Transmittal Page

Product	Title	Part Number
6085 PCS	Xerox 6085 PCS Service Manual	700P05710
Status: SUPERSEDES		Date: October 1988

This document replaces 700P04160 and closes the following bulletin articles:

Article	Bulletin	Date
8K Control Store Microcode software installation	700P90898	11/88
Correction to RAP 9 of the 6085 PSM (700P04160)	700P90700	8/88
New MPB PWB & Control Store Chips	700P90764	9/88
Class B Announcement	700P90851	10/88
Class B Processor Base Configuration	700P90851	10/88
Class B Parts	700P90851	10/88
Finger Stock	700P90851	10/88
Cartridge Tape Drive Announcement	700P90898	11/88
MPB PWB & Control Store Chips: Correction to the September 1988 6085 Service Bulletin (700P90764)	700P90898	11/88
New 6085 PCS Service Manual Announcement	700P90898	11/88

Xerox 6085 PCS Service Manual

Xerox 6085 PCS Service Manual

XEROX

Xerox 6085 PCS

Service Manual

700P05710
October 1988

This manual includes the 6085 Professional Computer System and the 6085 Commercial Widebody System.

This manual supports Diagnostics Levels 1.5.2 and 2.0

This manual replaces any previous Xerox 6085 PCS Service Manuals.

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This publication could contain technical or typographical errors. Changes are periodically made to the information contained in this manual; these changes will be incorporated in new releases of this publication.

Revision Control List

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Notes:

Notes:

About This Manual

This manual is part of a multinational documentation system. This manual contains information that applies to:

- US Marketing Group (USO)
- Xerox of Canada Inc. (XCI)
- Rank Xerox (RX)
- Rank Xerox - Australia (RXAus)

USO references always apply to XCI, unless an XCI difference is specifically noted.

This manual contains service call procedures, diagnostic procedures, general information, status indicator repair analysis procedures, repair procedures, wiring data, and parts list information that will enable a Service Representative to repair the 6085 PCS faults.

Organization

This manual contains the following information.

Front Matter

Front Matter includes the transmittal page, the title page, the revision control list, and the manual contents.

Introduction

The Introduction section contains the topics *About This Manual*, *Organization*, *How to Use This Manual*, and *Symbology*.

The remainder of this manual is divided into eight sections. Six sections are used at this time.

Section 1 Service Call Procedures.

This section contains the following information:

- Call Flow Diagram

  The call flow diagram is a map of the service procedures to be performed on each service call.

- Initial Actions

  The Initial Actions identify how to collect the necessary data for proceeding with the service call.

- System Checks

  The System Checks procedure classifies the problem and references the appropriate Repair Analysis Procedure.

- Final Actions

  The Final Actions procedure is used to verify that the system is operating properly after the repair has been made. It also lists the steps that must be performed before completing the service call.

Section 2 Status Indicator Repair Analysis Procedures

The section provides Repair Analysis Procedures (RAPs) and Diagnostic routines used to isolate problems to a Field Replaceable Unit (FRU) level.

Section 3 Image Quality Repair Analysis Procedures

This section does not apply to this product.

Section 4 Repair/Adjustment Procedures

This section contains the removal, replacement, and adjustment procedures for the 6085 PCS.

Section 5 Parts List

This section contains the detailed parts lists for the 6085 PCS.

Section 6 General Procedures/Information

This section contains General Information, Installation Procedures, and the Principles of Operation.

Section 7 Wiring Data

This section contains test point, wirenet, and/or plug/jack location diagrams.

Section 8 Accessories/Options

This section does not apply to this product.

Back Matter

Back Matter contains the Comment Sheet.

How To Use This Manual

Always start with the Service Call Procedures, Section 1. Perform Initial Actions to verify the problem. Initial Actions directs the Service Representative to perform the System Checks.

System Checks directs the Service Representative to the Repair Analysis Procedures, Section 2, to isolate and correct the problem.

Section 2 may direct the Service Representative to Section 4 Repair, or to Section 5, Parts List.

Repair Analysis Procedures (RAPs)

A RAP is a series of steps that identifies the cause of a problem. Each step has you perform an action or observe an occurrence and then answer Yes or No to a statement about the condition of the 6085 PCS.

If the answer to the statement is Yes, continue to the next step in the procedure. If the answer to the statement is No, the appropriate action will be printed to the right.

When several items are listed, perform them in the order listed. Proceed through the steps only until the problem is solved. There is no need to continue with the RAP after the problem is corrected.

Service Manual Revisions

There are two types of revisions to the manual: Complete Reprints and Partial Revisions. A Complete Reprint is identified by a new part number that ends in "0." A Partial Revision is identified by the current part number incremented by one. (For example, the first revision to manual 700P05710 will be numbered 700P05711, the second revision will be numbered 700P05712, and so forth.)

A publication date (at the bottom center of the page) is placed on each page in the manual. Pages that contain changes are labeled with the appropriate revision date. Areas that are new or changed are identified on each new revision page. The methods used to mark the changes on each page are:

- Text: black vertical bars surround the changed information.
- Changed or new figures and tables: black vertical bars surround the title name of the figure or table.
- If the same page is changed by a later revision, the publication date will be removed and a later one added to identify the new information.
- A new title page with a revision control list on it will be sent with each revision package. This list will contain the page number of each page in the manual including each changed or added page along with the revision issue date of the page. Pages listed with the original publication date are the original pages.

Comment Sheets

Service Representatives can assist in creating accurate service documentation by identifying errors or improvements. This information can be sent to Service Education on a Comment Sheet, located on the last page of this manual. The Comment Sheet provides instructions for completion.

Symbology

The symbols used in this Service Manual are defined below.

Change Tag/MOD Symbols:

Entire area affected by Tag/MOD number in symbol

Specific part or selection affected by Tag/MOD number in symbol

Entire area not affected by Tag/MOD number in symbol

Specific part or section not affected by Tag/MOD number in symbol

The Tag/MOD symbols appear on the exploded view illustrations in Section 5. The number within the symbol matches the Tag/MOD number identified in the Tag/MOD Index in Section 6.

Repair Procedure Symbols:

Removal and Replacement

Adjustment

Removal, Replacement and Adjustment

The repair procedure symbols appear on exploded view illustrations in Section 5, located near the applicable item number on the drawing. The number within the symbol matches the number of the repair procedure provided in Section 4.

Section Contents

1.1 Introduction

The Service Call Procedures are used to verify the overall operation of the 6085 Professional Computer System.

Perform all checks in the given order. If the System Check and/or Repair Analysis Procedures (RAPs) do not lead you to the resolution of the problem, follow your local District policy for obtaining assistance.

Look for any obvious fault (such as loose connectors, foreign objects, etc.) before removing a part that is suspected to be faulty.

Perform the System Checks and Final Actions to verify the repair after completing each corrective action (replacing or adjusting a part, reseating a connector, etc.). If necessary, reconnect connectors and/or reinstall parts removed during fault isolation.

Reinstall any good parts that may have been removed during fault isolation after the repair is verified.

1.2 Call Flow Diagram

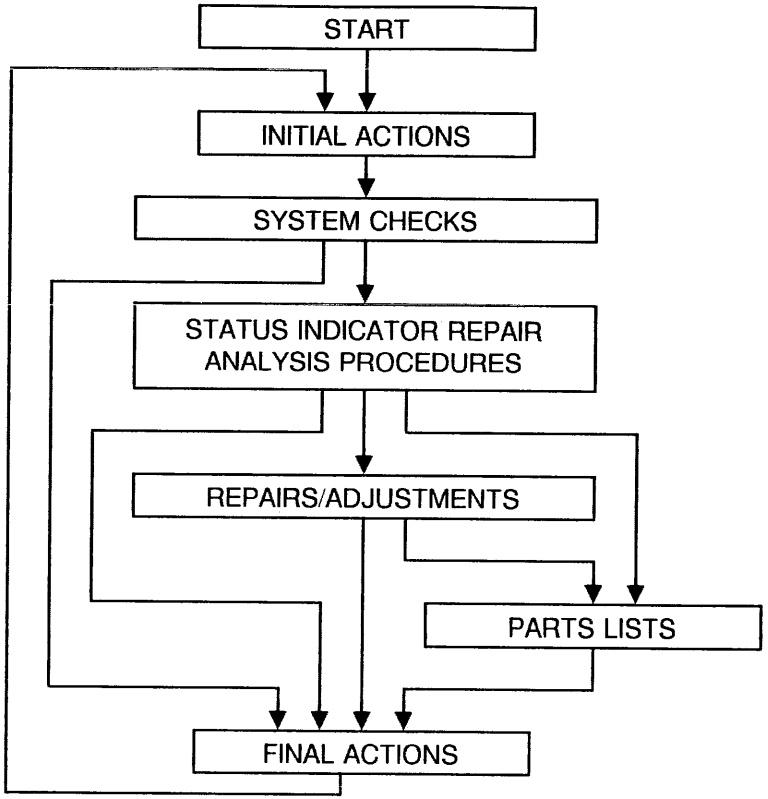


Figure 1. Call Flow Diagram

1.3 Initial Actions

NOTE: Perform the Seek Safe Landing Zone procedure (REP 4.26) before moving the processor.

1. Ask the operator about the symptoms of the fault and make a note of any status codes or problem descriptions. (This information may aid you in diagnosing the problem in the case of intermittent or unusual machine faults.)
2. Check for an obvious problem (loose connections, broken part), and repair (Section 4).
3. Check that the display, keyboard, power cord, and if applicable, the floppy disk drive and the Ethernet connectors are secure.
4. If multiple workstations have the same problem, the fault may be with the network or with a server. Follow your local District procedures to turn the call over to a service rep trained on these systems.

NOTE: Some of the screen displays shown in this section are samples which represent only one machine configuration. During System Check your machine may display different information depending on the hardware installed (such as memory size, rigid disk size, type of display, etc.) and software configuration.

1.4 System Checks.

NOTE: If the workstation does not have a Removable Rigid Drive (RRD), switch on the power and proceed to step 4.

1. The RRD Compartment is unlocked and can be opened and closed when power is off.

   Y N

   | Go to RAP 17.

2. Close the RRD Compartment and switch on the power.

CAUTION

Never switch on the processor power when the Removable Rigid Drive Compartment is open. When the compartment is open, it is possible to remove the rigid drive. Removing the rigid drive when power is on will cause the heads to retract as data is being written to the drive. There is no recovery procedure for this type of data loss.

3. The RRD Compartment is closed and locked when power is on.

   Y N

   | Go to RAP 17.

4. Power Normal Indicator (green light) is on.

   Y N

   | Go to RAP 1.

NOTE: The illumination of the green light does not ensure that all voltages are within specification. If the workstation will not boot, or if the machine displays a [0912] code after you press ***<F2>*** *in Step 12, proceed to RAP 1, step 4.*

5. The processor fans blow air out of the processor.

   Y N

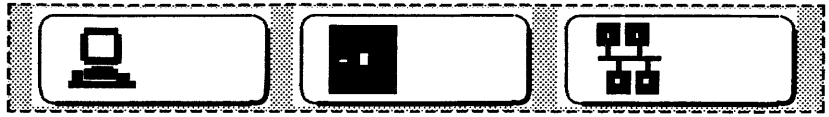
   | Go to RAP 2.

6. Press the B Reset button to start Pre-Boot Diagnostics and observe the three red Pre-Boot Indicators. Within 10 seconds and after having cycled through a sequence of on and off combinations, all three of the Pre-Boot Indicators are off.

