. Remove the failing disk unit (see Disk Unit in Chapter 1, "Removal and Installation Procedures" on page 1-1).

  c. Exchange the failing disk drive logic card (see the instructions that come with the card).

  **Note:** This is done so you can attempt to save the customer data again.

  d. Go to step 2 of this procedure.

**6** Perform the following:

  a. Power off the system (see Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1).

  b. Exchange the failing disk unit (see Disk Unit in Chapter 1, "Removal and Installation Procedures" on page 1-1).

**7** Did you exchanged disk unit 1 in the system unit?

**No    Yes**                .

↓      Go to step 11 of this procedure.

**8** Format and initialize the new disk unit by doing the following:

  a.  Perform an IPL to Dedicated Service Tools (DST) (see "Dedicated Service Tools (DST)" in the *AS/400 Service Functions* information for the system).

  **Note:** The Missing Disk Units display appears on the console. This indicates that a configured disk unit was removed.

  b. Select the *Work with disk units* option from the Use Dedicated Service Tools (DST) display.

  c. Select the *Work with disk unit recovery* option from the Work with Disk Unit display.

d. Select the *Disk unit problem recovery procedures* option from the Work with Disk Unit Recovery display.

e. Select the disk unit on the display that is not configured.

f. Select the *Download Licensed Internal Code* option from the Disk Unit Problem Recovery Procedures display. Press the Enter key to begin the download and again when the download is complete.

g. Select the *Initialize and format disk unit* option from the Disk Unit Problem Recovery Procedures display. When the new disk unit is initialized and formatted, the display shows that the status is complete (this may take 30 minutes or longer).

h. Press the Enter key.

**9** Is most of the customer data recoverable (see step 3 of this procedure)?

**Yes   No**

↓       Go to step 15 of this procedure.

**10** Restore the customer data from the tape to the new disk unit by doing the following:

a. Press F12 (Cancel) from the Disk Unit Problem Recovery Procedures display.

b. Select the *Restore disk unit data* option from the Work with Disk Unit Recovery display.

c. Enter the tape volume identifier. This is the volume identifier that you entered during the save procedure.

d. Install the first tape that the data was saved to in the tape unit.

e. Select the tape unit that you want the data restored from on the Select Tape or Diskette Unit display.

f. Select the disk unit that you want the data restored to on the Restore Disk Unit Data display.

The Restore Disk Unit Data display shows the percent of customer data restored.

After all customer data is restored from the tape to the disk, the display shows that the status of the restore operation is complete.

g. Press the Enter key to complete the restore operation.

h. Power off the system (see Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1).

**Note:** Any damaged objects that were restored during the restoring of the customer data must be loaded again by the customer. Have the customer see the *Backup and Recovery – Basic* information.

The system is ready for the next IPL.

**This ends the procedure.**

**11** Perform an IPL from the tape unit and install the Licensed Internal Code (see "Licensed Internal Code Install and Restore Overview" in the *Service Functions* information for the system, which does an IPL from the tape unit, installs the Licensed Internal Code, and formats and initializes disk unit 1 in the system unit). Then return to step 12 of this procedure.

**12** Recover the configuration to disk unit 1 in the system unit by doing the following:

a. Select the *Work with DST* option from the Install the Operating System display.

b. Enter the password 22222222.

**Note:** If this password is not valid, ask the customer for the correct password.

c. Select the *Work with disk units* option from the Use Dedicated Service Tools (DST) display.

d. Select the *Work with disk unit recovery* option from the Work with Disk Unit display.

e. Select the *Recover configuration* option from the Work with Disk Unit Recovery display. This option assembles the system configuration information on disk unit 1 in the system unit.

**Notes:**

1) A warning message appears stating that recovering the configuration destroys all system data unless the load-source data is restored before continuing past the DST main display. You will return to the DST

main display following an IPL. This data will be restored later in this procedure if the customer data was recoverable (see step 3 of this procedure).

2) If you have a system with only one disk unit, a message may appear stating that your request to recover the configuration was not successful. The recover configuration function cannot be performed on a system with only one disk unit. Continue with the next step of this procedure.

**13** Is the customer data recoverable (see step 3 of this procedure)?

**Yes    No**

↓      The system ASP was cleared because customer data was not recoverable.

Go to step 17 of this procedure.

**14** Restore the customer data from the tape to the new disk unit by doing the following:

a. Select the *Work with DST* option from the Install the Operating System display.
b. Enter the password 22222222.

   **Note:** If this password is not valid, ask the customer for the correct password.

c. Select the *Work with disk units* option from the Use Dedicated Service Tools (DST) display.
d. Select the *Work with disk unit recovery* option from the Work with Disk Unit display.
e. Select the *Restore disk unit data* option from the Work with Disk Unit Recovery display.
f. Enter the tape volume identifier. This is the volume identifier that you entered during the save procedure.
g. Select the tape unit that you want the data restored from on the Select Tape or Diskette Unit display.
h. Install the first tape that the data was saved to in the tape unit.

i. Select the disk unit that you want the data restored to on the Restore Disk Unit Data display.

   The Restore Disk Unit Data display shows the percent of customer data restored.

   **Note:** If the disk that was restored was the load-source disk, the system automatically performs an IPL to the DST main menu when the restore operation is complete.

   After all customer data is restored from the tape to the disk, the display shows that the status of the restore operation is complete.

j. Press the Enter key to complete the restore operation.
k. Power off the system (see Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1).

   **Note:** Any damaged objects that were restored during the restoring of the customer data must be loaded again by the customer. Have the customer see the *Backup and Recovery – Basic* information.

   The system is ready for the next IPL.

**This ends the procedure.**

**15** Because the disk data was not recoverable, clear the auxiliary storage pool to which the disk unit is assigned by doing the following:

a. Return to the Work with Disk Unit Recovery display.
b. Select the *Replace disk unit* option from the Work with Disk Unit Recovery display.
c. Select the configured disk unit that is being exchanged from the Replace Configured Unit display.
d. Select the replacement disk unit from the Select Replacement Unit display (this takes approximately 10 to 15 minutes).

**Warning:** The auxiliary storage pool to which the disk unit is assigned will be erased unless the auxiliary storage pool is checksum protected. If the auxiliary storage pool is not checksum protected, the customer must restore the data to the auxiliary storage pool. Have the customer see the *Backup and Recovery – Basic* information.

**16** If any disk units that you exchanged are in ASP 1 and ASP 1 does not have checksum protection, restore the Licensed Internal Code using Function 23 (see "Restoring Licensed Internal Code" in the *Service Functions* information). This is done to rebuild the Licensed Internal Code PTF index.

**17** The ASPs to which the disk units were assigned may be cleared. The customer should do the following:

- If the system ASP has checksum protection, have the customer see "Replacing a Failed Disk Unit in the System ASP" under "Checksum Recovery Actions" in the "Working with Checksum Protection" chapter of the *Backup and Recovery – Advanced* information. The data in the system ASP is assembled again during the next IPL to the OS/400* program.

- If the system ASP does not have checksum protection, have the customer see "Recovering from Disk Unit Media Failures" in the "Working with Disk Recovery" chapter of the *Backup and Recovery – Basic* information. The operating system (OS/400 Licensed Program) and all customer data must be restored.

- If the disk unit is in a user ASP (ASP 2 through ASP 16) and the user ASP has checksum protection, the data in the user ASP is assembled again during the next IPL to the OS/400 program.

- If the disk unit is in a user ASP (ASP 2 through ASP 16) and the user ASP does not have checksum protection, some data in the ASP may be lost. See "Recovering from a Disk Media

Failure in a User ASP" under "Recovering from Disk Unit Media Failures" in the "Working with Disk Recovery" chapter of the *Backup and Recovery – Basic* information.

**This ends the procedure.**

**18** The remaining steps of this procedure require a dedicated system.

Have the customer do a normal power-off procedure of the system.

**19** Perform an IPL to Dedicated Service Tools (DST) (see "Dedicated Service Tools (DST)" in the *AS/400 Service Functions* information for the system).

Is either the IPL or Install the System display shown or is DST available?

**Yes    No**

↓      Go to step 2 of this procedure.

**20** Select the *Use dedicated service tools (DST)* option from the display or by using a function key. You need the customer password to get to the Use Dedicated Service Tools (DST) display.

**21** Perform the following:

a. On the Use Dedicated Service Tools (DST) display, select the *Work with disk units* option.
b. Select the *Work with disk configuration* option.
c. Select the *Display disk configuration* option.
d. Select the *Display disk configuration status* option.
e. Record the ASP, unit, serial number, type, and address of the disk unit.
f. On the Display Disk Configuration Status display, ensure that:
- The disk unit is not the load-source disk unit (disk unit 1).
- No disk units are missing from the configuration.

  **Note:** A missing unit is indicated by an asterisk (*) next to the unit number.

- The status field of the disk unit to be removed shows *Configured*.

Are all these conditions true?

**Yes**    **No**

↓     You cannot use the Remove Units from Configuration function.

Go to step 2 of this procedure.

**22** Perform the following:

a. Return to the Display Disk Configuration display.
b. Select the *Display disk configuration capacity* option.

Does the *% Used* field for the disk unit to be removed show an asterisk (*)?

**No**    **Yes**

↓     You cannot use the Remove Units from Configuration function.

Go to step 2 of this procedure.

**23** Return to the Work with Disk Units display.

**24** Perform the following:

a. On the Work with Disk Units display, select the *Work with disk unit recovery* option.
b. Select the *Disk unit problem recovery procedures* option.
c. Select the disk unit to analyze.
d. Select the *Analyze disk unit surface* option.
e. Press the Enter key to analyze the disk unit surface.
f. Wait until the Analyze function is complete.

**Note:** This takes several minutes.

Is the number of sectors with errors zero?

**Yes**    **No**

↓     You cannot use the Remove Units from Configuration function.

Go to step 2 of this procedure.

**25** Return to the Work with Disk Units display.

**26** Perform the following:

a. On the Work with Disk Units display, select the *Work with disk configuration* option.
b. Select the *Work with ASP configuration* option.
c. Select the *Remove units from configuration* option.
d. Select the disk unit to be removed.

**Note:** If the disk unit is not displayed, go to step 2 of this procedure.
e. If the Confirm Continuation display appears, press the Enter key to continue. Wait for the next display.
f. If there is enough storage in the ASP, the Confirm Remove Disk Units display appears. If there is not enough storage, an error message display appears.

Does any error message display appear?

**No**    **Yes**

↓     Go to step 2 of this procedure.

**27** Press the Enter key to verify the Remove Disk Units function.

The Remove Disk Units function takes several minutes. When it is complete, a message appears stating whether it was successful.

Was the Remove Disk Units function successful?

**Yes**    **No**

↓     Go to step 2 of this procedure.

**28** On the Work with ASP Configuration display, select the *Display disk configuration capacity* option.

**29** Press F11 twice to display non-configured units.

Is the unit you removed shown as a non-configured unit?

**Yes**    **No**

↓     Go to step 2 of this procedure.

**30** Do you want to exchange the disk unit now?

**Note:** You can exchange the disk unit at a later time because the disk unit is removed from the configuration.

**Yes   No**

↓   **This ends the procedure.**

**31** Power off the system (see Powering Off the System in Chapter 3, "Service Referenced Procedures" on page 3-1).

Exchange the failing disk unit (see Disk Unit in Chapter 1, "Removal and Installation Procedures" on page 1-1).

**32** Format and initialize the new disk unit by doing the following:

   a.  Perform an IPL to Dedicated Service Tools (DST) (see "Dedicated Service Tools (DST)" in the *AS/400 Service Functions* information for the system).
   b. Go to dedicated service tools (DST).
   c. Select the *Work with disk units* option from the Use Dedicated Service Tools (DST) display.
   d. Select the *Work with disk unit recovery* option from the Work with Disk Unit display.
   e. Select the *Disk unit problem recovery procedures* option from the Work with Disk Unit Recovery display.
   f. Select the disk unit on the display that is not configured.
   g. Select the *Download Licensed Internal Code* option from the Disk Unit Problem Recovery Procedures display. Press the Enter key to begin the download and again when the download is complete.
   h. Select the *Initialize and format disk unit* option from the Disk Unit Problem Recovery Procedures display. When the new disk unit is initialized and formatted, the display shows that the status is complete (this may take 30 minutes or longer).
   i. Press F10.

**33** In this step, you use the ASP, unit, serial number, type, and address information you recorded in step 21 of this procedure.