   Y N

   | Go to RAP 3.

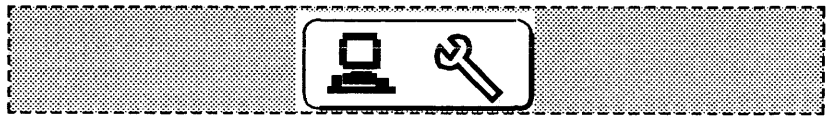
7. The Boot Softkeys are displayed.



   Y N

   | Go to RAP 11.

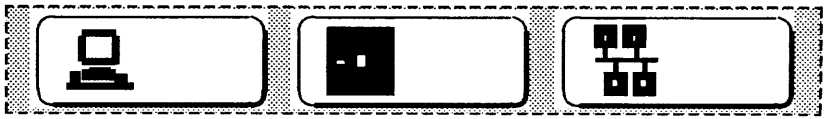
8. Press Function Key **<F5>** to initiate Workstation Boot Diagnostics. The Workstation Boot Diagnostics Softkey is highlighted when **<F5>** is pressed.



   Y N

   | Go to RAP 10.

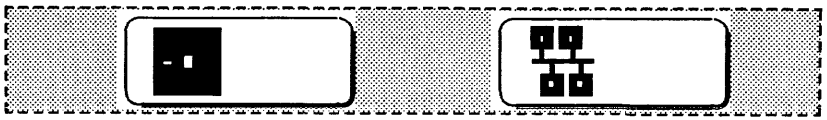
9. The Boot Diagnostics complete successfully by running through the test sequence and displaying the Boot Softkeys after completion.



   Y N

   | Go to RAP 4.

10. If the system has a Floppy Disk Drive, insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive, press Function Key **<F2>** for Floppy Boot, then follow the displayed instructions for inserting the next disk. For systems without a floppy drive, press the Ethernet Boot Function Key **<F3>** and select Off-Line Diagnostics when the Network Executive menu appears. If the Network Executive does not appear, proceed to RAP 6.



Floppy Boot Softkey Ethernet Boot Softkey

11. Off-Line Diagnostics loads successfully (Logon Menu appears on the screen).

    Y N

    | Go to step 19.

12. From the Logon Menu, select **Normal User** and then from the Available Selections menu, select the **Rigid Disk Tests**. System proceeds to the Rigid Disk Tests menu.

    Y N

    | If the System failed at 0935, go to the RAP 9 procedure titled "Repair a Damaged Logical Volume Root Page." Otherwise, go to RAP 5.

13. In the Rigid Disk Tests menu, select **Confidence Test**.

14. The Confidence Test passes.

    Y N

    | Go to RAP 9.

15. A known problem still exists.

    Y N

    | Go to Final Actions.

16. The reported problem with the workstation is related to:

Ethernet	Go to **RAP 6**
Floppy Disk	Go to **RAP 7**
RS232C	Go to **RAP 8**
Keyboard/Mouse/Beeper	Go to **RAP 10**
Display	Go to **RAP 11**
4045 Laser CP	Go to **RAP 16**
Interlock Solenoid	Go to **RAP 17**
Cartridge Tape Drive	Go to **RAP 18**
7650 Pro Imager	**7650 Service Manual**

17. If an unresolved machine problem still exists, perform System Check a second time with the Long Boot Diagnostic option by pressing the Boot Diagnostics Function Key **<F5>** twice.

NOTE: If a printer and/or a scanner is connected to the 6085, switch on the system power for each unit so that the Long Boot Diagnostics can complete successfully.

18. If, after running System Check twice, an unresolved machine problem still leads to this step, call for assistance.

19. The Off-Line Diagnostics stops on a Cursor Error Code when loading.

    Y N

    | Go to step 16.

20. Go to RAP 4.

1.5 Final Actions

1. Reinstall any parts which were removed during troubleshooting that were not the cause of the problem.
2. Perform the System Check (1.4) to verify that the machine is operating correctly.
3. Replace any covers removed during the service call.
4. Clean the equipment panels and restore order to the customer work area.
5. Review with the customer any operator training points that may help avoid future calls.
6. Complete all required administrative tasks.

2. Status Indicator Repair Analysis Procedures

Section Contents

RAP 1 No Green Light

1. Switch off the power, wait at least two minutes, then switch on the power. (If the green light is still inoperative, and if the power supply is P/N 105K00230, switch off the power for a full five minutes. Switch on the system power.) The green light is still inoperative.

   Y N

   | Go to Final Actions

2. Check for other voltage indications by performing the following procedures:

   a. Press the B Reset button and observe the three red Pre-Boot indicators.
   b. With power switched ON, check for air being blown out of the processor by the cooling fans.

3. Internal voltage is indicated (at least one Pre-Boot indicator is lit and/or air is being blown out of the processor).

   Y N

   | Go to step 11

4. Check the DC voltages for the following specifications (Figure 1):

   +5 VDC = +5.15 to +5.25 VDC
   –5.2 VDC = –5.05 to –5.35 VDC
   +12VDC = +11.83 to +12.57 VDC
   –12VDC = –11.64 to –12.36 VDC

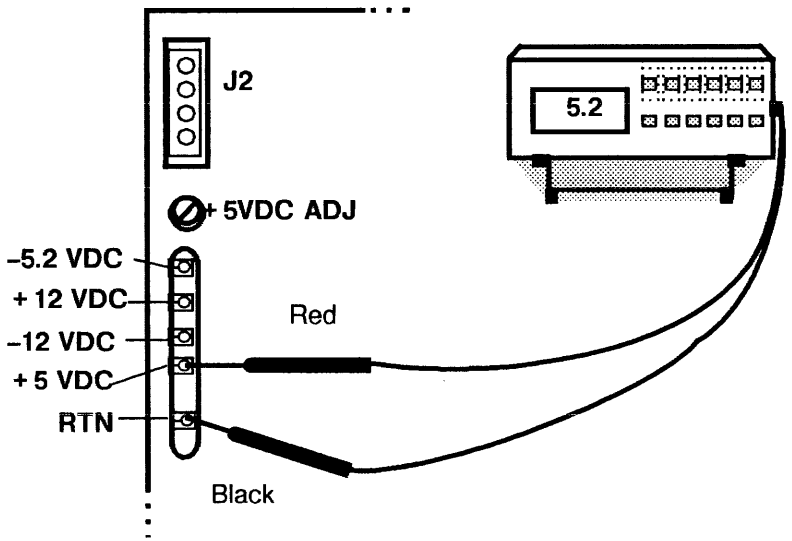


Figure 1. DC Voltage Check

5. One or more of the above voltages is out of acceptable range.

   Y N

   | Go to step 9

NOTE: To ensure accurate results in the following procedure, there must be sufficient electrical loading of the Power Supply. This is accomplished by having at least one PWB connected to the backplane at all times. As each PWB is disconnected, it should be reconnected before the next suspect PWB is disconnected.

CAUTION

To prevent damaging the components, switch power off when disconnecting or reconnecting any components.

6. Unplug the PWBs, the Rigid Disk Drive, the Fan Assembly, and the Floppy Disk Drive connectors one at a time and recheck the DC voltages. The voltage(s) return to within acceptable range.

   Y N

   | Go to step 8

7. Replace the component(s) that caused the voltage drop. Proceed to Final Actions

8. Perform the Repair procedures in the +5VDC Check (Repair 4.9). +5VDC is within acceptable range.

   Y N

   | Go to step 10

9. Switch off the power, wait at least two minutes, then switch on the power. (If the green light is still inoperative, and if the power supply is P/N 105K00230, switch the power off for five full minutes. Switch on the power.) The green light is still inoperative.

   Y N

   | Go to Final Actions

10. Replace the Power Supply (4.8). If the problem still remains, call for assistance.

11. Check the Power Supply fuse (PL 5.1). The fuse is open.

    Y N

    | Go to step 13

12. Replace the fuse and then return to step 3. If the fuse opens again, call for assistance.

13. Measure and verify the voltage at the wall receptacle (USO Figure 2, RX Figure 2A) by performing the following procedures.

    a. Switch off the processor power and disconnect the AC power cord from the wall receptacle.
    b. Select the appropriate AC scale on the multimeter and check for the following voltages:

    USO Only: Voltage at the wall receptacle is 103 to 127 VAC between ACH and ACN, and between ACH and GND. Voltage is also less than 3 VAC between GND and ACN (Figure 2).

    RX Only: Voltage at the wall receptacle is 207 to 253 VAC between live and neutral, and between live and earth. Voltage is also less than 3 VAC between earth and neutral (Figure 2A).

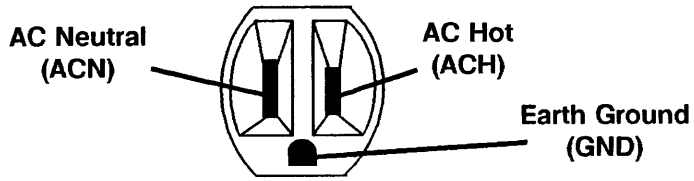


Figure 2. AC Voltage Check

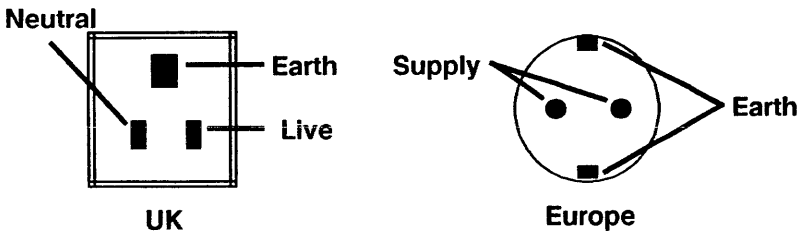


Figure 2A. AC Voltage Check (RX)

CAUTION

If any of the voltage measurements are not as specified, the cause must be corrected. Caution the customer not to connect the equipment to the wall receptacle, and advise that a qualified electrician must correct the wiring. Do not attempt to make the correction. If you later find the condition has not been corrected, inform your manager in writing of the improper wiring.

14. Voltage at the wall receptacle is correct.

    Y N

    | Notify customer of power needs.

15. Check the power cord for continuity. The power cord has continuity.

    Y N

    | Replace the power cord (PL 5.2)

16. Replace the Power Supply (4.8). If the problem still remains, call for assistance.

RAP 2 Processor Fans Checkout

1. Observe fan operation.
   a. Remove the Rigid Disk Drive (4.10) and the PWB in position C2 (second PWB slot from the left) so that all three of the fans can be observed.
   b. Switch on the system power.
   c. Using a flashlight, inspect all three fans for normal speed of rotation.
2. All the fans rotate properly.

   Y N

   | Go to step 4.
3. Go to Final Actions.
4. Only one or two fans rotate.

   Y N

   | Go to step 6.
5. Replace the Fan Assy. (4.4)
6. Check for +11.83 to +12.57 VDC at the fan connector.
   a. Remove the Fan Assembly from the machine. Locate the Fan Assembly plug/jack (J1). (It is visible through the Rigid Disk Drive cavity in the processor.)
   b. Select the 20V DC scale on the multimeter (600T1616).
   c. Reach in through the Rigid Disk Drive cavity and connect the meter leads to the backplane connector (J12) to check for +11.83 to +12.57 VDC (Figure 3). If no voltage is read, call for assistance. If the reading is good, then make the check at the fan assembly connector (J1).
   d. If the reading at the fan assembly connector is good, replace the Fan Assembly (4.4).
   e. If no voltage is read, check that the cable between the backplane and the fan assembly connector is properly seated. If reseating the connection doesn't solve the problem, call for assistance.

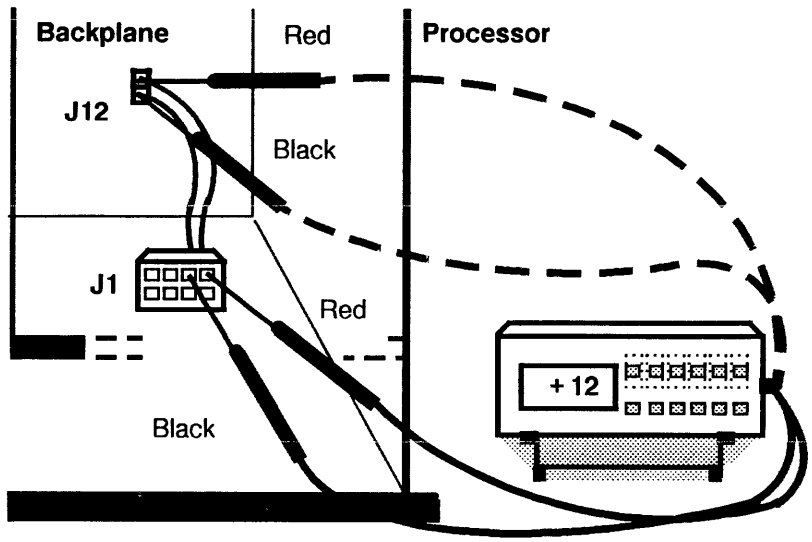


Figure 3. Fan Connector and Backplane

RAP 3 Pre-Boot Failure

NOTE: At the beginning of the Pre-Boot Diagnostics sequence, all three indicators will be on briefly to test the ability of the LEDs to light. The Pre-Boot Diagnostic Test sequence is shown in the indicators in Table 1 from the top (all LEDs on) down. If necessary to observe the Pre-Boot Indicators again, rerun Pre-Boot Diagnostics by pressing the B Reset button.

1. All three of the Pre-Boot Indicators are lit at the beginning of the Pre-Boot Diagnostics sequence.

   Y N

   | Go to step 3.

2. Refer to the Table 1 for indicator status and replace the components, as necessary, in the sequence given.
3. Replace the IOP (4.12). If problem is still not fixed, then replace the Power Supply (4.8). If problem is still not fixed, call for assistance.

Table 1
Pre-Boot Failure Indicators / Repair Analysis

Indicators*	Component(s) to replace
■ ■ ■	(Not a failure status)
■ ■ □	IOP (4.12)
■ □ ■	IOP (4.12)
■ □ □	Keyboard, IOP (4.12)
□ ■ ■	Keyboard, IOP (4.12)
□ ■ □	IOP (4.12)
□ □ ■	IOP, Host ID PROM (4.12)

* ■ = Indicator On, □ = Indicator Off

RAP 4 Boot Diagnostics Failure

1. The Boot Diagnostics sequence stopped on a Cursor Code. (Call for assistance if you keep returning to this step.)

   Y N

   | Go to step 4.

*NOTE: Pressing **<M>** moves the cursor box.*

2. All Cursor Code digits are visible.

   Y N

   | Go to RAP 11.

3. Go to RAP 12.
4. Press the B Reset button. After the Boot Softkeys are displayed, run either the Floppy or the Ethernet Boot Diagnostics. **Floppy:** Insert the Off-Line Diagnostics Boot Diagnostics Disk into the floppy disk drive and press the Boot Diagnostics Function Key **<F6>**. **Ethernet:** Press Function Key **<F7>**.
5. The Boot Diagnostics complete successfully by running through the test sequence and displaying the Boot Softkeys after completion.

   Y N

   | Go to step 1.

6. Go to RAP 9.

RAP 5 System Time Required

NOTE: Perform Procedure 6.16.1 to set the time after running File Check on a Remote or Standalone 6085.

1. The system is normally connected to an Ethernet.

   Y N

   | Go to step 3.

NOTE: The following step does not require a thorough troubleshooting of an Ethernet problem at this time.

2. Make a physical check and correct any apparent problem with the local Ethernet connection to the processor. Rerun the Off-Line Diagnostic to verify any correction. System Time is still required.

   Y N

   | Return to the procedure that directed you to this RAP.

3. Enter the time using the following procedures:

   a. Press **<Return>** to accept each of the Daylight Savings Days.
   b. Enter the appropriate Time Offset from Greenwich for your time zone (example, –5 for Eastern, –8 for Pacific, etc.).
   c. Press **<Return>** to accept the "0" minutes Offset from Greenwich.
   d. Enter the correct year, month, and day, then accept the complete date when correct.
   e. Enter the correct hour, minute, and second, then accept the complete date and time when correct.

4. System Time is satisfied.

   Y N

   | Call for assistance.

5. Return to the procedure that directed you to this RAP.

RAP 6 Ethernet Checkout

1. Press the B Reset button. After the Boot Softkeys are displayed, load either the Floppy or Ethernet Off-Line Diagnostics. **Floppy:** Insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive, press **<F2>**, and then follow the on-screen instructions for inserting the next disk. **Ethernet:** Press **<F3>** and select Off-Line Diagnostics when the Network Executive appears. If unable to get the Network Executive or load the Off-Line Ethernet Diagnostics, go to step 7.

NOTE: The On-Line Diagnostics Echo Test can be used as a substitute for the Off-Line Ethernet Diagnostics procedures.

2. From the Logon Menu, select User, and then from the Available Selections menu, select the Ethernet Tests. System proceeds to the Ethernet Tests menu.

   Y N

   | Go to RAP 5.

3. From the Ethernet Diagnostic menu, select Echo Test. Finally, from the Echo Test menu select Start Test.

*NOTE: To change the Echo test properties in Off-Line Diagnostics, log on at the Technical Support level with the password **rexifsn**.*

4. The Echo Test begins successfully (without "Unreached EchoBack Packet" message).

   Y N

   | Go to step 7.

5. Let the test run 15 to 30 seconds, then press **<STOP>** to stop the Echo test. Observe the bottom line of test results ("Percentage packets transmitted that were received correctly ="). The percentage is 98% or better.

   Y N

   | Go to step 7.

6. Ethernet operation of the workstation has just been verified operational. Go to Final Actions.

7. Run the Ethernet Loopback Test at the IOP PWB by following these procedures:

   a. Disconnect the drop cable from the E-Net port on the IOP PWB and connect the Universal Loopback Tool (Ethernet Loopback board only) to that port on the IOP PWB.
   b. Press the B Reset button and when the Softkeys appear, press **<F5>**.
   c. When the cursor box is at the top middle of the display, press **<STOP>** to prepare the system for test sequence entry.
   d. With the Cursor Code at **[XX99]**, press **<F>** and then **<E>** to boot the Ethernet test File.
   e. With the Cursor Code at **[OD99]**, press **<S>** and then **<4>** to Specify Test Option 4, which is the External Ethernet test. Press **<Return>** to begin the test.

8. The test completes successfully by stopping at Cursor Code **[OD99]**.

   Y N

   | Replace the IOP PWB.

9. The transceiver is accessible without using a ladder.

   Y N

   | Locate the Ethernet Ladder (1P80714), or other Xerox approved ladder, and perform step 12 only to the transceiver within reach of the ceiling opening. Inform the customer that a contractor must support the unreachable portion of the network.

10. Run the Ethernet Loopback Test through the drop cable by following these procedures:

    a. Reconnect the drop cable to E-Net port on the IOP PWB. Disconnect the drop cable from the transceiver and connect the Universal Loopback Tool (Ethernet Loopback) to that end of the Ethernet cable.
    b. With the Cursor Code at **[OD99]**, press **<I>** to rerun the (In memory) test, which is presently the External Ethernet test option 4.

11. The test ends with the Cursor Code **[OD99]**.

    Y N

    | Replace the drop cable. Refer to the Ethernet Service Manual, Chapter 3.

12. Run the Ethernet Loopback Test through the transceiver by following these procedures:

For Version 1 and Version 2 Tap Block/Transceiver

   a. Remove the transceiver from the Ethernet tap block and remove the O-ring seal from the "stinger" end of the transceiver (Figure 4). Connect the Transceiver Terminator Tool (600T1706) to the "stinger" end of the transceiver and reconnect the drop cable to the transceiver.
   b. With the Cursor Code at **[OD99]**, press **<I>** to rerun the (In memory) test, which is presently the External Ethernet test option 4.

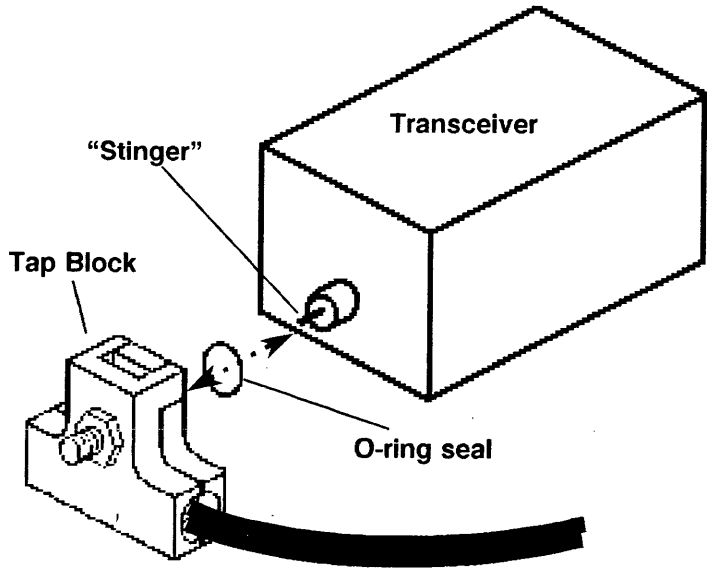


Figure 4. Transceiver and Tap Block Assembly

For IEEE 802.3 Tap Block/Transceiver

a. Remove the transceiver from the Ethernet tap block. Make a transceiver terminator tool (Figure 5), consisting of two BNC terminators (113P03405) and a BNC tap block (113K00470). Connect the transceiver terminator tool to the transceiver and reconnect the drop cable to the transceiver.
b. With the Cursor Code at **[OD99]**, press **<i>** to rerun the (in memory) test, which is presently the External Ethernet test option 4.

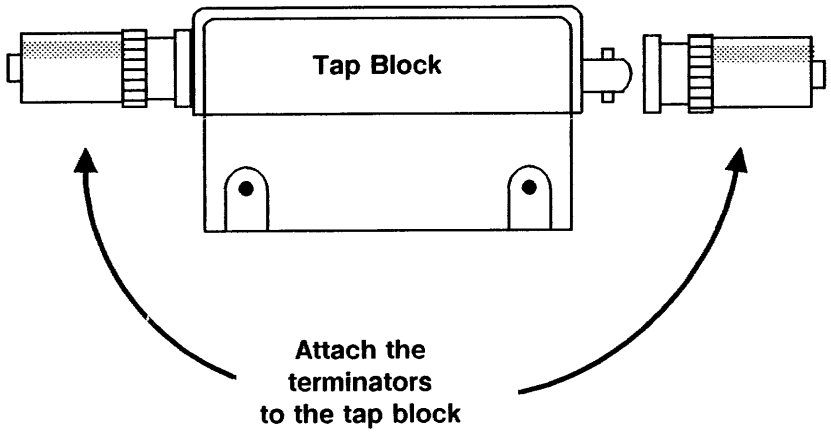


Figure 5. Transceiver Terminator Tool - IEEE 802.3

13. The test ends with the Cursor Code **[OD99]**.

    Y N

    | Replace the transceiver. Refer to the Ethernet Service Manual, Chapter 3.