Perform the following:

   a. Return to the Work with Disk Units display.
   b. On the Work with Disk Units display, select the *Work with disk configuration* option.
   c. Select the *Work with ASP configuration* option.
   d. Select the *Add units to existing ASP* option.
   e. Select the ASP that the disk units were removed from.
   f. Select the unit to add to the ASP.
   g. When the Confirm Add Units display appears, press the Enter key to continue. Wait for the next display.

**34** The Add Disk Units·function takes several minutes. When it is complete, a message appears stating whether it was successful.

Was the Add Disk Units function successful?

**No   Yes**

↓   On the Work with ASP Configuration display, select the *Display disk configuration capacity* option. The unit you added should be shown in the correct ASP.

   **This ends the procedure.**

**35** Do you have more FRUs to exchange?

**No   Yes**

↓   Go to step 31 of this procedure.

   **This ends the procedure.**

**36** Ask your next level of support for assistance.

**This ends the procedure.**

## SST/DST Procedures

### Restoring Data to the Disk Unit

**1** Perform an IPL to Dedicated Service Tools (DST) (see "Dedicated Service Tools (DST)" in the *AS/400 Service Functions* information for the system).

**2** Select the *Work with disk units* option.

**3** Select the *Work with disk unit recovery* option.

**4** Select the *Restore disk unit data* option.

**This ends the procedure.**

## Copy the Contents of VLIC Log

**1 Warning:** Perform an IPL to Dedicated Service Tools (DST) (see "Dedicated Service Tools (DST)" in the *AS/400 Service Functions* information for the system). The file is not closed until the *End Vertical Licensed Internal Code* option is selected. If you remove the tape or diskette before this option is selected, the information on the tape or diskette cannot be used.

**2** Select the *Start a service tool* option from the Use Dedicated Service Tools (DST) display.

**3** Select the *Vertical Licensed Internal Code log* option.

**4** Select either:

- Dump entries to tape from the VLIC log
- Dump entries to diskette from the VLIC log

**5** Perform the following:

a. At the bottom of the Dump Entries to Tape (or Diskette) from VLIC Log display, type a 3 (Dump entry header and complete entry).
b. Press the Enter key.

**6** You will be prompted through the remainder of the displays used in this procedure.

When the contents of the VLIC log are copied, a message appears indicating that the dump (copy) is completed.

a. Press the Enter key.
b. Select the *End Vertical Licensed Internal Code* option.

**Note:** Remember that the file is not closed until the *End Vertical Licensed Internal Code* option is selected.

**This ends the procedure.**

# Chapter 3. Service Referenced Procedures

## Powering Off the System

If the system is operating under DST, power off the system by selecting the *Power off the system* option on the Start a Service Tool display.

If the system is operating under OS/400, enter the PWRDWNSYS command to power off the system. If you cannot use these methods, you can power off the system by using the control panel Power button.

**Note:** If PC Support is running on the system console, a delayed power off using the PWRDWNSYS command is required. Any PC Support applications that are running **must** be stopped before the delayed power off is complete.

**Warning:** Using the control panel Power button to power off the system may cause unpredictable results in the data files, and the next IPL will take longer to complete.

**1** Open the control panel cover.

**2** The system must be in Manual (M) mode to power off. To select Manual mode, see "Selecting IPL and Mode."

**3** Press the Power button on the control panel.

**4** The Power On light starts blinking as the system is powered off. The light stops blinking and stays off when power off is complete.

**This ends the procedure.**

## Powering On the System

**1** Open the control panel cover.

**2** Press the Power button on the control panel.

**3** The Power On light starts blinking as the system is powered on. The light stops

blinking and stays on when power on is complete.

**This ends the procedure.**

## Selecting IPL and Mode

To **display** the last selected IPL type and mode, do the following:

**1** Press either the ↑ or ↓ button until function 01 is shown in the Function/Data display.

**2** Press the Enter button.

**3** The last selected IPL type and mode are shown in the Function/Data display.

To **change** the IPL type, mode, or both, do the following:

**Note:** Function 02 has eight possible combinations of IPL and mode selections. There are four IPL selections in Normal (N) mode and four IPL selections in Manual (M) mode. Ensure that you are selecting the correct IPL type and mode.

**1** Press either the ↑ or ↓ button until function 02 is shown in the Function/Data display.

**2** Press the Enter button.

**3** The last selected IPL type and mode are shown in the Function/Data display.

**4** Press either the ↑ or ↓ button until the combination of IPL type and mode you want to select is displayed.

**5** Press the Enter button.

**6** The IPL type and mode shown in the display have been selected.

**This ends the procedure.**

## Setting System Time and Date

**Warning:** Customer applications may be sensitive to system time and date settings. Incorrect time and date settings may cause data loss. Ensure that the customer knows the time and date that you have set.

Use one of the following methods to set the time and date.

- If the system is powered off, perform a manual mode (attended) IPL. The time and date can be set on the IPL Options display. For more information, see the *System Operation* documentation.

- If the system is powered on, perform the following procedure:

  1. To set the correct time, enter the system command:

     CHGSYSVAL QTIME VALUE('hhmmss')

     Where:

hh = 24-hour time
mm = minutes
ss = seconds

Press the Enter key.

2.

   To set the correct date, enter the system command:

   CHGSYSVAL QDATE VALUE('mmddyy')

   Where:

   mm = month
   dd = day
   yy = year

   Press the Enter key.

   **Note:** The month, day, and year format is used for this example. To determine the format for your system, enter DSPSYSVAL QDATE.

   **This ends the procedure.**

## Manually Removing the Tape Cartridge

**Warning:** This procedure is very delicate and may destroy or damage the tape cartridge. Please use this procedure only after you have tried all of the other options for removing the tape cartridge.

The following procedure describes how to manually remove a tape cartridge from an internal 8mm tape assembly. This procedure may be required if a defective tape cartridge or drive assembly has caused the tape cartridge to fail to eject and the data on the tape cartridge is either critical or sensitive and cannot leave the customer.

**1** Remove the screws from the top cover of the drive assembly. Screws **A** may not be present.
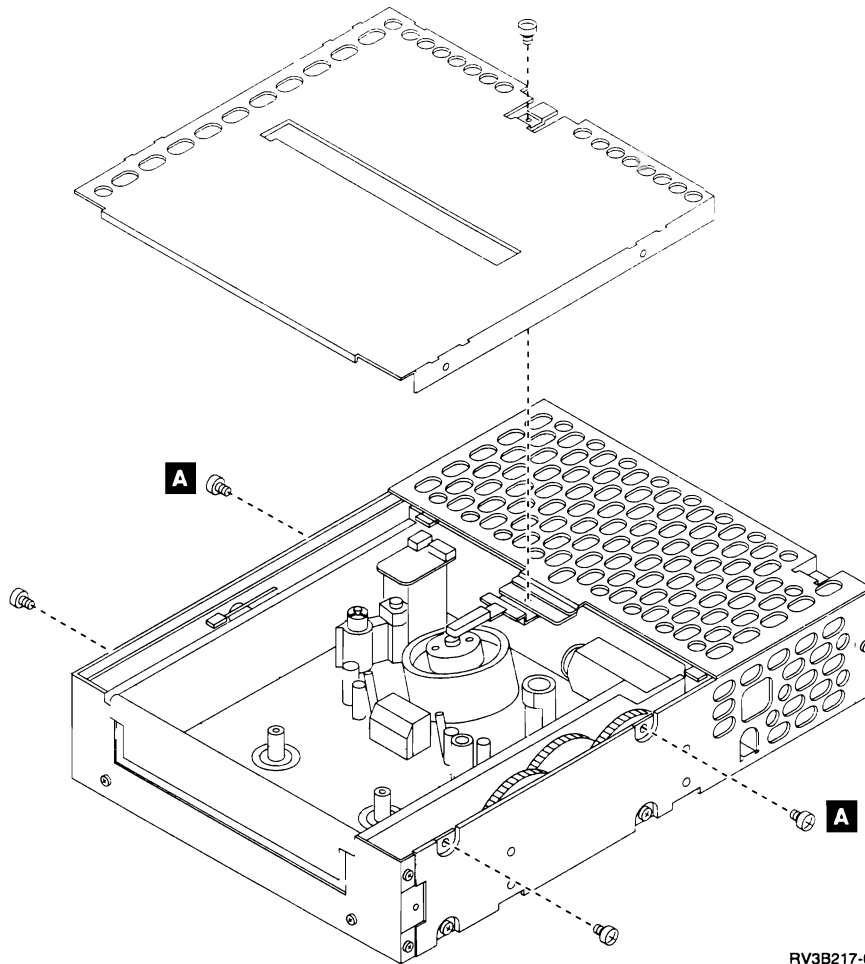
RV3B217-0

**2** Inspect the tape and tape cartridge. There are two positions for the tape.

   a. Properly unloaded from the tape guides, the tape is tight across the opening of the tape cartridge (as shown) and does not touch any tape guides in the drive assembly.

   b. Loaded (touching) on the tape guides.

**3** If the tape is properly unloaded, then go to step 7 on page 3-8.

If the tape is not properly unloaded, the drive assembly may need assistance to unload the tape. Go to step 4.

**4** Two options are available:

   a. Remove the tape cartridge after cutting the tape. Go to step 5.

   b. Remove the tape cartridge using additional manual actions to unload the tape from the tape guides. Go to step 6 on page 3-6.

   **Note:** The procedures in step 6 on page 3-6 may damage the tape and can result in data loss from that tape cartridge. Customers should be aware of this possibility before these procedures are attempted.

**5** **Warning:** The following step will destroy the data and the tape cartridge.

Cut the tape at a convenient location. Go to step 7 on page 3-8 to remove the tape cartridge from the drive assembly.
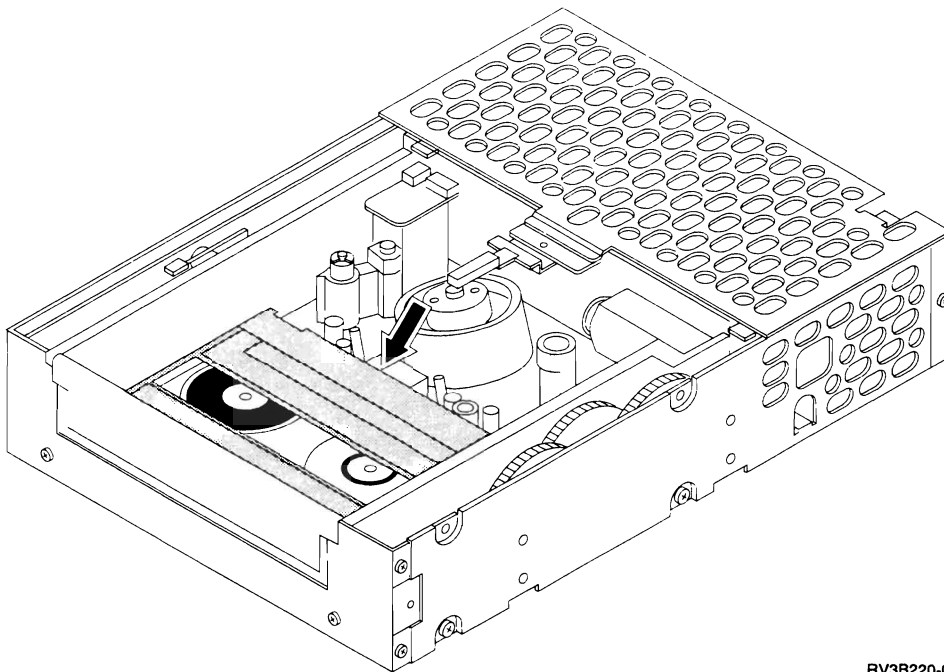
RV3B220-0

**6** Do the following:

a. Loosen the tape as shown **A** . Make sure not to damage or crease the tape. If the pinch roller **B** is engaged, push the pinch roller spring bracket as shown

**C** . This releases the pinch roller and provides a gap from which the tape can be removed.

**Note:** Use a smooth, clean, rounded tool to loosen and lift the tape off the tape guides.
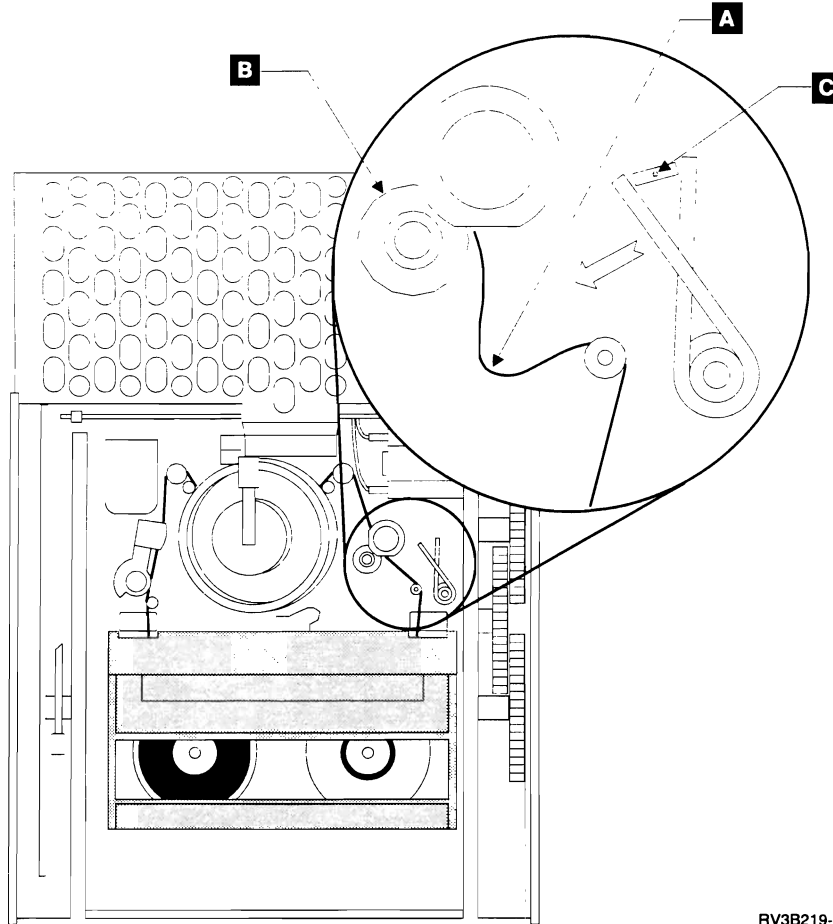
RV3B219-0

b. Turn the drive assembly over and remove the five screws from the bottom cover of the drive assembly (similar to those removed from the top cover).

c. Wind the tape into the tape cartridge using the following steps:

1) Using a small screwdriver, push and hold the reel motor gear **D** to the right as far as possible.

2) Rotate the reel motor gear counter-clockwise while also maintaining pressure by holding the gear to the right.

3) Continue to rotate the gear until all of the tape has been wound into the tape cartridge and the tape is tight across the opening.

**Note:** Make sure that the tape does not catch on the guide pins.

d. Go to step 7 on page 3-8.
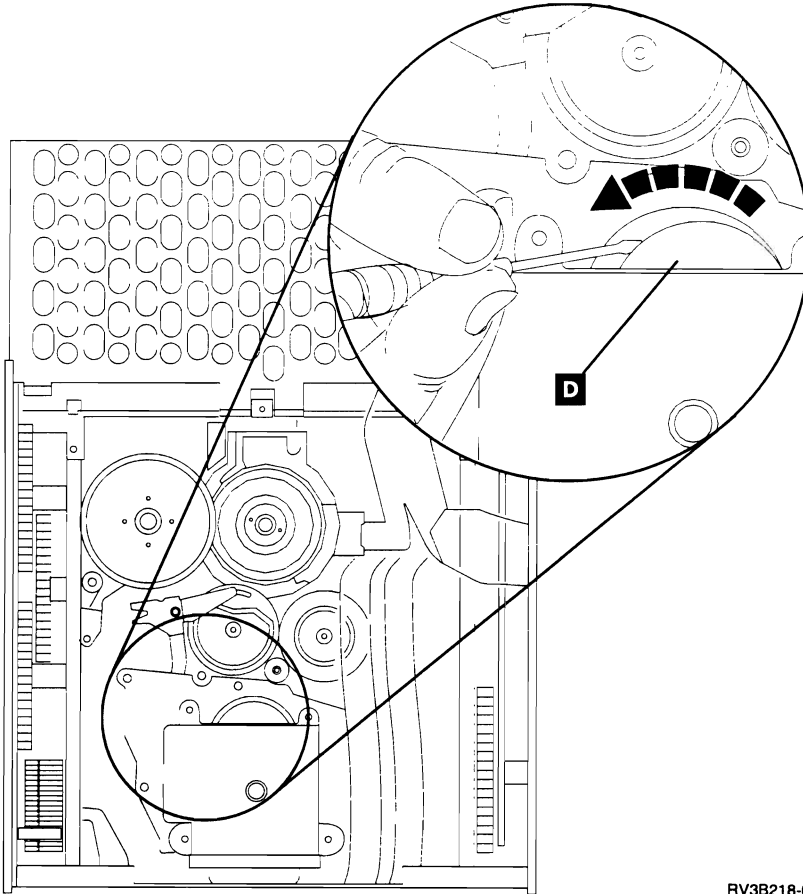
RV3B218-0

**7** Locate the lock release tab **A** and the cassette loading gear **B** .

**8** Using your index finger, gently press down the lock release tab until it clicks.

**9** Using the thumb of your other hand, roll the cassette loading gear toward the front of the drive assembly until the tape cartridge is ejected.

**Note:** It is not recommended to reuse cartridges that are removed using this procedure.

RV3B221-0
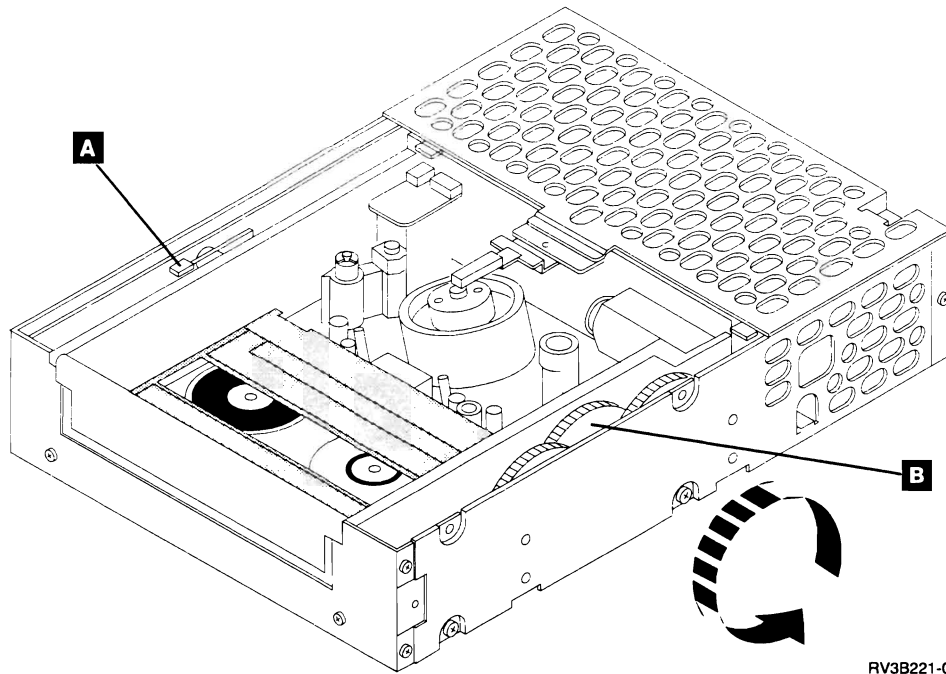
# Chapter 4. Parts Listing

# How To Use This Parts Listing

- SIMILAR ASSEMBLIES: If two assemblies contain a majority of identical parts, they are broken down on the same list. Common parts are shown by one index number. Parts peculiar to one or the other of the assemblies are listed separately and identified by description.

- AR: (As Required) in the **Units** column indicates that the quantity is not the same for all machines.

- NP: (Non-Procurable) in the **Units** column indicates that the part is non-procurable and that the individual parts or the next higher assembly should be ordered.

- NR: (Not Recommended) in the **Units** column indicates that the part is procurable but not recommended for field replacement, and that the next higher assembly should be ordered.

- R: (Restricted) in the **Units** column indicates that the part has a restricted availability.

- INDENTURE: The indenture is marked by a series of dots located before the parts description. The indenture indicates the relationship of a part to the next higher assembly. For example:

**Indenture Relationship of Parts**

(No dot)    MAIN ASSEMBLY

(One dot)   • Detail parts of a main assembly

(One dot)   • Sub assembly of the main assembly

(Two dot)   • • Detail part of a one-dot sub assembly

(Two dot)   • • Sub assembly of a one-dot sub assembly

(Three dot) • • • Detail part of a two-dot sub assembly

| Asm-Index | Part Number | Units | Description |
|---|---|---|---|
| 3- | 2512667 | 1 | Cover Asm, Rear, Red |
| | 2513714 | 1 | Cover Asm, Rear, White<br>   For Next Higher Asm,<br>   See Assembly 1-2 |
| -1 | 5373637 | 1 | • Seal, Top |
| -2 | 5356429 | 2 | • Clip, Retaining |
| -3 | 1847630 | 1 | • Finger Stock Asm |
| -4 | 1847602 | NR | • • Channel, Finger Stock |
| -5 | 5373639 | AR | • Seal, Bottom |
| -6 | 5356429 | 2 | • Clip, Retaining |
| -7 | | NP | • Cover, Rear, Without Paint |
| -8 | 0416629 | R | • Screw, Panel |

# Assemblies

# Assembly 1: Cover Assemblies 1
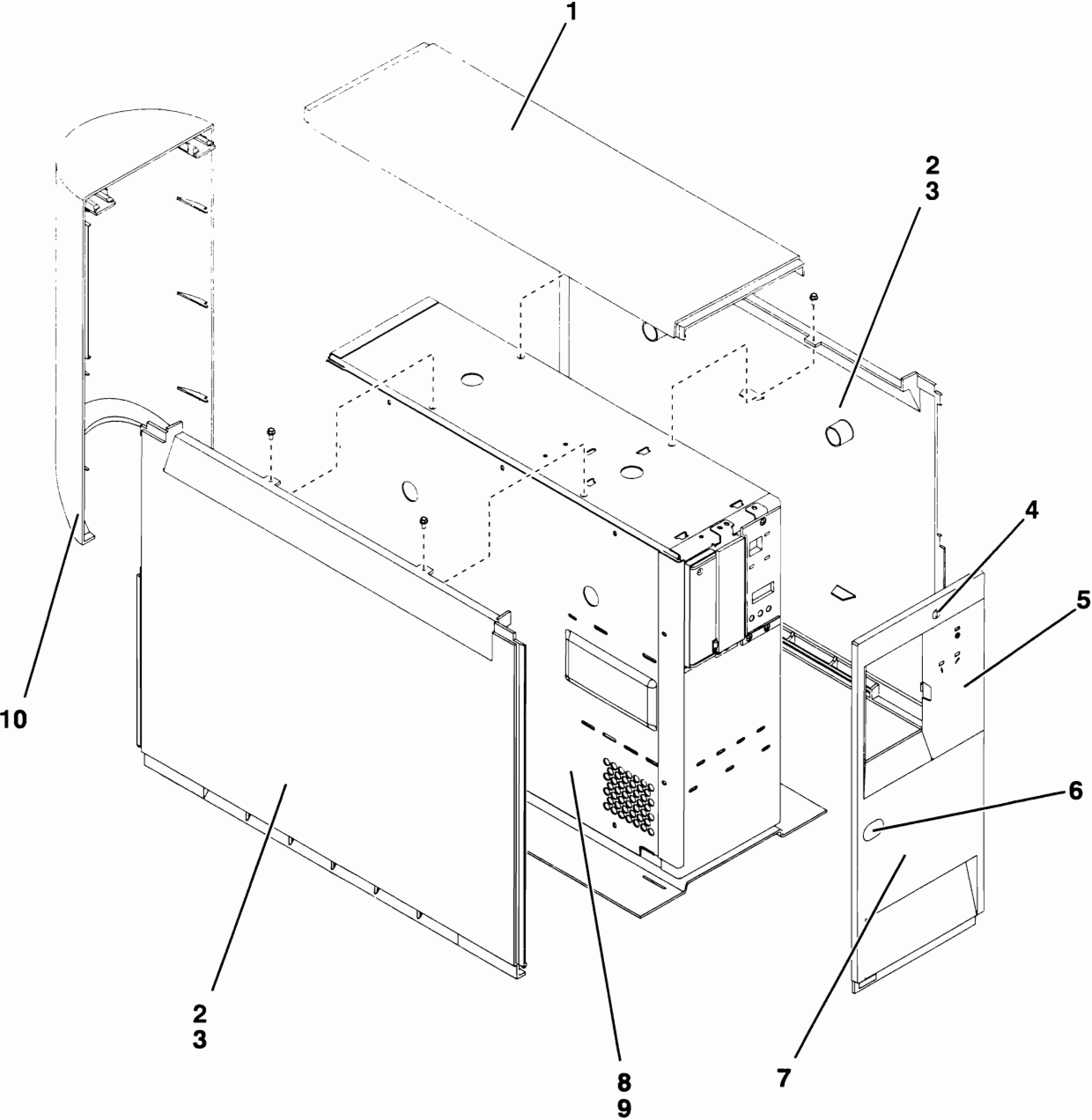


RV3B399-2

| Asm–Index | Part Number | Units | Description |
|---|---|---|---|
| 1–1 | 74G9767 | 1 | • Top Cover |
| –2 | 74G9766 | 1 | • Side Cover |
| –3 | 1621812 | 2 | • Screw, Hex Hd M4 x 8 Lg |
| –4 | 46G0324 | 1 | • Keylock Asm |
| –5 | 74G9765 | 1 | • Control Panel Door |
| –6 | 74G9802 | 1 | • Logo, AS/400 Advanced |
| –6 | 74G9803 | 1 | • Logo, AS/400 Advanced Server |
| –7 | 46G0320 | 1 | • Front Cover Asm |
| –8 | NoNum | NP | • Access Plate |
| –9 | 1621812 | 8 | • Screw, Hex Hd M4 x 8 Lg |
| –10 | 46G0321 | 1 | • Rear Cover Asm |