14. Remove the transceiver terminator tool. Reconnect the transceiver to the Ethernet and the drop cable to the transceiver. (For Version 1 transceivers, ensure that the O-ring seal is reinstalled.) Run the Echo Test again by performing the procedures in steps 1 through 3, then return to the following step.

15. The Echo Test begins successfully (without "Unreached EchoBack Packet" message).

    Y N

    | Go to step 18.

16. Let the test run 15 to 30 seconds, then press **<STOP>**. Observe the bottom line of test results ("Percentage packets transmitted that were received correctly = "). The percentage is 98% or better.

    Y N

    | Go to step 18.

17. The Ethernet operation of the workstation has just been verified operational. Go to Final Actions.

18. The Ethernet problem is beyond the transceiver. Refer to the Ethernet Service Manual, Chapter 6, or follow local District policy to resolve the problem.

RAP 7 Floppy Disk Drive Checkout

NOTE: If necessary, the On-Line Diagnostics Floppy Tests can be used as a substitute for the Off-Line Floppy Tests.

1. Perform the Clean Floppy Heads procedure. If unable to run the floppy drive, go to step 2.

   If the Ethernet connection is available:

   a. Press B Reset button. After the Boot Softkeys are displayed, press the Ethernet Boot **<F3>** and select Off-Line Diagnostics when the Network Executive appears.
   b. From the Logon Menu - select **User**, from the Available Selections menu - select the **Floppy Disk Tests**, and then from the Floppy Diagnostics menu - select **Clean Floppy Heads** and follow the on-screen instructions using a head cleaning diskette from the $5\frac{1}{4}$ Inch Floppy Drive Head Cleaning Kit (73P80439).
   c. Let the floppy drive run for 15 seconds, then press the Reset button to stop the cleaning process. Remove the head cleaning diskette and go to step 2.

   If Off-Line Diagnostics are not available:

   a. Prepare and insert a head cleaning diskette from the $5\frac{1}{4}$ Inch Floppy Drive Head Cleaning Kit (73P80439).
   b. Run the floppy drive by pressing the Floppy Boot Function Key **<F2>**. Let the floppy drive run for 15 seconds, then press the B Reset button to stop the cleaning process. Remove the head cleaning diskette and go to step 2.

2. If a Cursor Repair Code led to this RAP, go to step 7. If a Cursor Repair Code did not lead to this RAP, go to step 3.

3. Run the Floppy Format/Write/Read Test by following these procedures:

CAUTION

The following test is destructive to the data on the floppy disk.

   a. Insert a blank floppy diskette that is not write-protected into the floppy disk drive.
   b. Press the B Reset button and when the Softkeys appear, press **<F5>**.
   c. When the cursor box is in the middle of the display, press **<STOP>** to prepare the system for test sequence entry.
   d. With the Cursor Code at **[XX99]**, press **<F>** and then **<F>** again to boot the Floppy test File.
   e. With the Cursor Code at **[OE99]**, press **<S>** and then **<F>** to Specify Test Option F, which is the Format/Write/Read test option. Press **<Return>** to begin the test.

4. In approximately 2 minutes the test completes successfully by stopping at Cursor Code **[OE99]**.

   Y N

   | Go to RAP 12.

5. The floppy disk drive has just been verified operational. A problem still exists.

   Y N

   | Go to Final Actions.

6. If the problem still occurs when only a specific customer floppy is used, inform the customer that the floppy is likely damaged. If the problem occurs with several customer floppies, call for assistance.

7. From the Floppy Diagnostics menu, run the Standard test of the floppy system. The test passes.

   Y N

   | Replace the Floppy Disk Drive

8. The floppy disk drive has just been verified operational. A problem still exists.

   Y N

   | Go to Final Actions.

9. If the problem still occurs when only a specific customer floppy is used, inform the customer that the floppy is likely damaged. If the problem occurs with several customer floppies, call for assistance.

RAP 8 RS232C Checkout

NOTE: If necessary, the On-Line Diagnostics RS232C Test can be used as a substitute for the Boot Diagnostics RS232C Test.

1. Run the RS232C Loopback Test by following these procedures:
   a. Disconnect the RS232C interface cable to be tested from the device (printer or modem) and connect the Universal Loopback Tool (use only the 8000 RS232C board for a modem or the 8000 Terminal Port board for a printer) to the end of the cable.
   b. Press the B Reset button and when the Softkeys appear, press **<F5>**.
   c. When the cursor box is in the middle of the display, press **<STOP>** to prepare the system for test sequence entry.
   d. With the Cursor Code at **[XX99]**, press **<F>** and then **<R>** to boot the RS232C test File.
   e. With the Cursor Code at **[OF99]**, press **<S>** and then **<5>** (DTE) or **<6>** (DCE) to Specify the appropriate loopback tool test option. Press **<Return>** to begin the test.
2. The test completes successfully by stopping at Cursor Code **[OF99]**.

   Y N

   | Go to step 5.
3. The RS232C Comm operation has just been verified operational up through the RS232C cable. The RS232C is normally connected to a printer.

   Y N

   | Go to step 9.
4. Notify the customer that the problem is with the printer. If the printer is under a Xerox FSMA, call for service or, if qualified, perform appropriate service on it.
5. Disconnect the RS232C cable from the suspect DCE or DTE port on the IOP PWB and connect the Universal Loopback Tool (use only the 8000 RS232C board for a modem or the 8000 Terminal Port board for a printer) to the port on the PWB.
6. With the Cursor Code at **[OF99]**, press **<I>** to rerun the appropriate loopback tool test option. Press **<Return>** to begin the test.
7. The test completes successfully by stopping at Cursor Code **[OF99]**.

   Y N

   | Replace the IOP PWB (4.12).
8. Inform the customer to replace the RS232C cable.
9. If the RS232C operation must be tested beyond the RS232C cable, follow your local District policy to turn the call over to a service rep trained on data communications.

RAP 9 Rigid Disk Drive Recovery

NOTE: Ensure that the customer has 1) performed a User Area backup if possible, 2) run Diagnostics to validate the hardware and check for new bad pages, and 3) been notified of the consequences of these recovery procedures and has given their approval for you to proceed. (These procedures may allow you to recover all the data on the disk. However, depending on the exact problem encountered, there is the possibility that all the data on the disk will be lost.)

CAUTION

Before attempting to recover data from a rigid disk, notify the customer of the consequences of these recovery procedures. Upon obtaining the customer's approval, you must validate the hardware. Failure to do this will result in creating more problems and probably eliminate any chance of recovering the data.

NOTE: It is the Service Representative's responsibility to verify the hardware operation and ensure that the customer has a working system. This includes loading the Basic Workstation Software to the bouncing keyboard and data recovery procedures to minimize downtime.

NOTE: If a Cursor Code of 0100 to 0201 led to this procedure, begin with step 5.

1. Press the B Reset button. After the Softkeys appear, load Boot Diagnostics from Floppy or Ethernet. **Floppy:** Insert the Off-Line Diagnostics Boot Diagnostics Disk into the floppy disk drive and press **<F6>** twice. **Ethernet:** Press **<F7>** twice.
2. The Boot Diagnostics sequence stopped on a Cursor Code.

   Y N

   | Go to step 5.

*NOTE: Pressing **<M>** moves the cursor box.*

3. All Cursor Code digits are visible.

   Y N

   | Go to RAP 11.

4. Go to RAP 12.
5. Press the B Reset button. After the Boot Softkeys are displayed, load either the Floppy or Ethernet Off-Line Diagnostics. **Floppy:** Insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive, press **<F2>**, and then follow the on-screen instructions for inserting the Workstation Diagnostics Disk. **Ethernet:** Press **<F3>** and select Off-Line Diagnostics when the Network Executive appears.
6. From the Logon Menu, select **Technical Support** and logon with the password **rexifsn**. From the Available Selections menu, select the **Rigid Disk Tests**. The system proceeds to the Rigid Disk Tests menu.

   Y N

   | Go to RAP 5.

7. From the Test Selections menu, select and run the **Confidence Test** for four passes.

NOTE: If unable to enter the Confidence Test, proceed to "Repair a Damaged Logical Volume Root Page" and perform the "c" series of steps.

8. The Confidence Test passed.

   Y N

   | Go to step 12.

9. Press **<Stop>** to return to the Rigid Disk Tests Menu. From the Test Selections menu, select/run **Verify Disk Surface**. Note the hard and soft errors. Surface verification completed.

   Y N

   | Go to step 12. If, after replacing the IOP PWB, there are hard and soft errors, go to step 17.

10. Boot the system software from the Rigid Disk by pressing Function Key **<F1>**. After approximately 12 minutes, the bouncing keyboard is displayed.

    Y N

    | Call for assistance.

11. The system is working. Go to Final Actions.

12. Follow the procedure for the applicable Rigid Disk Failure Code below, then continue with step 13.

NOTE: If a Rigid Disk Failure Code repeats after the appropriate repair procedures have been performed, verify the information in the System Configuration (6-10).

Code	Procedure
1	Replace the IOP PWB (4.12)
2	Replace the IOP PWB (4.12)
3	Replace the IOP PWB (4.12)
4	Perform Steps 17-24. When you get to Step 23, accept the 1-Test option. Depending on the page location, perform the appropriate recovery procedure.
5	N/A
6	Check the System Configuration Utility (6.10). Run Extended Boot Diagnostics, and then run Physical Volume Scavenger.
7	Replace the MPB PWB (4.16)
8	(Real Time Clock error.) If the system is attached to an Ethernet, run the Ethernet Checkout (RAP 6). If no Ethernet is attached to the system (or if the Ethernet Checkout is successful), and the Rigid Disk Failure Code repeats when the Confidence Test is rerun, replace the IOP PWB (4.12). Then, if the Confidence Tests fails again on the same code, replace the MPB PWB (4.12).

13. Perform the System Check procedures, then return to this step without proceeding to Final Actions. The machine successfully passes System Check.

    Y N

    | Go to step 17.

14. Boot the system software from the Rigid Disk by pressing Function Key **<F1>**.

15. After approximately 12 minutes the bouncing keyboard is displayed.

    Y N

    | Call for assistance.

16. The system is working. Go to Final Actions.

17. From either the floppy or the Ethernet, log on to the Off-Line Diagnostics at the Technical Support Level with the password **rexifsn**. Select the **Formatter, Scavenger, and Bad Page Utility** option. The Formatter, Scavenger, and Bad Page Utility menu appears.

    Y N

    | Go to step 26.

18. Select Bad Page Utilities and then select **Display Bad Page Table**. Record the bad pages.

19. Select **Scan Disk For New Bad Pages**. Run the test for 3 passes with 9 retries. New bad pages are found.

    Y N

    | Go to step 31.

NOTE: If this rigid disk drive has repetitive or frequent bad pages after proper recovery procedures have been performed, call for assistance.

20. Make a list of the **Page-Number** of any new bad pages. All of the bad pages are on the Scavenger and/or the User Volumes. (Refer to Table 2 to determine the volume location. The underlined numbers are the root pages.)

    Y N

    | Go to step 34.

NOTE: Do not enter Scavenger or User volume root pages into the Bad Page Table. Call for assistance.

Table 2. 6085 Rigid Disk Layout

Workstation		Cylinder "0"	Scavenger	User
10MB	Mod 1-2	000-0127	0128-2328	02329 +
20MB	Mod 1	000-0159	0160-02860	02861 +
20MB	Mod 2	000-0127	0128-02828	02829 +
20MB	Mod 3	000-0191	0192-02892	02893 +
20MB	Mod 4	000-0127	0128-02828	02829 +
T20MB	Mod A	000-0159	0160-03160	03161 +
T20MB	Mod B	000-0127	0128-03128	03129 +
T20MB	Mod C	000-0191	0192-03192	03193 +
T20MB	Mod D	000-0127	0128-03128	03129 +
40MB	Mod 1	000-0255	0256-04056	04057 +
40MB	Mod 2-3	000-0159	0160-03960	03961 +
40MB	Mod 4	000-0191	0192-03992	03993 +
T40MB	Mod C	000-0159	0160-04560	04561 +
T40MB	Mod D	000-0191	0192-04592	04593 +
80MB	Mod 1	000-0255	0256-06356	06357 +

21. Accept the default **2-Test** option. Record the Volume and Error Status information for that page.

22. There are more bad pages.

    Y N

    | Go to step 24.

23. Perform the following procedures to determine the specific CRC Field (Header, Label, or Data) for each bad page.

    a. From the option window (with 1-Test, 2-Repair, 3-Mark Bad, 4-Next, and 5-Exit options), accept the **4-Next** option.
    b. Record the Volume and the Error Status information.
    c. Continue this process for each page until the end of the bad page table is reached.

24. Using the Volume and CRC Field information reported in the above steps; for **CRC Errors (Header, Data, or Label) in the Scavenger Volume** OR **Header CRC in the User Volume**, perform the "a" series of steps on the following pages. For **Label or Data CRC Errors in the User Volume**, perform the "b" series of steps on the following pages. The Recovery Action Tables, on the following pages (Tables 3, 4, and 5), are also included as a quick-reference. (See the NOTE below.) Go to the next step after successfully completing all recovery procedures.

NOTE: There may be situations when there are bad pages under both sets of error headings that require extended recovery procedures such as booting the system or running File Check. When this occurs, attempt to complete the preliminary recovery procedures for all pages before performing the final extended recovery procedures.

25. Return to step 17.

Table 3. Header CRC Recovery Actions

Volume	Recommended recovery action
Cylinder "0"	• If Page 0 or 1, run **PV Scavenger** • **Fix Bad Page Header:** If corrected: Reinstall VP Software (using the Install/Recovery Procedure). If not corrected: Call for assistance before replacing the drive.
Scavenger	• **Fix Bad Page Header:** If corrected: Reboot the workstation. If not corrected: Mark the bad page. Reboot the workstation. If necessary, reload applicable software (according to the error code). • Install, but do not run, **File Check Software.** Reboot the workstation.
User	• **Fix Bad Page Header:** If corrected: Run **File Check.** If necessary, reload applicable software (according to the cursor code). Reboot the workstation. If not corrected: Mark the bad page. Run **File Check.** Reboot the workstation. If necessary, reload applicable software (according to the error code).

Table 4. Label CRC Recovery Actions

Volume	Recommended Recovery Action
Cylinder "0"	• If Page 0 or 1, run **PV Scavenger** • **Fix Bad Page Header:** If corrected: Reinstall VP Software (using the Install/Recovery Procedure). If not corrected: Call for assistance before replacing the drive.
Scavenger	• **Fix Bad Page Header:** If corrected: Reboot the workstation. If not corrected: Mark the bad page. Reboot the workstation. If necessary, reload applicable software (according to the error code). • Install, but do not run, **File Check Software.**
User	• **File Check:** If corrected: Reboot the workstation. If necessary, reload applicable software (according to the error code). If not corrected: Mark the bad page. Repeat **File Check.** Reboot the workstation. If necessary, reload applicable software (according to the error code).

Table 5. Data CRC Recovery Actions

Volume	Recommended Recovery Action
Cylinder "0"	• If Page 0 or 1, run **PV Scavenger** • **Fix Bad Page Header:** If corrected: Reinstall VP Software (using the Install/Recovery Procedure). If not corrected: Call for assistance before replacing the drive
Scavenger	• **Fix Bad Page Header:** If corrected: Reboot the workstation. If not corrected: Mark the bad page. Reboot the workstation. If necessary, reload applicable software (according to the error code). • Install, but do not run, **File Check Software.**
User	• **File Check:** If corrected: Reboot the workstation. If necessary, reload applicable software (according to the error code). If not corrected: Mark the bad page. Repeat **File Check**. Reboot the workstation. If necessary, reload applicable software (according to the error code).

For CRC Error (Header, Data, or Label) in the Scavenger Volume or Header CRC in the User Volume

Perform the "a" series of steps below:

1a. Return to the Bad Page Utility menu. Select **5-Fix Bad Page Headers.**

2a. Enter the bad page number. The saving of the data was completed.

Y N

| Call for assistance.

3a. Accept the **3-Continue** option.

4a. Answer the question, "... Do you wish to Continue?," with a Yes.

5a. The utility ends with all pages in the **Restore-Status** column having a **Good Completion.**

Y N

| Go to step 9a.

6a. There are other known bad pages on which the Fix Bad Headers tool must be used.

Y N

| Go to step 8a.

7a. Answer Yes to the question, "More to go?." Return to step 2a.

8a. Answer No to the question, "More to go?." Return to step 24.

9a. There are other bad pages to recover under this heading.

Y N

| Go to step 11a.

10a. Record the page number for later entry into the Bad Page Table. Proceed to step 2a to continue with the recovery of the next bad page.

11a. Return to the Bad Page Utility menu. Select the **Manual Entry of Bad Pages.** Then select the **Enter By Page Number.**

12a. Enter the number of the bad page. Accept the Yes confirmation when the correct page number is shown on the screen.

13a. There are other known bad pages to enter into the Bad Page Table.

Y N

| Go to step 15a.

14a. Answer Yes to the question, "More to go?." Return to step 12a

15a. Answer No to the question, "More to go?." Perform the following final recovery procedures for the applicable volume(s) before proceeding to the next step.

Scavenger Volume - reinstall the software from floppy (Installation Procedure 6.14) or from the network (Installation Procedure 6.15).

User Volume - ask the System Administrator to run File Check and, if necessary, to reload the applicable software as indicated by any File Check Error Codes.

16a. The software installation and/or File Check was completed successfully.

Y N

| Call for assistance.

17a. There are other pages to recover.

Y N

| Go to step 1.

18a. Proceed to step 24 to continue recovery of other pages.

For Label or Data CRC in the User Volume

Perform the "b" series of steps below:

1b. Ask the System Administrator to run File Check and, if necessary, to reload the applicable software as indicated by any File Check Error Codes. The software installation and/or File Check was completed successfully.

Y N

| Go to step 3b.

2b. Return to step 16 to run **Scan for New Bad Pages**. If the CRC Error(s) under this heading repeat, proceed to the next step.

3b. Return to the **Bad Page Utilities** menu and select the **Manual Entry of Bad Pages**. Then select the **Enter By Page Number.**

4b. Enter the number of the bad page. Accept the Yes confirmation when the correct page number is shown on the screen.

5b. There are other known bad pages to enter into the Bad Page Table.

Y N

| Go to step 7b.

6b. Answer Yes to the question, "More to go?." Return to step 4b

7b. Answer No to the question, "More to go?." Perform the following final recovery procedure before proceeding to the next step.

8b. Ask the System Administrator to repeat File Check and, if necessary, to reload the applicable software as indicated by any File Check Error Codes.

9b. The software installation and/or File Check was completed successfully.

Y N

| Call for assistance.

10b. There are other pages to recover.

Y N

| Go to step 1.

11b. Proceed to step 24 to continue recovery of other pages.

Repair a Damaged Logical Volume Root Page

When Rigid Disk Diagnostics cannot be booted, and the 6085 is crashing at cursor code 0935, perform the "c" series of steps.

NOTE: Certain unrecoverable disk errors cannot be properly handled by the diagnostics and/or the operational software. If root pages are entered in error, additional software tools are required to recover the user data. In most cases the problem will have to be corrected with assistance from the RE/TSC.

NOTE: Ensure that the customer has 1) performed a User Area backup if possible, 2) run Diagnostics to validate the hardware and check for new bad pages, and 3) been notified of the consequences of these recovery procedures and has given their approval for you to proceed. (These procedures may allow you to recover all the data on the disk. However, depending on the exact problem encountered, there is the possibility that all the data on the disk will be lost.)

1c. Press the B Reset button. After the Boot Softkeys are displayed, insert the Off-Line Diagnostics floppy disk labeled Boot Diagnostics into the floppy disk drive. Press **<F6>** twice to run Long Boot Diagnostics. Long Boot Diagnostics was successful.

Y N

| Go to RAP 12.

2c. Press the B Reset button. After the Boot Softkeys are displayed, insert the Off-Line Diagnostics floppy disk labeled System Bootfile into the floppy disk drive, press **<F2>**, and then follow the on-screen instructions for inserting the Workstation Diagnostics Disk.

3c. Type **<3>** for a Technical Support logon, and press **<Return>**. Type the password **rexifsn**, and press **<Return>**.

4c. Type **<4>** for Formatter, Scavenger, and Bad Page Utilities, and press **<Return>**. If the system has a bad root page, the page number will appear at the bottom of the screen (Figure 6).

```
Running: Formatter, Scavenger and Bad Page Utility


Enter any key to continue:
= = = = = = = = = = = = = = = = = = = = = = = =
Unable to read Pilot data structures. . . Needs scavenging or
reformatting
Contact support services to perform risky repair


= = = = = = = = = = = = = = = = = = = = = = = =
Data CRC error found on page XXXX
```

Figure 6. Bad Root Page

5c. Note the bad root page. Then, press any key to return to the Main Menu.

CAUTION

The following "c" series of steps are destructive. Call for assistance before continuing. You will perform the following steps with assistance.

6c. Type **<3>** for the Bad Page Utilities, and press **<Return>**.

7c. Type **<4>** for Page Scavenger, and press **<Return>**.

8c. Type the page number and press **<Return>**.

9c. Press **<Return>** to the prompt "Should I overwrite data if required? Y".

NOTE: You must overwrite to fix the root page.

10c. At this point, run the "Logical Volume Scavenger" from the Installer.

a. Press the B Reset button. After the Boot Softkeys are displayed, insert the floppy disk labeled "Installer #1" into the floppy disk drive and press **<F2>**, then follow the on-screen instructions for inserting the next disk. Or, press **<F3>** from Ethernet and have a network user log on to display the Network Executive Menu.
b. After the Network Executive Menu is displayed, type **<911>** and press **<Return>**.
c. The RE/TSC will tell you the special password. Type the password and press **<Return>** (Figure 7).
d. Type **<Online>** and press **<Return>**.
e. Press **<Return>** at the "Drive name: Rd0" message.

```
Special Logon: ********** <Return>
Command mode entered.

>Online <Return>
Drive name: Rd0 <Return>
```

Figure 7. Installer Command Mode

f. Type **<Des>** and press the **<Space Bar>** (Figure 8). This command will list the Logical Volumes. One of the volume names will be:
"NeedsScavengingXXXXXXXXXX."