# Assembly 2:  Cover Assemblies 2
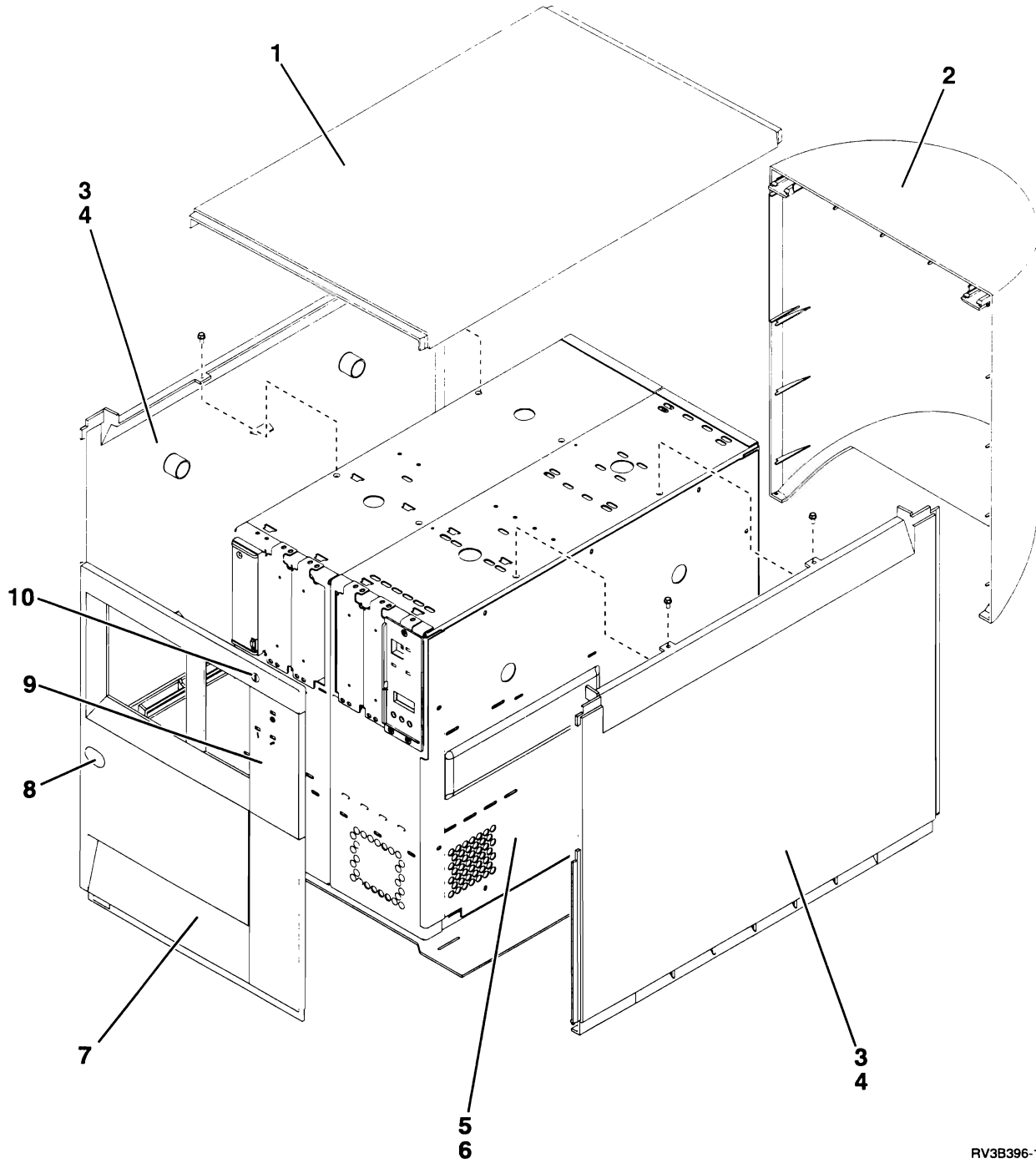


RV3B396-1

| Asm–Index | Part Number | Units | Description |
|---|---|---|---|
| 2–1 | 46G0248 | 1 | • Top Cover |
| –2 | 46G0323 | 1 | • Rear Cover Asm |
| –3 | 74G9766 | 1 | • Side Cover |
| –4 | 1621812 | 2 | • Screw, Hex Hd M4 x 8 Lg |
| –5 | NoNum | NP | • Access Plate |
| –6 | 1621812 | 8 | • Screw, Hex Hd M4 x 8 Lg |
| –7 | 46G0322 | 1 | • Front Cover Asm |
| –8 | 74G9802 | 1 | • Logo, AS/400 Advanced |
| –8 | 74G9803 | 1 | • Logo, AS/400 Advanced Server |
| –9 | 74G9765 | 1 | • Control Panel Door |
| –10 | 46G0324 | 1 | • Keylock Asm |

# Assembly 3: System Unit Final Assembly 1



RV3B398-4
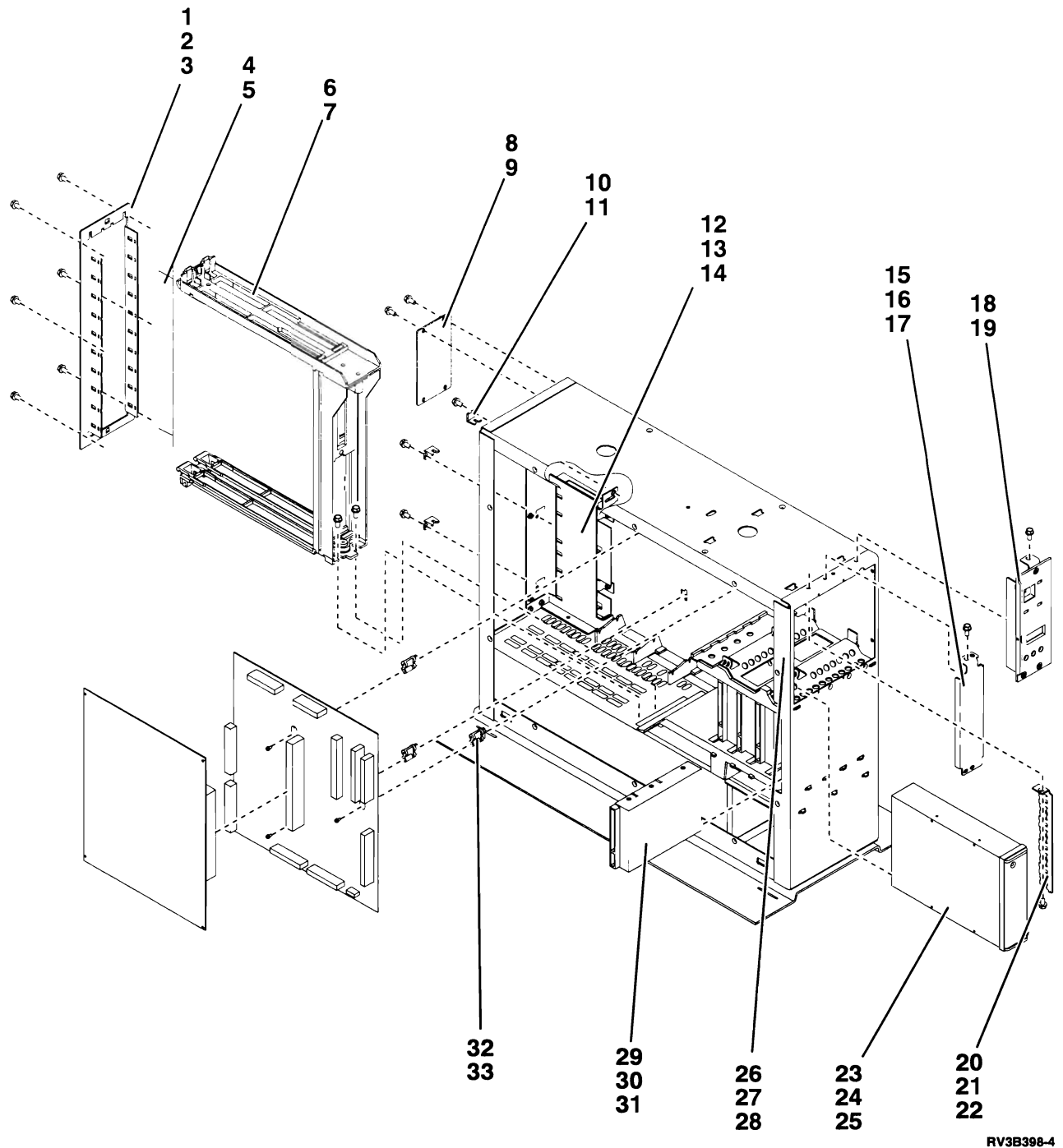
| Asm–Index | Part Number | Units | Description |
|---|---|---|---|
| 3–1 | NoNum | NP | • Ring Plate, Card Enclosure |
| –2 | 1621812 | 6 | • Screw, Hex Hd M4 x 8 Lg |
| –3 | 75G3372 | 20 | • Spring, EMC |
| –4 | 74G9792 | 1 | • Spring Asm, EMC |
| –5 | 75G3372 | 6 | • Spring, EMC |
| –6 | NoNum | NP | • Card Enclosure |
|  |  |  | For Detail Breakdown, See "Assembly 6: Card Enclosure - System Unit" on page 4-14 |
| –7 | 1621812 | 2 | • Screw, Hex Hd M4 x 8 Lg |
| –8 | 74G9810 | 1 | • Twinaxial Workstation Plate Asm, 2-Port |
| –8 | 74G9813 | 1 | • Twinaxial Workstation Plate Asm, 8-Port |
| –8 | 74G9811 | 1 | • ASCII Workstation Plate Asm |
| –8 | 74G9812 | 1 | • Workstation Plate Asm for Local Talk |
| –9 | 1621812 | 4 | • Screw, Hex Hd M4 x 8 Lg |
| –10 | 74G9795 | 3 | • Card Support |
| –11 | 1621812 | 3 | • Screw, Hex Hd M4 x 8 Lg |
| –12 | NoNum | NP | • Comm Book Enclosure |
| –13 | 1621811 | 3 | • Screw, Hex Hd M4 x 10 Lg |
| –14 | 75G3372 | 6 | • Spring, EMC |
| –15 | 74G9784 | AR | • Plate, Blank (Removable Media) |
| –16 | 1621812 | AR | • Screw, Hex Hd M4 x 8 Lg |
| –17 | 75G3372 | 6 | • Spring, EMC |
| –18 | NoNum | NP | • Control Panel Asm |
|  |  |  | For Detail Breakdown, See "Assembly 8: Control Panel Assembly" on page 4-16 |
| –19 | 1621812 | 3 | • Screw, Hex Hd M4 x 8 Lg |
| –20 | 74G9780 | 1 | • Divider Panel |
| –21 | 1621812 | 1 | • Screw, Hex Hd M4 x 8 Lg |
| –22 | 75G3372 | 6 | • Spring, EMC |
| –23 | 21F8566 | AR | • 1/4-Inch Tape Drive, QIC-525 (White Cover) |
| –23 | 16G8491 | AR | • 1/4-Inch Tape Drive, QIC-1000 (White Cover) |
| –23 | 16G8571 | AR | • 1/4-Inch Tape Drive, QIC-2GB (Black Cover) |
| –23 | 16G8566 | AR | • 8 mm Tape Drive |
| –24 | 1624743 | 1 | • Screw |
| –25 | 1675209 | 1 | • Jumper |
| –26 | NoNum | NP | • Plate, Grounding (Removable Media) |
| –27 | 1621812 | 2 | • Screw, Hex Hd M4 x 8 Lg |
| –28 | 75G3372 | 6 | • Spring, EMC |
| –29 | 45G9501 | AR | • 6602-1 Disk Drive |
| –30 | 45G9509 | 1 | • • Disk Drive Logic Card |
| –31 | 8193233 | AR | • Jumper |
| –32 | 74G9790 | 3 | • Card Standoff |
| –33 | 1621812 | 3 | • Screw, Hex Hd M4 x 8 Lg |