NOTE: "X" indicates variable numbers.

```
>Des <space>
>Describe physical volumes
Physical Volume ViewPoint on drive Rd0 (unknown type) contains:
Volume Scavenger (type = normal) XXXX of XXXX pages free
    starting at physical address XXX
No boot files found
Volume NeedsScavengingXXXXXXXXXX (type = normal) XXXXX
pages ***Needs Scavenging***
    starting at physical address XXXX
```

Figure 8. Describe Physical Volumes

g. Type **<Scavenge>** and press **<Return>** (Figure 9).
h. At the "Logical volume name:" prompt, type the volume name as it appeared in the Describe Physical Volume command (i.e., **NeedsScavengingXXXXXXXXXX**, where "X" indicates variable numbers) and press **<Return>**.
i. At the "Are you sure? (Y/N): N" prompt, type **<Y>** and press **<Return>**.
j. When the Scavenge is complete, type **<Describe Physical Volume>** and press **<Return>**, and the original volume name will appear.

```
>Scavenge <Return>
Logical Volume Name: NeedsScavengingXXXXXXXXXX
<Return>
Are you sure (Y/N): Y <Return>
Scavenging...Complete
volume repaired, log file complete
X files on volume
No problems found

>des
```

Figure 9. Scavenge the Logical Volume

11c. The Logical Volume Scavenger (page level) failed with the error message "Scavenger Error:DiskHardware Error."

Y N

| Return to step 17.

Recovering From a Disk Hardware Error During Logical Volume Scavenge

Any of the following Disk Hardware Errors can occur while scanning the disk: NotReady, RecalibrateError, SeekTimeout, Header NotFound, Data VerifyError, OverrunError, WriteFault, MemoryError, MemoryFault, OtherError. (The Scavenger fails while running, and running either a Confidence Test or Surface Verification shows unreadable pages.)

12c. Allow the scavenge to complete, then press the B Reset button. After the Boot Softkeys are displayed, insert the Off-Line Diagnostics floppy disk labeled System Bootfile into the floppy disk drive, press **<F2>**, and then follow the on-screen instructions for inserting the Workstation Diagnostics Disk.

13c. Type **<3>** for a Technical Support logon, and press **<Return>**. Type the password **<rexifsn>**, and press **<Return>**.

14c. Type **<4>** for Formatter, Scavenger, and Bad Page Utilities, and press **<Return>**.

15c. Type **<3>** for the Bad Page Utilities, and press **<Return>**.

16c. Run **Scan Disk for New Bad Pages** if bad pages were detected.

17c. Select **5-Fix Bad Page Headers**.

18c. Enter the bad page number. The saving of the data was completed.

Y N

| Call for assistance.

19c. Accept the **3-Continue** option.

20c. Answer the question, "... Do you wish to Continue?," with a Yes.

21c. The utility ends with all pages in the **Restore-Status** column having a **Good Completion**.

Y N

| Call for step 9a.

22c. Return to step 17.

26. A message, "....needs scavenging...," occurs.

Y N

| Call for assistance.

*NOTE: To **Repair a Damaged Physical Volume Root Page (Page 0)**, or to **Repair a Damaged Bad Page Table (Page 1)**, perform the following steps.*

27. Continue to the Formatter, Scavenger, and Bad Page menu. Select **Run Physical Volume Scavenger**. Accept the default answers for a safe repair.

28. The Scavenger was successful (Damage Report message = "Internal Structures: Have been repaired").

Y N

| Call for assistance.

29. The Bad Page Table was lost.

Y N

| Go to step 31.

30. Re-enter the Bad Page Table by performing the following procedures.

a. From the Bad Page Utilities Menu, select the **Manual Entry of Bad Pages**. Then select the **Enter By Page Number**.
b. Refer to the Bad Page Log (attached to the rigid disk drive) and enter the number of the first bad page. Accept the Yes confirmation when the correct page number is shown on the screen. Until all of the pages in the Bad Page Log are entered, answer Yes to the question, "More to go?."
c. When all pages are entered, answer No to the question, "More to go?".
d. Return to step 17.

31. Reboot the system by pressing the Reset Button and then pressing the Workstation System Boot function key **<F1>**.

NOTE: During rebooting process after using disk recovery procedures, some Cursor Codes and Error Codes may appear that are part of the complete recovery process. Refer to RAP 4 as necessary.

32. The system boots successfully.

Y N

| Call for assistance.

33. Go to Final Actions.

34. There are Bad Pages detected on the **Cylinder 0** volume.

Y N

| Call for assistance.

35. From the Off-Line Diagnostics Available Selections menu, select Rigid Disk Tests. Then from the Rigid Disk Tests selections menu, select **Verify Disk Surface**. Run the test for 1 pass.

36. Record the page number(s) that are in the Cylinder 0 volume.

37. Return to the **Bad Page Utilities** menu and select **Fix Bad Page Headers**.

38. Enter the bad page number. The saving of the data was completed.

Y N

| Call for assistance.

39. Press **<Return>** to accept the **3-Continue** option.

40. Answer Yes to the question, "... Do you wish to Continue?"

41. The utility ends with all pages in the **Restore-Status** column having a **Good Completion**.

    Y N

    | Call for assistance.

42. There are other known bad pages on which the Fix Bad Headers tool must be used.

    Y N

    | Go to step 44.

43. Answer Yes to the question, "More to go?." Return to step 38.

44. Answer No to the question, "More to go?." Return to step 17.

RAP 10 Keyboard/Mouse/Beeper Checkout

NOTE: If necessary, the On-Line Diagnostics Keyboard Test can be substituted for the Off-Line procedures.

1. The Boot Softkeys are highlighted when a function key is pressed.

   Y N

   | Go to step 9.

2. Press the B Reset button. After the Boot Softkeys are displayed, load either the Floppy or Ethernet Off-Line Diagnostics. **Floppy:** Insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive, press **<F2>**, and then follow the on-screen instructions for inserting the Workstation Diagnostics Disk. **Ethernet:** Press **<F3>** and select Off-Line Diagnostics when the Network Executive appears.

3. From the Logon Menu, select **User**, and then from the Available Selections menu, select the **Keyboard/Display/Mouse/Beeper Tests**. The system proceeds to the Test Selections menu.

   Y N

   | Go to RAP 5.

4. From the Test Selections menu, select the **Keyboard, Mouse, and Beeper Tests**. All keys and the mouse buttons are shown as white.

   Y N

   | Go to step 7.

5. Press and release any keys or mouse buttons that are suspect. The keys, beeper, and/or buttons function normally (black when pressed; white when not pressed or beeper tone is heard when applicable).

   Y N

   | Go to step 7.

6. The keyboard and/or mouse have just been verified operational. Go to Final Actions.

7. Check and correct the keyboard, mouse, and/or beeper for any obvious problems such as dirty and/or sticky keys, staples, loose connectors, etc. Retest the keyboard and/or mouse. The keyboard, mouse, and/or beeper function correctly.

   Y N

   | Go to step 9.

8. The keyboard, mouse, and/or beeper have just been verified operational. Go to Final Actions.

9. Check the Keyboard cable/connections and repair if necessary. If the problem remains, replace the Keyboard (PL 5.4). If only the beeper tone is inoperative, replace the display (PL 5.4).

RAP 11 Display Checkout

NOTE: If necessary, the On-Line Diagnostics Display Test can be used instead of the Off-Line procedures.

1. Press the B Reset button. After Pre-Boot Diagnostics completes, the Softkeys appear on the display.

   Y N

   | Go to step 8.

NOTE: If vertical lines (spaced 1/4 inch apart) appear while the Boot Softkeys are displayed, go to RAP 14.

2. After the Boot Softkeys are displayed, load either the Floppy or Ethernet Off-Line Diagnostics. **Floppy:** Insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive, press **<F2>**, and then follow the on-screen instructions for inserting the Workstation Diagnostics Disk. **Ethernet:** Press the Ethernet Boot **<F3>** and select Off-Line Diagnostics when the Network Executive appears.

3. From the Logon Menu, select **User**, and then from the Available Selections menu, select the **Keyboard/Display/Mouse/Beeper Tests**. System proceeds to the Test Selections menu.

   Y N

   | Go to RAP 5.

4. From the Test Selections menu, select the **Cross-Hair Pattern**. The Cross-Hair Pattern on the display is centered and the blank borders are approximately equal.

   Y N

   | Go to step 7.

5. Overall display image quality is satisfactory.

   Y N

   | Go to step 7.

6. Display operation and quality has been verified satisfactory. Go to Final Actions.

7. Perform Display Image Adjustments (4.20 or 4.23). If unable to achieve satisfactory display image quality, replace the display. If the problem still exists, call for assistance.

8. The display flashes an image when the B Reset button is pressed.

   Y N

   | Go to step 10.

9. Replace the following listed parts as necessary in the order given. If the problem still exists, call for assistance.

DCM PWB	(PL 5.1)
IOP PWB	(PL 5.1)
MPB PWB	(PL 5.1)
Display	(PL 5.4)

10. Press the B Reset button and after the Pre-Boot Diagnostics complete (approximately 5 seconds), press **<F5>**. The boot sequence cursor codes appear on the upper left of the screen.

    Y N

    | Go to step 14.

11. The Boot Diagnostics sequence stopped on a Cursor Code.

    Y N

    | Go to step 14.

*NOTE: Pressing **<M>** moves the cursor box.*

12. All Cursor Code digits are visible.

    Y N

    | Go to step 14.

13. Go to RAP 12.

14. Replace the following listed parts as necessary in the order given. If the problem still exists, call for assistance.

IOP PWB	(PL 5.1)
DCM PWB	(PL 5.1)
MPB PWB	(PL 5.1)
Display	(PL 5.4)

RAP 12 Boot Diagnostic Cursor Codes

NOTE: If vertical lines (spaced 1/4 inch apart) appear while the Boot Softkeys are displayed, go to RAP 14.

1. The Cursor Code is at the top middle of the display.

   Y N

   | Go to RAP 13.

2. Press **<R>** to change the Cursor Code into a Repair Code. The code changes.

   Y N

   | Call for assistance.

3. Replace the components or perform the procedure in the order shown in the cursor box.

Order of component replacement or procedure

1st	2nd
3rd	4th

Code	Procedure
0	Replace the IOP PWB (PL 5.1)
1	MPB PWB - Go to RAP 15
2	DCM PWB - Go to RAP 14
3	MEB PWB - Go to RAP 14
4	Replace the PCO PWB
5	Replace the Options PWB
6	Go to RAP 6
7	Go to RAP 6
8	Replace the ID Prom (4.12, Step 6)
9	(See NOTE 1)
A	(See NOTE 2)
B	(See NOTE 3)
C, D, E	N/A
F	Check the cables, the cable connections, and the backplane

NOTE 1: If not previously performed, go to RAP 9. If RAP 9 led to this code, replace Rigid Disk Drive (PL 5.1).

NOTE 2: If not previously performed, go to RAP 7. If RAP 7 led to this code, replace the Floppy Disk Drive (PL 5.1).

NOTE 3: **Scanner** - Refer to your 7650 Pro Imager service manual. **Printer** - If not previously performed, go to RAP 16. If RAP 16 led to this code, call for Printer Service.

RAP 13 Other Cursor Codes List

1. For other cursor codes, refer to the specific codes in the following lists and perform any Recovery Action (shown in bold letters) as required. Then return to these steps.
2. The Cursor Code is listed.

   Y N

   | Call for assistance.

3. The Recovery Action was performed, and the problem was resolved.

   Y N

   | Call for assistance.

4. Go to Final Actions.

NOTE: Some of the "symbols" used in the following codes are described below:

- "XX" indicates variable numbers of a Cursor Code such as XX45 or 76XX.
- Some Error Codes appear as a sequential series of codes. These codes are denoted with a "+" after the code, and any additional designation that may apply is included in the Description/Recovery Action information.

NOTE: The Cursor Code section of the 6085 PCS Diagnostics Handbook contains technical descriptions of all Cursor Codes (other than Boot Diagnostic Codes). This information may be useful for Repair Analysis purposes when existing procedures do not resolve a code-related problem.

Code Description/Recovery Action

XX45 Unrecoverable Disk Error. There is a disk page that contains invalid data. **Go to RAP 9.**

0100 The boot code in the EPROM is starting to run. Process code only, no action required.

0149 The boot code in the EPROM is attempting to fetch the initial microcode from the boot device. This code should only occur for a few seconds and be followed by either 150 (success) or 151 (failure). **If it remains on, reboot. If it recurs, call for assistance.**

0150 The initial microcode has been successfully fetched from the boot device and has started execution. Process code only, no action required.

0151 The initial microcode cannot be fetched from the boot device. Possible causes: nonexistent device, no initial microcode installed on the rigid or the floppy or filed in the wrong place, no initial microcode installed on the boot server, bad checksum on boot server's initial microcode, not connected to net during net boot. **Check for obvious problems and, if necessary, perform the applicable boot device checkout: Rigid Disk Drive - RAP 9, Floppy Disk Drive - RAP 7, Ethernet - RAP 6.**

0199 The Initial microcode is fetching Mesa microcode and Germ or diagnostic microcode. This code should only occur for less than a minute and be followed by either 200 (success) or 201 (failure). **If it remains on, reboot. If it recurs, call for assistance.**

0200 The Mesa microcode and Germ or diagnostic microcode has been successfully fetched from the boot device, and has started execution. Process code only, no action required.

0201 The Mesa microcode and Germ or diagnostic microcode cannot be fetched from the boot device. Possible causes: same as for code 151. **Check for obvious problems and, if necessary, perform applicable boot device checkout: Rigid Disk Drive - RAP 9, Floppy Disk Drive - RAP 7, Ethernet - RAP 6.**

0912 The processor cannot read the bootfile from the current input device. **Check for obvious problems and, if necessary, perform the applicable boot device checkout: Rigid Disk Drive - RAP 9, Floppy Disk Drive - RAP 7, Ethernet - RAP 6. Use an alternate boot device if necessary.**

0915 The system is attempting to find a debugger after a software crash has occurred. **Go to RAP 9.**

0921 A File Check was run with no File Check software installed. **Call for the System Administrator or Xerox System Analyst.**

0935 The system is attempting to find a debugger after a software crash has occurred. **Go to RAP 9.**

0937 The system is attempting to set the time via Ethernet. **Check the Ethernet cable connection. If not an Ethernet problem, ask the System Administrator to set the time on Clearinghouse or Communication Server, then reboot.**

0950 The logical volume is being scavenged. The amount of time to complete the scavenge depends on the rigid disk size, number of files, and fragmentation of the logical volume. **Do not reboot or perform any action until the scavenge completes.**

0960 Deleting temporary files. During ViewPoint startup, this cursor code may display for up to 5 minutes and then continue with the startup process. No action required.

7500 The File Check Software is running; scavenging in progress. This code remains displayed until File Check is complete, and the workstation boots the software back up. No action required.

CAUTION

Initializing user file systems is destructive to files already on the User Volume. Do not initialize without contacting the System Administrator or Xerox Systems Analyst.

7504 This code normally indicates the user file system must be initialized. However, **if this appears after a workstation has completed booting once, do not initialize this volume. Call for the System Administrator or Xerox Systems Analyst.**

CAUTION

Do not run File Check until hardware verification is attempted. Perform Systems Check and any RAPs as directed before running File Check.

7511 The File Check software needs to be installed and run. **Refer to the notes following step 18 in either Procedure 6.14, SOFTWARE INSTALLATION FROM FLOPPY or 6.15, SOFTWARE INSTALLATION FROM THE NETWORK to install and run the File Check software. See caution above.**

7530 + (8 additional codes appear in sequence with the code 7530.) The File Check was not able to complete successfully. Contact the System Administrator, a Xerox Systems Analyst, or the ISCSC.

7545 Unrecoverable Disk Error. There is a disk page that contains invalid data. **Go to RAP 9.**

7600 Xerox Viewpoint Software is being booted. Normal startup. No action required.

76XX + (The code appears in a series of codes following the code 9999.) Xerox Viewpoint software cannot start. (Refer to the 6085 Diagnostics Handbook for further descriptions.) **Contact the System Administrator or Xerox Systems Analyst.**

7700 Xerox NetCom (or VP Remote Com or VP StandAlone) software is starting. Normal startup. No action required.

Remote or Standalone configuration only: The boot process will stay at code 7700 if the system is a Remote or Standalone configuration that has had File Check run on it. The Set Time input has been erased by File Check and must be reinstalled for the boot process to proceed. **Reinstall the Set Time Utility and enter the correct time (6.16).**

77XX + (The code appears in a series of codes following the code 9999.) VP NetCom (or VP RemoteCom or VP StandAlone) software containing Xerox Viewpoint software cannot start. (Refer to the 6085 Diagnostics Handbook for further descriptions.) **Contact the System Administrator or Xerox Systems Analyst.**

7800 All VP series applications that have been specified to be loaded automatically at workstation boot time are now being loaded. Normal Startup. No action required.

78XX + (The code appears in a series of codes following the code 9999.) An Autorun application cannot run. (Refer to the 6085 Diagnostics Handbook for further descriptions.) **Contact the System Administrator or Xerox Systems Analyst.**

RAP 14 Memory Chip Isolation

NOTE: If the memory fails during Boot Diagnostics, the system will automatically run a memory analysis and build a memory chip failure error log.

NOTE: Before performing this RAP, verify that the level of memory shown in the System Configuration Utility (6.10) matches the actual level of memory installed.

NOTE: Bank 0 of the DCM PWB is not tested during Boot Diagnostics because it is used to communicate to the display while the diagnostics are running. Vertical lines (spaced 1/4 inch apart) appearing while the Boot Softkeys are displayed indicate a DCM chip failure.

1. Vertical lines (spaced 1/4 inch apart) appear while the Boot Softkeys are displayed.

   Y N

   | Go to step 11.

2. Press the B Reset button. After the Softkeys appear, load Boot Diagnostics from Floppy or Ethernet. **Floppy:** Insert the Off-Line Diagnostics Boot Diagnostics Disk into the floppy disk drive and press **<F6>** twice. **Ethernet:** Press **<F7>** twice.

3. The DCM PWB is the first component identified by the Repair Code.

   Y N

   | Go to step 5.

4. Go to step 11.

5. Run the Long Boot Diagnostics EI Memory Tests.

   a. Press the B Reset button. After the Softkeys appear, load Boot Diagnostics from Floppy or Ethernet. **Floppy:** Insert the Off-Line Diagnostics Boot Diagnostics Disk into the floppy disk drive and press **<F6>** twice. **Ethernet:** Press **<F7>** twice.
   b. As the Boot Diagnostics is running a test, press **<STOP>** to prepare the system for test sequence entry.
   c. Press **<F>** to enter the File Stream.
   d. As the cursor codes spin, press **<M>** to access the memory tests.
   e. With the cursor code at **[CA99]**, press **<S>**, and then **<4>** to Specify Test Option 4, which is the IOP Memory Data Test. Press **<Return>** to begin the test.

6. The test produces a flashing Error Code on the display.

   Y N

   | Call for assistance.

7. Press **<R>** to change the flashing Error Code into a Repair Code. The code changes.

   Y N

   | Call for assistance.

8. The DCM PWB should be the first component identified by the Repair Code. Return to the flashing Error Code by pressing the **<Space bar>** repeatedly until the Error Code reappears.

9. Press **<Q>** to build a memory error log. Cursor code [CA15] will display, and after four or five minutes, will return to the Error Code.

10. Go to step 13.

11. The DCM or the MEB PWB is the first component identified by the Repair Code.

    Y N

    | Replace the PWB as indicated, then go to step 19.

12. Return to the flashing Error Code by pressing the **<Space Bar>** repeatedly until the Error Code reappears.

13. Press **<E>** and then **<L>** to access the memory chip failure error log. The location of the first bad chip will appear in the cursor box. Make a note of the Bank Indicator Code (the number, numbers, letter, or number/letter combination in the upper positions of the cursor box) and the Chip Location Code (the number or letter in the lower right position of the cursor box). (Examples #1 and #2)

*NOTE: If, when you press **<E>** and then **<L>**, the cursor code returns to the flashing Error Code instead of accessing the error log, replace the PWB that was identified in Step 11.*

Example 1

0	0
0	E

{Bank Indicator Code

{Chip Location Code

Example 2

1	C
0	8

{Bank Indicator Code

{Chip Location Code

14. Press **<Return>** to display the next Bank Indicator and Chip Location codes (if any). (Example #3) Continue to press **<Return>** and make note of the Bank and Chip codes until the cursor code returns to the Error Code. At this time all of the defective chips will have been identified.

Example 3

0	4
0	1

{Bank Indicator Code

{Chip Location Code

15. Refer to the Bank Indicator Code that you noted in Step 13 and find that bank in Table 6, 6A, or 7.

NOTE: Check the part number of the DCM PWB to determine whether to use Table 6 or 6A to locate failed memory chips on that board. Table 6A is used ONLY with the 140K0046X series of DCM PWBs.

16. Find the IC chip "U" number that corresponds to the Chip Location Code identified along with that bank (Example #4).

17. Repeat for all of the Bank Indicator/Chip Location codes that you identified in Step 14.

NOTE: Due to the way in which the memory is mapped, the error log may identify each individual 256K chip as being defective in up to four different banks. Defective IC chips that are 64K will be identified in only one bank (Example #4).

Example #4:

Press <E> then <L>
Result: Bank Indicator 0, Chip Location E
Press <Return>
Result: Bank Indicator 4, Chip Location 3
Press <Return>
Result: Bank Indicator 5, Chip Location 3
Press <Return>
Result: Bank Indicator 6, Chip Location 3
Press <Return>
Result: Bank Indicator 7, Chip Location 3
Press <Return>
Result: Return to the flashing Error Code.

Use Table 6 to find the the IC chips to replace. In this example the bad chips would be U55 (a 64K chip in Bank 0, Location E) and U27 (a 256K chip in Banks 4, 5, 6, and 7, Location 3).

NOTE: Presently there is no way to isolate a defective parity chip. Parity chips are identified in the following tables with a "P," "P0," or "P1."

18. Replace the IC chips as indicated using the IC Chip replacement procedure 4.17.

NOTE: If all of the IC chips in a bank are identified as defective, and if you have verified that the correct memory level is reflected by the Systems Configuration Utility (6.10), replace the entire PWB.

19. To verify the repair, rerun the Boot Diagnostics. If a problem still exists, follow the new Repair Code or call for assistance. If the problem is resolved, go to Final Actions.