# Assembly 4: System Unit Final Assembly 2

RV3B397-4
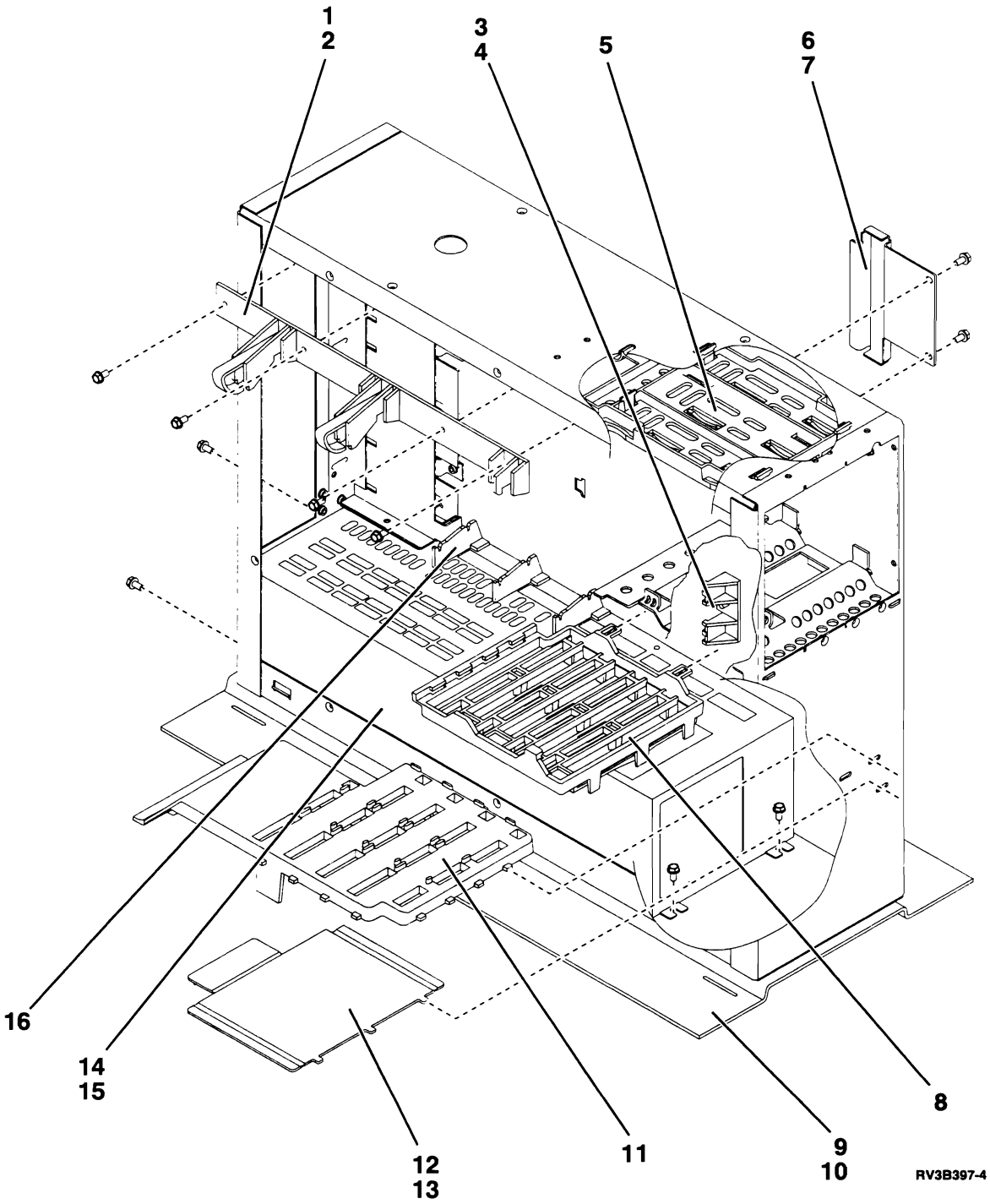
| Asm–Index | Part Number | Units | Description |
|---|---|---|---|
| 4–1 | 74G9806 | 1 | • Card Retainer, Upper |
| –2 | 1621812 | 4 | • Screw, Hex Hd M4 x 8 Lg |
| –3 | 46G0287 | 1 | • Card Retainer, Side |
| –4 | 1621812 | 1 | • Screw, Hex Hd M4 x 8 Lg |
| –5 | NoNum | NP | • Guide, Top (Removable Media) |
| –6 | 74G9770 | 1 | • Plate, Cover (Terminator) |
| –7 | 1621812 | 2 | • Screw, Hex Hd M4 x 8 Lg |
| –8 | NoNum | NP | • Disk Unit Bracket, Top |
| –9 | 74G9762 | 1 | • Pedestal |
| –10 | 1621812 | 2 | • Screw, Hex Hd M4 x 8 Lg |
| –11 | NoNum | NP | • Disk Unit Bracket, Bottom |
| –12 | NoNum | NP | • Air Shroud, 320W only |
| –12 | NoNum | NP | • Air Shroud, 175W only |
| –13 | 1621812 | 2 | • Screw, Hex Hd M4 x 8 Lg (175W only) |
| –14 | 74G9793 | 1 | • Power Supply, 175W |
| –14 | 74G9796 | 1 | • Power Supply, 320W |
| –15 | 1621812 | 4 | • Screw, Hex Hd M4 x 8 Lg |
| –16 | 74G9789 | 4 | • Card Retainer, Lower |

# Assembly 5: Expansion Unit Final Assembly
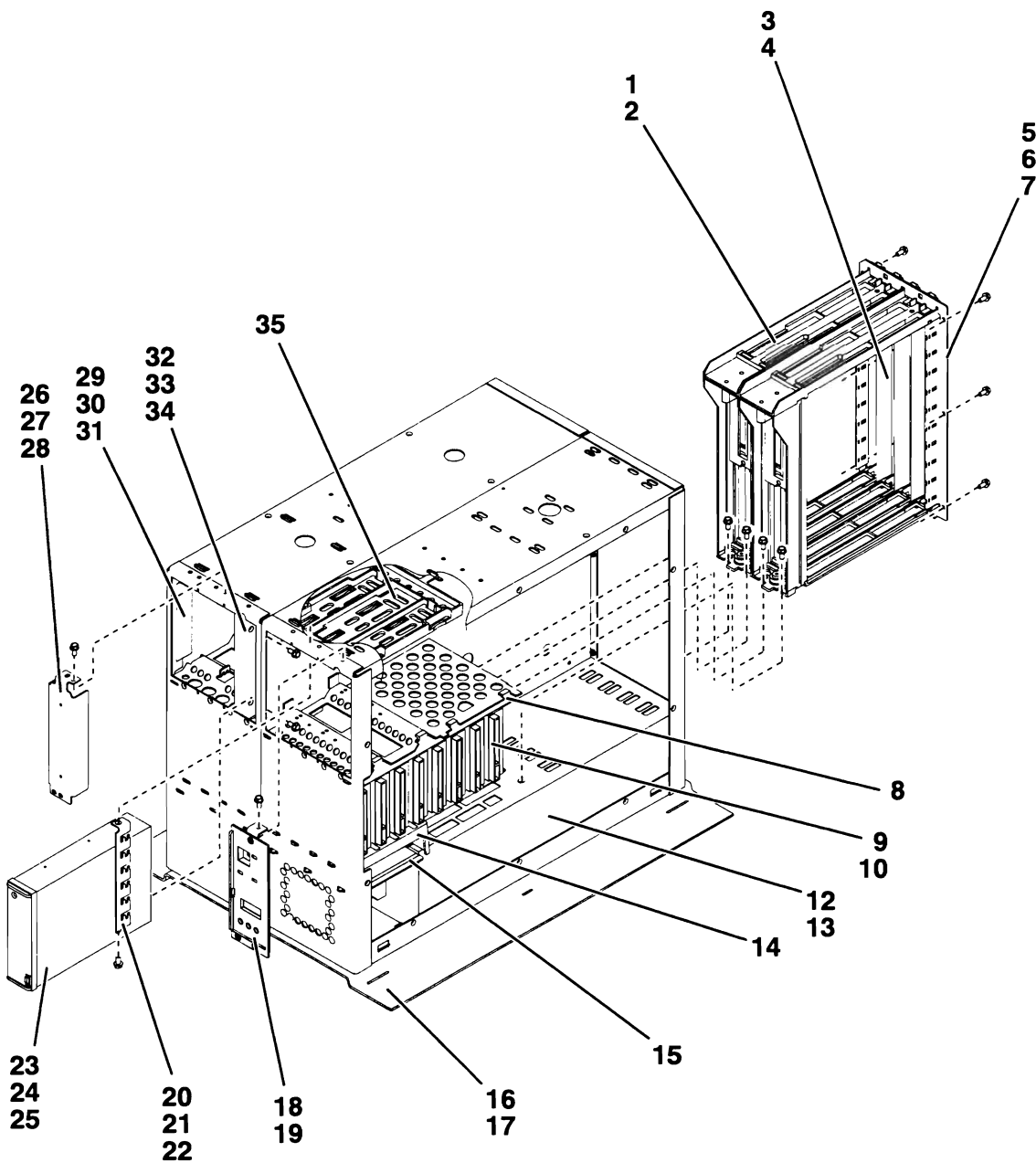
RV3B395-4

| Asm–Index | Part Number | Units | Description |
|---|---|---|---|
| 5–1 | NoNum | NP | • Card Enclosure<br>For Detail Breakdown, See "Assembly 7: Card Enclosure - Expansion Unit" on page 4-15 |
| –2 | 1621811 | 4 | • Screw, Hex Hd M4 x 10 Lg |
| –3 | 74G9792 | AR | • Spring Asm, EMC |
| –4 | 75G3372 | 6 | • Spring, EMC |
| –5 | NoNum | NP | • Ring Plate, Card Enclosure |
| –6 | 75G3372 | 6 | • Spring, EMC |
| –7 | 1621812 | 6 | • Screw, Hex Hd M4 x 8 Lg |
| –8 | NoNum | NP | • Disk Unit Bracket, Top |
| –9 | 45G9501 | AR | • 6602-1 Disk Drive |
| –10 | 45G9509 | 1 | • • Disk Drive Logic Card |
| –12 | 74G9797 | 1 | • Power Supply |
| –13 | 1621812 | 4 | • Screw, Hex Hd M4 x 8 Lg |
| –14 | NoNum | NP | • Disk Unit Bracket, Bottom |
| –15 | NoNum | NP | • Air Shroud |
| –16 | 46G0257 | 1 | • Pedestal |
| –17 | 1621812 | 4 | • Screw, Hex Hd M4 x 8 Lg |
| –18 | NoNum | NP | • Control Panel Asm<br>For Detail Breakdown, See "Assembly 8: Control Panel Assembly" on page 4-16 |
| –19 | 1621812 | 3 | • Screw, Hex Hd M4 x 8 Lg |
| –20 | 74G9780 | 1 | • Divider Panel Asm, EMC |
| –21 | 1621812 | 1 | • Screw, Hex Hd M4 x 8 Lg |
| –22 | 75G3372 | 6 | • Spring, EMC |
| –23 | 21F8566 | AR | • 1/4-Inch Tape Drive, QIC-525 (White Cover) |
| –23 | 16G8491 | AR | • 1/4-Inch Tape Drive, QIC-1000 (White Cover) |
| –23 | 16G8571 | AR | • 1/4-Inch Tape Drive, QIC-2GB (Black Cover) |
| –23 | 16G8516 | AR | • 8 mm Tape Drive |
| –24 | 1624743 | 2 | • Screw, |
| –25 | 1675209 | 1 | • Jumper |
| –26 | 74G9784 | AR | • Plate, Tape Blank |
| –27 | 1621812 | 2 | • Screw, Hex Hd M4 x 8 Lg |
| –28 | 75G3372 | 6 | • Spring, EMC |
| –29 | NoNum | NP | • Plate, Grounding (Removable Media) |
| –30 | 1621812 | 2 | • Screw, Hex Hd M4 x 8 Lg |
| –31 | 75G3372 | 6 | • Spring, EMC |
| –32 | 74G9794 | 1 | • Plate Asm, Control Panel Blank |
| –33 | 1621812 | 2 | • Screw, Hex Hd M4 x 8 Lg |
| –34 | 75G3372 | 6 | • Spring, EMC |
| –35 | NoNum | NP | • Guide, Top |

# Assembly 6: Card Enclosure - System Unit
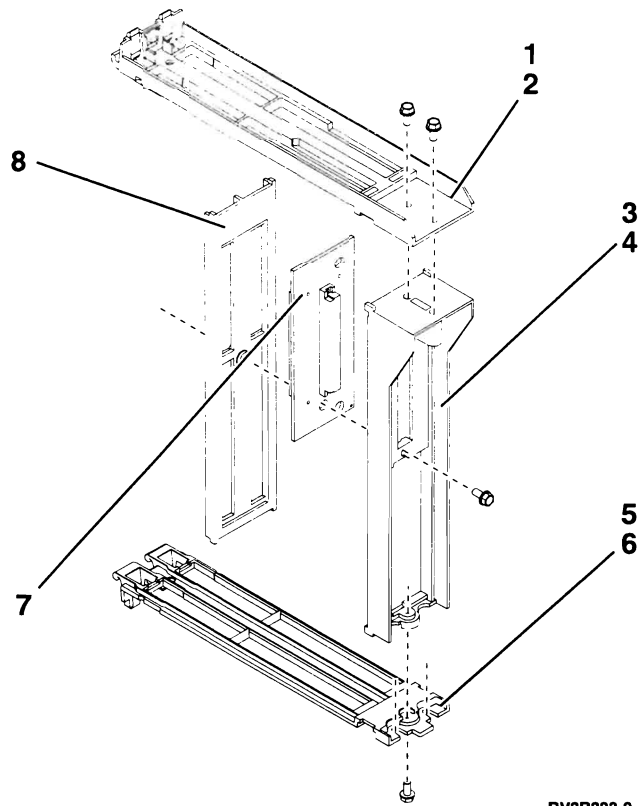
RV3B392-0

| Asm–Index | Part Number | Units | Description |
|---|---|---|---|
| 6– | NoNum | NP | Card Enclosure |
| –1 | NoNum | NP | • Guide, Top |
| –2 | 1622682 | 2 | • Screw, 20mm Plastite |
| –3 | NoNum | NP | • Stiffener, Back |
| –4 | 69X9337 | 1 | • Screw, 12mm Plastite |
| –5 | NoNum | NP | • Guide, Bottom |
| –6 | 1622682 | 1 | • Screw, 20mm Plastite |
| –7 | 46G0288 | 1 | • Backplane Asm |
| –8 | NoNum | NP | • Stiffener, Front |

# Assembly 7: Card Enclosure - Expansion Unit
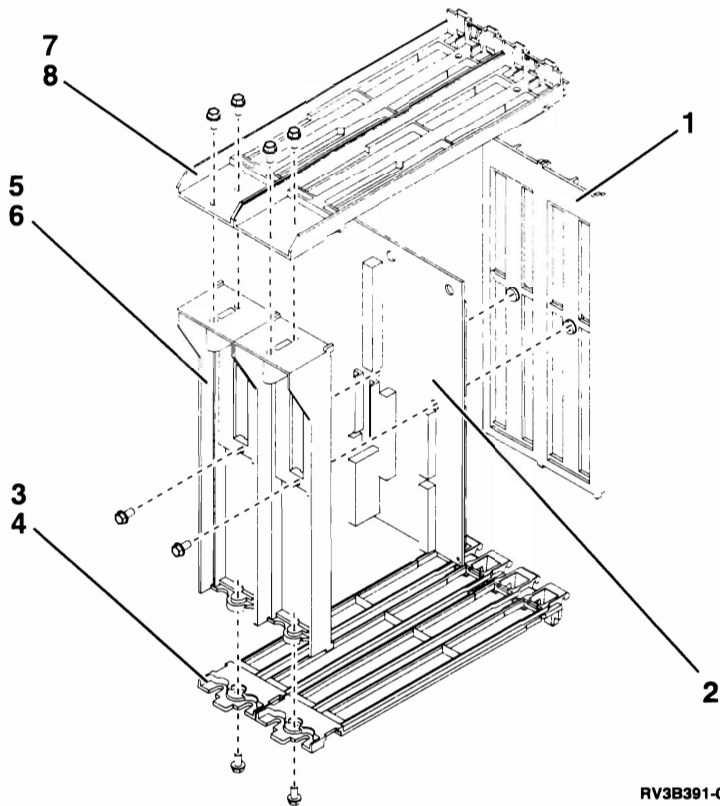
RV3B391-0

| Asm–Index | Part Number | Units | Description |
|-----------|-------------|-------|-------------|
| 7– | NoNum | NP | Card Enclosure |
| –1 | NoNum | NP | • Stiffener, Front |
| –2 | 46G0289 | 1 | • Backplane Assembly |
| –3 | NoNum | NP | • Guide, Bottom |
| –4 | 1622682 | 2 | • Screw, 20mm Plastite |
| –5 | NoNum | NP | • Stiffener, Back |
| –6 | 69X9337 | 2 | • Screw, 12mm Plastite |
| –7 | NoNum | NP | • Guide, Top |
| –8 | 1622682 | 4 | • Screw, 20mm Plastite |

# Assembly 8: Control Panel Assembly



RV3B393-2
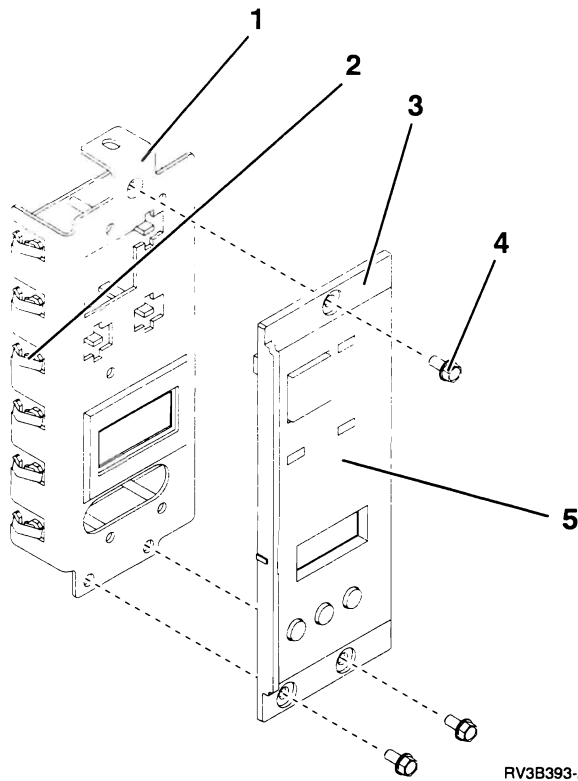
| Asm– Index | Part Number | Units | Description |
|---|---|---|---|
| 8– | | NP | Control Panel Assembly |
| –1 | 8193207 | 1 | • Circuit Card Asm |
| –2 | 75G3372 | 6 | • • Spring, EMC |
| –3 | 46G0294 | 1 | • Bezel Asm |
| –4 | 1621812 | 3 | • Screw, Hex Hd M4 x 8 Lg |
| –5 | 74G9808 | 1 | Overlay, English |
| –5 | 46G0273 | 1 | Overlay, German |
| –5 | 46G0274 | 1 | Overlay, Italian |
| –5 | 46G0277 | 1 | Overlay, Japanese |
| –5 | 46G0280 | 1 | Overlay, Chinese - Simplified |
| –5 | 46G0279 | 1 | Overlay, Chinese - Traditional |
| –5 | 46G0278 | 1 | Overlay, Korean |
| –5 | 46G0275 | 1 | Overlay, Norwegian |
| –5 | 46G0272 | 1 | Overlay, French |
| –5 | 46G0276 | 1 | Overlay, Spanish |

# Assembly 9: Power Supply Cord Assemblies
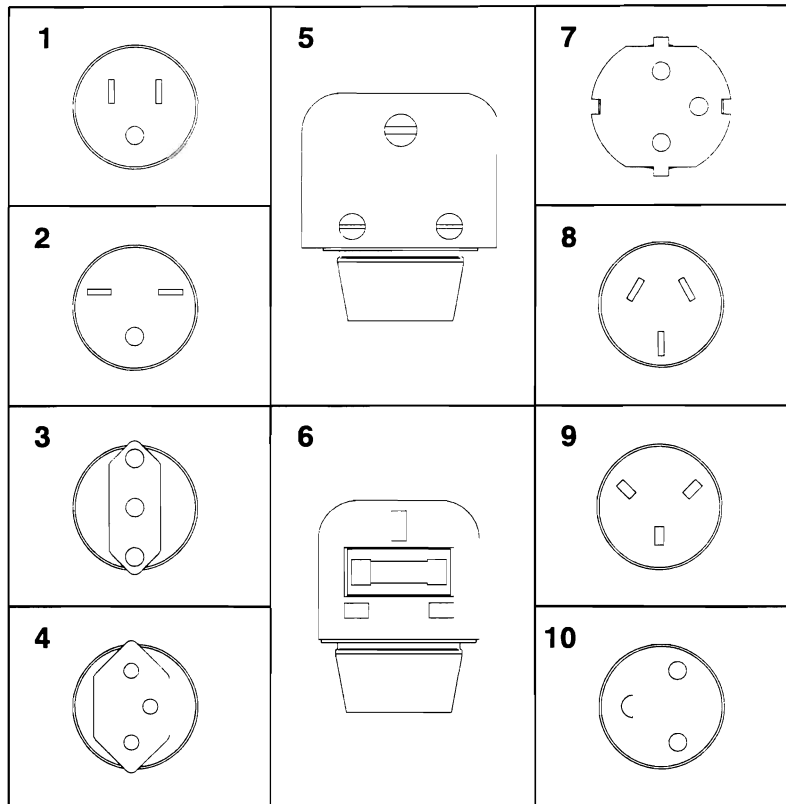
RV2B688-0

| Asm–Index | Part Number | Units | Description |
|---|---|---|---|
| 9–1 | 2453011 | 1 | Power Supply Cord-US 110 V |
| –2 | 1838576 | 1 | Power Supply Cord-US, Thailand 220 V |
| –3 | 14F0069 | 1 | Power Supply Cord-Chile, Italy |
| –4 | 14F0051 | 1 | Power Supply Cord-Switzerland |
| –5 | 14F0015 | 1 | Power Supply Cord-Sri Lanka |
| –6 | 14F0033 | 1 | Power Supply Cord-Hong Kong, United Kingdom |
| –7 | 13F9979 | 1 | Power Supply Cord-Germany |
| –8 | 13F9940 | 1 | Power Supply Cord-Australia, New Zealand |
| –9 | 14F0087 | 1 | Power Supply Cord-Israel |
| –10 | 13F9997 | 1 | Power Supply Cord-Denmark |

## Assembly 10: Internal Cable Assemblies

| Asm–Index | Part Number | Units | Description |
|---|---|---|---|
| 10– | 87G4418 | AR | SIG30A, MFIOP to System Unit Disk Units 1-4 |
| – | 87G4420 | AR | SIG30C, MFIOP to System Unit Disk Units (Connectors 1 and 2) |
| – | 8193228 | AR | SIG31, MFIOP to System Unit Tape Units |
| – | 74G9811 | AR | SIG32A, MFIOP to Workstation Plate |
| – | 74G9810 | AR | SIG32B, MFIOP to Workstation Plate |
| – | 74G9813 | AR | SIG32C, MFIOP to Workstation Plate |
| – | 74G9812 | AR | SIG32D, MFIOP to Workstation Plate |
| – | 8193226 | AR | SIG33, MFIOP to System Unit Card Enclosure |
| – | 8193225 | AR | SIG34A, MFIOP to System Unit Control Panel |
| – | 46G0267 | AR | SIG34B, MFIOP to Expansion Unit Control Panel |
| – | 8193221 | AR | SIG35, System Unit Power Supply J3 to MFIOP |
| – | 8193220 | AR | SIG36, MFIOP to uninterruptible power supply |
| – | 87G4419 | AR | SIG40, Expansion Unit Card Enclosure to Disk Units |
| – | 46G0266 | AR | SIG41, Expansion Unit Card Enclosure to Tape Units |
| – | 46G0262 | AR | SIG42, Expansion Unit Power Supply J3 to Expansion Unit Card Enclosure |
| – | 8193226 | AR | SIG43, MFIOP to Expansion Unit Card Enclosure |
| – | 8193229 | AR | PWR11, System Unit Power Supply J1 to MFIOP |
| – | 8193229 | AR | PWR12, System Unit Power Supply J2 to MFIOP |
| – | 46G0285 | AR | PWR14, System Unit Power Supply J4 to Tape/Disk Units |
| – | 8193224 | AR | PWR15, System Unit Power Supply J5 to Tape/Disk Units |
| – | 46G0261 | AR | PWR21, Expansion Unit Power Supply J1 to Expansion Unit Card Enclosure |
| – | 46G0261 | AR | PWR22, Expansion Unit Power Supply J2 to Expansion Unit Card Enclosure |
| – | 46G0263 | AR | PWR24, Expansion Unit Power Supply J4 to Tape/Disk Units |
| – | 46G0263 | AR | PWR25, Expansion Unit Power Supply J5 to Tape/Disk Units |

# Assembly 11: External Cable Assemblies

| Asm–<br>Index | Part<br>Number | Units | Description |
|---|---|---|---|
| 11– | 21F5097 | AR | ASCII, 6 m (20 feet) - 6 Port (9841) |
| – | 59X3829 | AR | ASCII, 6 m (20 feet) - 12 Port (9825) |
| – | 21F4339 | AR | ASCII, 6 m (20 feet) |
| – | 21F4344 | AR | ASCII, 12 m (40 feet) |
| – | 21F9966 | AR | ASCII, 6 m (20 feet) - PC to Modem |
| – | 21F9036 | AR | ASCII, 6 m (20 feet) - PC to ASCII |
| – | 21F4405 | AR | ASCII, Surge Suppress |
| – | 59X3833 | AR | Async, 6 m (20 feet) - Modem |
| – | 21F2591 | AR | Async, 6 m (20 feet) - Modem (Germany) |
| – | 93X0185 | AR | Async, 6 m (20 feet) - Modem (Japan) |
| – | 85F8109 | AR | Cryptographic, 6 m (20 feet) (9848) |
| – | 46G2747 | AR | DIN Connector Box, .5 m (2 feet) for 6054 |
| – | 61F5259 | AR | Fax, 2 m (6.5 feet) - US, Canada |
| – | 71F9315 | AR | Fax, 2 m (6.5 feet) - France |
| – | 05F2467 | AR | Fax, 2 m (6.5 feet) - UK |
| – | 71F9267 | AR | Fax, 2 m (6.5 feet) - Germany |
| – | 61F5259 | AR | Fax, 2 m (6.5 feet) - Japan |
| – | 71F9313 | AR | Fax, 2 m (6.5 feet) - Italy |
| – | 43G3322 | AR | Fax, 2 m (6.5 feet) - Spain |
| – | 71F9204 | AR | Fax, 2 m (6.5 feet) - Sweden |
| – | 71F9208 | AR | Fax, 2 m (6.5 feet) - Australia |
| – | 71F9321 | AR | Fax, 2 m (6.5 feet) - Denmark |
| – | 71F9202 | AR | Fax, 2 m (6.5 feet) - Hong Kong |
| – | 61F5259 | AR | Fax, 2 m (6.5 feet) - Taiwan |
| – | 71F9319 | AR | Fax, 2 m (6.5 feet) - Finland |
| – | 71F9311 | AR | Fax, 2 m (6.5 feet) - Netherlands |
| – | 61F5210 | AR | Fax, 2 m (6.5 feet) - Switzerland |
| – | 61F5259 | AR | Fax, 2 m (6.5 feet) - Philippines |
| – | 74F1663 | AR | ISDN (9844) |
| – | 17G2528 | AR | ISDN - France (9844) |
| – | 8191781 | AR | ISDN - Switzerland (9844) |
| – | 22F0149 | AR | RS232, 6 m (20 feet) (9022) |
| – | 22F0151 | AR | RS232, 6 m (20 feet) - Japan (9022) |
| – | 22F0150 | AR | RS232, 6 m (20 feet) - Germany (9022) |
| – | 21F9348 | AR | RS232, 15.6 m (50 feet) (9836) |
| – | 21F9349 | AR | RS232, 15.6 m (50 feet) - Japan (9836) |
| – | 21F9353 | AR | RS232, 15.6 m (50 feet) - Germany (9836) |
| – | 72X5643 | AR | RS366 (AUTOCALL), 6 m (20 feet) (9840) |
| – | 21F4415 | AR | RS366 (AUTOCALL), 6 m (20 feet) - Japan (9840) |
| – | 21F4348 | AR | RS422, 30 m (100 feet) |
| – | 6495268 | AR | SCSI, 4 m (12 feet) (9826) |
| – | 6495269 | AR | SCSI, 12 m (40 feet) (9827) |
| – | 21F4980 | AR | SCSI, 20 m (60 feet) (9846) |
| – | 6339098 | AR | Token-Ring LAN |
| – | 22F0097 | AR | Twinaxial, 25 Pin to Two 9-Pin |
| – | 72X5645 | AR | Twinaxial, 4 Port |
| – | 21F5093 | AR | Twinaxial, 6 m (20 feet) - 8 Port Molded |
| – | 21F8075 | AR | Twinaxial Extender, 9 m (30 feet) - 8 Port |

| Asm–Index | Part Number | Units | Description |
|---|---|---|---|
| 11– | 4236482 | AR | Twinaxial, 6 m (20 feet) - To First W/S Console |
| – | 22F0152 | AR | V.24 6 m (20 feet) (9023) |
| – | 22F0154 | AR | V.24 6 m (20 feet) - Japan (9023) |
| – | 22F0153 | AR | V.24 6 m (20 feet) - Germany (9023) |
| – | 21F9350 | AR | V.24 15.6 m (50 feet) (9835) |
| – | 21F9351 | AR | V.24 15.6 m (50 feet) - Japan (9835) |
| – | 21F9352 | AR | V.24 15.6 m (50 feet) - Germany (9835) |
| – | 1749352 | AR | V.35, French Stub |
| – | 21F9357 | AR | V.35 - 15.6 m (50 feet) (9838) |
| – | 72X5641 | AR | V.35 - 6 m (20 feet) (9020) |
| – | 17G3991 | AR | V.35 - 6 m (20 feet) (9879) for FC 2666 |
| – | 17G3992 | AR | V.35 - 24.4 m (80 feet) (9880) for FC 2666 |
| – | 17G4000 | AR | V.36/RS449 - 6 m (20 feet) (9882) for FC 2666 |
| – | 17G4001 | AR | V.36/RS449 - 24.4 m (80 feet) (9883) for FC 2666* |
| – | 17G4002 | AR | V.36/RS449 - 45.7 m (150 feet) (9884) for FC 2666* |
| | | | (* looped clocking modem required) |
| – | 21F9356 | AR | X.21 - 15.6 m (50 feet) (9839) |
| – | 72X5640 | AR | X.21 - 6 m (20 feet) (9021) |
| – | 17G3987 | AR | X.21 - 6 m (20 feet) (9885) for FC 2666 |
| – | 21F9345 | AR | 2 Port Adapter Cable |
| – | 62X3421 | AR | 370 Tape IOP Adapter (Dual 50 Pin to Bus/Tag) |
| – | 6473029 | AR | 370 Tape IOP Adapter (78 Pin to Bus/Tag) |
| – | 6473011 | AR | 370 Tape Internal Channel, 1.7 m (78 Pin to 78 Pin) |
| – | 6473014 | AR | 370 Tape Internal Channel, 6.6 m (78 Pin to 78 Pin) |
| – | 6473016 | AR | 370 Tape Internal Channel, 24.0 m (78 Pin to 78 Pin) |
| – | 6473026 | AR | 370 Tape Device Adapter (Bus/Tag to 78 Pin, 3490E C Models Only) |
| – | 46G3658 | AR | Diskette, 2.4 m (8 feet) (9890) |

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| Asm–Index | Part Number | Units | Description |
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| 12– | 21F9354 | 1 | AA Card Wrap (T-pack) |
| – | 72X6365 | 1 | BB Card Wrap (Universal) |
| – | 74F1846 | 1 | CC Card Wrap (Enet) |
| – | 17G4124 | 1 | DD Card Wrap (SDDI) |
| – | 17G4138 | 1 | EE Card Wrap (Fax) |
| – | 17G4009 | 1 | FF Card Wrap (High Speed) |
| – | 92F9003 | 1 | GG Card Wrap (FDDI) |
| – | 23F5634 | 1 | HH Card Wrap (Crypto) |
| – | 6165899 | 1 | II Card Wrap (TRLAN) |
| – | 59X3832 | 1 | ASCII Cable Wrap |
| – | 56F0307 | 1 | ISDN Cable Wrap |
| – | 17G2641 | 1 | RS232 Cable Wrap |
| – | 17G2642 | 1 | ASYNC Cable Wrap |
| – | 17G2643 | 1 | RS366 Cable Wrap |
| – | 17G2644 | 1 | RS449 Cable Wrap |
| – | 17G2645 | 1 | V24 Cable Wrap |
| – | 17G2646 | 1 | X21 Cable Wrap |
| – | 17G4103 | 1 | X21HS Cable Wrap |
| – | 17G2647 | 1 | V35HS Cable Wrap |
| – | 17G2648 | 1 | V35 Cable Wrap |
| – | 16G8095 | 1 | Battery, 3 Volt Lithium |
| – | 46G3556 | AR | Filler, Full Card |
| – | 22F0059 | AR | Filler, 1/3 Card |
| – | 75G3352 | AR | Filler, 1/3 MFIOP |
| – | 64F4774 | AR | TRM1, Terminating Plug, Internal Tape SCSI |
| – | 87G4413 | AR | TRM2, Terminating Plug, Internal Disk SCSI |
| – | 8193219 | AR | Terminating Plug, SPD |
| – | 71G9988 | AR | Fax Coupler - US, Canada |
| – | 71G9991 | AR | Fax Coupler - France |
| – | 71G9993 | AR | Fax Coupler - UK |
| – | 71G9992 | AR | Fax Coupler - Germany |
| – | 71G9989 | AR | Fax Coupler - Japan |
| – | 71G9990 | AR | Fax Coupler - Italy |
| – | 72G0002 | AR | Fax Coupler - Spain |
| – | 71G9994 | AR | Fax Coupler - Sweden |
| – | 71G9208 | AR | Fax Coupler - Australia |
| – | 60F0707 | AR | Fax Coupler - Denmark |
| – | 71G9996 | AR | Fax Coupler - Hong Kong |
| – | 71G9997 | AR | Fax Coupler - Taiwan |
| – | 71G9998 | AR | Fax Coupler - Finland |
| – | 71G9999 | AR | Fax Coupler - Netherlands |
| – | 72G0000 | AR | Fax Coupler - Switzerland |
| – | 72G0001 | AR | Fax Coupler - Philippines |
| – | | | 1/4 INCH CARTRIDGE TAPES |
| – | 16G8572 | AR | Cleaning Cartridge (QIC-120 and QIC-525) |
| – | 46G2675 | AR | Cleaning Cartridge (QIC-1000) US and Canada Only |
| – | 8191177 | AR | Cleaning Cartridge (QIC-1000) |
| – | 21F8586 | AR | CE Test Tape 6080 (QIC-525) |

| Asm–<br>Index | Part<br>Number | Units | Description |
|---|---|---|---|
| 12– | 21F8734 | AR | CE Test Tape 1.2SL (QIC-1000) |
| – | 16G8438 | AR | CE Test Tape (QIC-2GB) |
| – | 46G0365 | 1 | Feature Unique Licenced Internal Code, FC 2010 |
| – | 46G0353 | 1 | Feature Unique Licenced Internal Code, FC 2030 |
| – | 46G0357 | 1 | Feature Unique Licenced Internal Code, FC 2031 |
| – | 46G0361 | 1 | Feature Unique Licenced Internal Code, FC 2032 |
| – | 46G0369 | 1 | Feature Unique Licenced Internal Code, FC 2100 |
| – | | | 1/2 INCH REEL TAPES |
| – | 46G0364 | 1 | Feature Unique Licenced Internal Code, FC 2010 |
| – | 46G0352 | 1 | Feature Unique Licenced Internal Code, FC 2030 |
| – | 46G0356 | 1 | Feature Unique Licenced Internal Code, FC 2031 |
| – | 46G0360 | 1 | Feature Unique Licenced Internal Code, FC 2032 |
| – | 46G0368 | 1 | Feature Unique Licenced Internal Code, FC 2100 |
| – | | | 8MM CARTRIDGE TAPES |
| – | 21F8593 | AR | Cleaning Cartridge |
| – | 21F8577 | AR | CE Test Tape |
| – | 46G0367 | 1 | Feature Unique Licenced Internal Code, FC 2010 |
| – | 46G0355 | 1 | Feature Unique Licenced Internal Code, FC 2030 |
| – | 46G0359 | 1 | Feature Unique Licenced Internal Code, FC 2031 |
| – | 46G0363 | 1 | Feature Unique Licenced Internal Code, FC 2032 |
| – | | | 1/2 INCH CARTRIDGE TAPES |
| – | 46G0366 | 1 | Feature Unique Licenced Internal Code, FC 2010 |
| – | 46G0354 | 1 | Feature Unique Licenced Internal Code, FC 2030 |
| – | 46G0358 | 1 | Feature Unique Licenced Internal Code, FC 2031 |
| – | 46G0362 | 1 | Feature Unique Licenced Internal Code, FC 2032 |

## Assembly 12: Miscellaneous

| Asm–Index | Part Number | Units | Description |
|---|---|---|---|
| 12– | 21F9354 | 1 | AA Card Wrap (T-pack) |
| – | 72X6365 | 1 | BB Card Wrap (Universal) |
| – | 74F1846 | 1 | CC Card Wrap (Enet) |
| – | 17G4124 | 1 | DD Card Wrap (SDDI) |
| – | 17G4138 | 1 | EE Card Wrap (Fax) |
| – | 17G4009 | 1 | FF Card Wrap (High Speed) |
| – | 92F9003 | 1 | GG Card Wrap (FDDI) |
| – | 23F5634 | 1 | HH Card Wrap (Crypto) |
| – | 6165899 | 1 | II Card Wrap (TRLAN) |
| – | 59X3832 | 1 | ASCII Cable Wrap |
| – | 56F0307 | 1 | ISDN Cable Wrap |
| – | 17G2641 | 1 | RS232 Cable Wrap |
| – | 17G2642 | 1 | ASYNC Cable Wrap |
| – | 17G2643 | 1 | RS366 Cable Wrap |
| – | 17G2644 | 1 | RS449 Cable Wrap |
| – | 17G2645 | 1 | V24 Cable Wrap |
| – | 17G2646 | 1 | X21 Cable Wrap |
| – | 17G4103 | 1 | X21HS Cable Wrap |
| – | 17G2647 | 1 | V35HS Cable Wrap |
| – | 17G2648 | 1 | V35 Cable Wrap |
| – | 16G8095 | 1 | Battery, 3 Volt Lithium |
| – | 46G3556 | AR | Filler, Full Card |
| – | 22F0059 | AR | Filler, 1/3 Card |
| – | 75G3352 | AR | Filler, 1/3 MFIOP |
| – | 64F4774 | AR | TERM1, Terminating Plug, Internal Tape SCSI |
| – | 87G4413 | AR | TERM2, Terminating Plug, Internal Disk SCSI (Expansion Unit) |
| – | 8193219 | AR | Terminating Plug, SPD |
| – | 71G9988 | AR | Fax Coupler - US, Canada |
| – | 71G9991 | AR | Fax Coupler - France |
| – | 71G9993 | AR | Fax Coupler - UK |
| – | 71G9992 | AR | Fax Coupler - Germany |
| – | 71G9989 | AR | Fax Coupler - Japan |
| – | 71G9990 | AR | Fax Coupler - Italy |
| – | 72G0002 | AR | Fax Coupler - Spain |
| – | 71G9994 | AR | Fax Coupler - Sweden |
| – | 71G9208 | AR | Fax Coupler - Australia |
| – | 60F0707 | AR | Fax Coupler - Denmark |
| – | 71G9996 | AR | Fax Coupler - Hong Kong |
| – | 71G9997 | AR | Fax Coupler - Taiwan |
| – | 71G9998 | AR | Fax Coupler - Finland |
| – | 71G9999 | AR | Fax Coupler - Netherlands |
| – | 72G0000 | AR | Fax Coupler - Switzerland |
| – | 72G0001 | AR | Fax Coupler - Philippines |
| – | | | 1/4 INCH CARTRIDGE TAPES |
| – | 16G8572 | AR | Cleaning Cartridge (QIC-120 and QIC-525) |
| – | 46G2675 | AR | Cleaning Cartridge (QIC-1000) US and Canada Only |
| – | 8191177 | AR | Cleaning Cartridge (QIC-1000) |
| – | 21F8586 | AR | CE Test Tape 6080 (QIC-525) |

| Asm–Index | Part Number | Units | Description |
|---|---|---|---|
| 12– | 21F8734 | AR | CE Test Tape 1.2SL (QIC-1000) |
| – | 16G8438 | AR | CE Test Tape (QIC-2GB) |
| – | 46G0365 | 1 | Feature Unique Licenced Internal Code, FC 2010 |
| – | 46G0353 | 1 | Feature Unique Licenced Internal Code, FC 2030 |
| – | 46G0357 | 1 | Feature Unique Licenced Internal Code, FC 2031 |
| – | 46G0361 | 1 | Feature Unique Licenced Internal Code, FC 2032 |
| – | 46G0369 | 1 | Feature Unique Licenced Internal Code, FC 2100 |
| – | | | 1/2 INCH REEL TAPES |
| – | 46G0364 | 1 | Feature Unique Licenced Internal Code, FC 2010 |
| – | 46G0352 | 1 | Feature Unique Licenced Internal Code, FC 2030 |
| – | 46G0356 | 1 | Feature Unique Licenced Internal Code, FC 2031 |
| – | 46G0360 | 1 | Feature Unique Licenced Internal Code, FC 2032 |
| – | 46G0368 | 1 | Feature Unique Licenced Internal Code, FC 2100 |
| – | | | 8MM CARTRIDGE TAPES |
| – | 21F8593 | AR | Cleaning Cartridge |
| – | 21F8577 | AR | CE Test Tape |
| – | 46G0367 | 1 | Feature Unique Licenced Internal Code, FC 2010 |
| – | 46G0355 | 1 | Feature Unique Licenced Internal Code, FC 2030 |
| – | 46G0359 | 1 | Feature Unique Licenced Internal Code, FC 2031 |
| – | 46G0363 | 1 | Feature Unique Licenced Internal Code, FC 2032 |
| – | | | 1/2 INCH CARTRIDGE TAPES |
| – | 46G0366 | 1 | Feature Unique Licenced Internal Code, FC 2010 |
| – | 46G0354 | 1 | Feature Unique Licenced Internal Code, FC 2030 |
| – | 46G0358 | 1 | Feature Unique Licenced Internal Code, FC 2031 |
| – | 46G0362 | 1 | Feature Unique Licenced Internal Code, FC 2032 |

# Appendix A. Working with Electrostatic Discharge-Sensitive Parts

When holding or installing electrostatic discharge-sensitive (ESD) parts, use the ESD handling kit (IBM* part 6428316) or similar. Read the instructions inside the top cover of the carrying case.

All system logic cards are sensitive to electrostatic discharge (ESD). To prevent damage to ESD-sensitive logic cards, follow these instructions:

- Switch off power to the system or device before removing logic cards.

- Keep the ESD-sensitive card in the original shipping container until you install the card in the machine.

- When holding logic cards, move your body as little as possible to prevent an increase of static electricity from clothing fibers, carpet fibers, and furniture.

- Just before touching the ESD-sensitive card, discharge any static electricity in your body by touching the metal frame or cover of the machine. If possible, keep one hand on the frame when, for example, you are installing or removing a logic card.

- Hold the ESD-sensitive card by the edge or connector shroud cover. Do not touch the pins. If you are removing a field-replaceable module, use the correct tool.

- Return the card to the special container when it is not being used. Do not place the ESD-sensitive card on the machine cover or on a metal table. Machine covers and metal tables are electrical grounds. They make a discharge path from the ESD-sensitive card through your body to ground, increasing the risk of damage to the card. Large metal objects can be discharge paths without being grounded.

- Prevent ESD-sensitive cards from being accidentally touched by other persons. Reinstall machine covers when you are not working on the machine. Do not place unprotected ESD-sensitive cards on a table.

- Be careful when working with ESD-sensitive cards during cold weather heating. Cold weather heating causes low humidity and increases the risk of static electricity.

# Appendix B.  Service Log

Machine Type and Serial Number:           -

| Date | Description of Problem/Action Taken (Do not record hours or part numbers.) | Service Representative |
|------|------------------------------------------------------------------------------|------------------------|
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| Date | Description of Problem/Action Taken (Do not record hours or part numbers.) | Service Representative |
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# Glossary

This glossary includes terms and definitions from:

- The *American National Dictionary for Information Systems*, ANSI X3.172-1990, copyright 1990 by the American National Standards Institute (ANSI). Copies may be purchased from the American National Standards Institute, 1430 Broadway, New York, New York 10018. Definitions are identified by the symbol (A) after the definition.

- The *Information Technology Vocabulary*, developed by Subcommittee 1, Joint Technical Committee 1, of the International Organization for Standardization and the International Electrotechnical Committee (ISO/IEC JTC1/SC1). Definitions of published parts of this vocabulary are identified by the symbol (I) after the definition; definitions taken from draft international standards, committee drafts, and working papers being developed by ISO/IEC JTC1/SC1 are identified by the symbol (T) after the definition, indicating that final agreement has not yet been reached among participating National Bodies of SC1.

**adapter card**.  A smaller card that attaches to a full-size card.

**allocate**.  To reserve a resource for use in performing a specific task.

**ASP**.  Auxiliary storage pool.

**checksum protection**.  A function that protects data stored in an auxiliary storage pool from being lost because of the failure of a single disk.  When checksum protection is in effect and a disk failure occurs, the system automatically reconstructs the data when the system program is loaded after the device is repaired.

**configure**.  To describe to a system the devices, optional features, and programs installed on the system.

**DASD**.  Direct access storage device.

**device parity protection**.  A function that protects data stored on a disk unit subsystem from being lost because of the failure of a single disk unit in the disk unit subsystem.  When a disk unit subsystem has device parity protection and one of the disk units in the subsystem fails, the system continues to run.  The disk unit subsystem reconstructs the data after the disk unit in the subsystem is repaired or replaced.

**DST**.  Dedicated service tools.

**ESD**.  Electrostatic discharge.

**FC**.  Feature code.

**FRU**.  Field replaceable unit.

**IPL**.  Initial program load.

**MFIOP**.  Multiple function input/output processor.

**mirrored protection**.  A function that protects data by duplicating all disk unit data on one storage unit in an auxiliary storage pool to another storage unit within the same auxiliary storage pool.

**PTF**.  Program temporary fix.

**SRC**.  System reference code.

**SST**.  System service tools.

**VLIC**.  Vertical licensed internal code.

# Bibliography

See the following Application System/400* (AS/400*) manuals for more information:

- *Backup and Recovery – Advanced*, SC41-3305
- *Local Device Configuration*, SC41-3121
- *AS/400 Service Functions*, SY44-3902
- *9402/9404 Models 2xx Problem Analysis*, SY44-3941
- *System Operation*, SC41-3203

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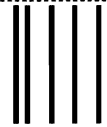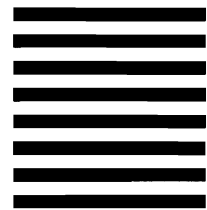
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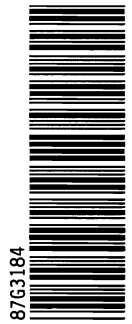
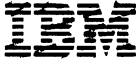Fold and Tape          **Please do not staple**          Fold and Tape

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| 4-9 to 4-12 | 4-21 to 4-22 |
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### Summary of Amendments

This Technical Newsletter contains revisions to text and graphics from the subject manual.

**Note:** Please file this cover letter at the back of the manual to provide a record of changes.

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