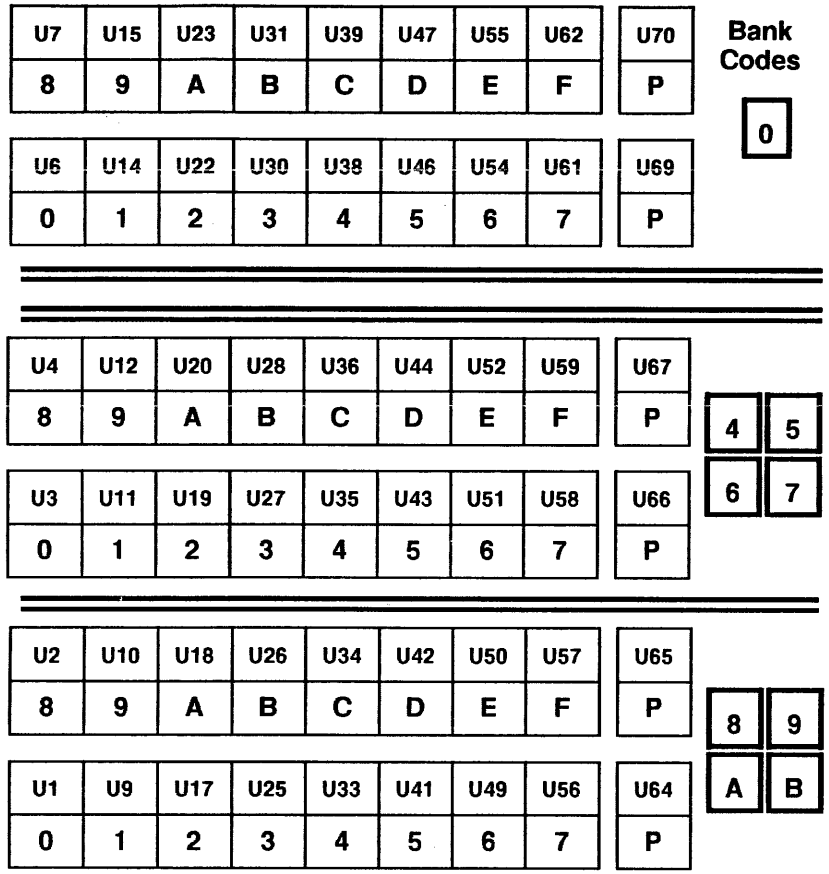


Table 6. DCM PWB Chip Isolation Chart

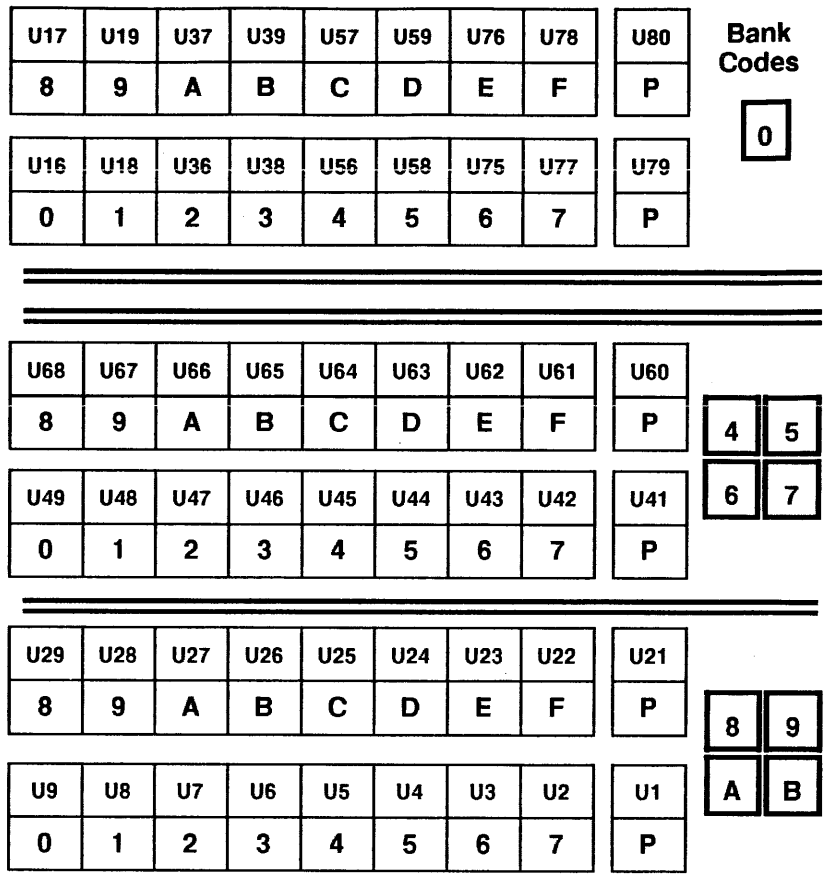


Table 6A. DCM PWB Chip Isolation Chart
140K0046X Series of PWBs

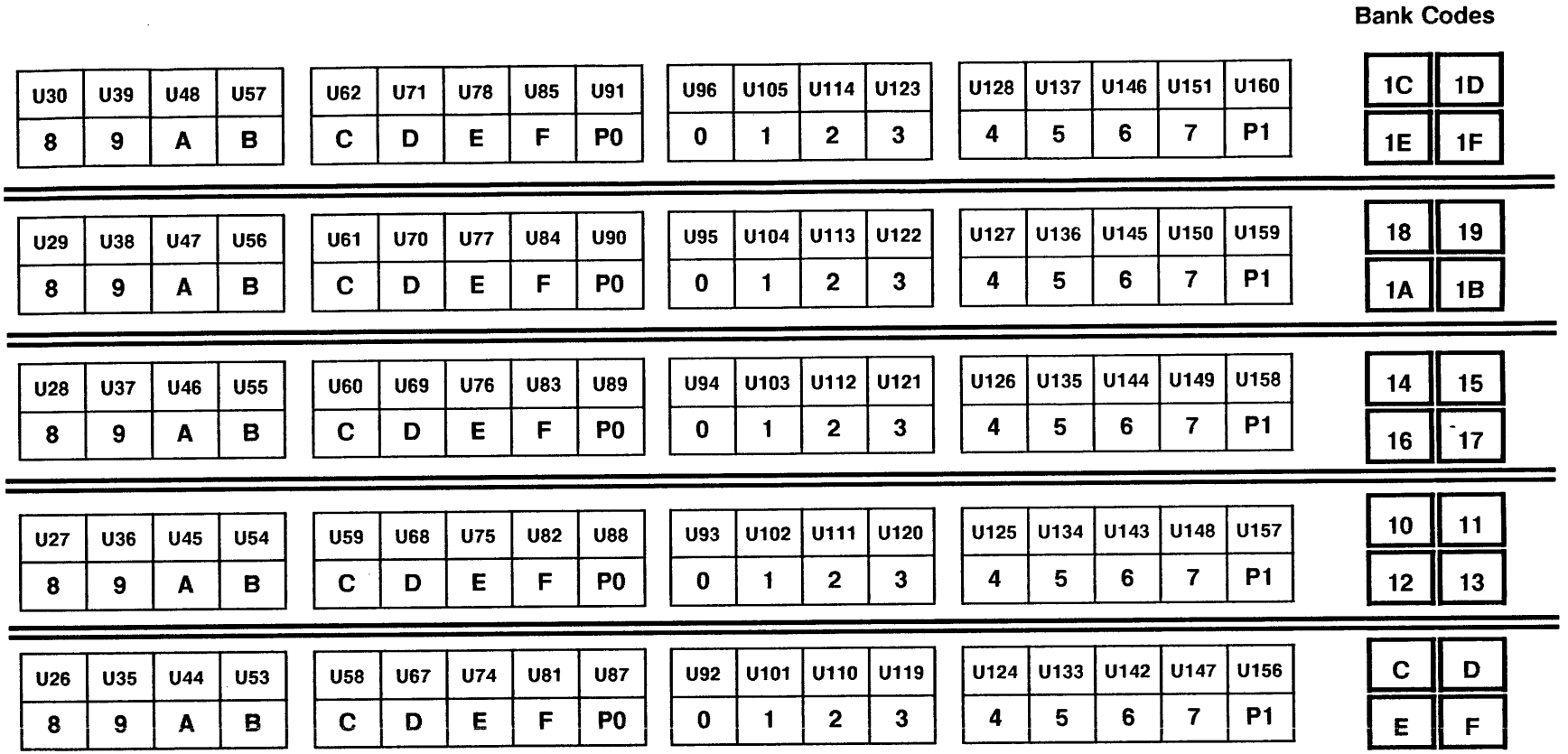


Table 7. MEB PWB Chip Isolation Chart

RAP 15 Control Store Chip Isolation

NOTE: This procedure is used to identify bad IC chips in the socketed section of the control store on the MPB PWB. You should enter this procedure from a Repair Code (RAP 12).

NOTE: Check the part number of the MPB PWB to determine whether to use Table 8 or 8A to locate failed control store chips on the board. Table 8 is used ONLY with the 140K0416X series of MPB PWBs and Table 8A is used ONLY with the 140K0557X series of MPB PWBs.

1. Press the **<Space Bar>**. The number in the cursor box changes to **[1XXX]** .

   Y N

   | Go to step 7.

2. Press the **<Space Bar>** again to get a Section Code. (Example #1.) The Section Code is the number in the lower right position of the cursor box that identifies a group of four control store IC chips. Find the group of IC chips on Table 8 (140K0416X series of PWBs) or 8A (140K0557X series of PWBs) that corresponds to the Section Code.

   Example #1

0	0
0	2

   {Section Code

3. Press the **<Space Bar>** again to change the Section Code to a Chip Location Code. The Chip Location Code will be a number or letter in any one of the four cursor box positions. (Example #2.) The position of this number or letter in the cursor box is used to identify the bad IC chip in the next step.

   Example #2

0	0
X	0

   {Chip Location Code

4. Refer to Table 8 or 8A and the group of four IC chips identified in Step 2. Match the position of the letter or number from the Chip Location Code in Step 3 with the position of the "X" in one of the cursor boxes. The IC chip with the cursor box that matches is the defective chip.

Section 2		Section 3		Section 4	
U169	U153	U137	U121	U105	U94
X0 00	00 X0	X0 00	00 X0	X0 00	00 X0
U170	U154	U138	U122	U106	U95
0X 00	00 0X	0X 00	00 0X	0X 00	00 0X

Table 8. MPB PWB Chip Isolation Chart 140K0416X Series of PWBs

Section 2		Section 3		Section 4	
U156	U141	U128	U112	U101	U86
X0 00	00 X0	X0 00	00 X0	X0 00	00 X0
U157	U142	U129	U113	U102	U87
0X 00	00 0X	0X 00	00 0X	0X 00	00 0X

Table 8A. MPB PWB Chip Isolation Chart 140K0557X Series of PWBs

5. Replace the IC chip that you identified in Step 4 using IC Chip replacement procedure 4.17.
6. To verify the repair, rerun the Boot Diagnostics. If a problem still exists, follow the new Repair Code or call for assistance. If the problem is resolved, go to Final Actions.
7. Replace the MPB PWB (4.16). To verify the repair, rerun the Boot Diagnostics. If a problem still exists, follow the new Repair Code or call for assistance. If the problem is resolved, go to Final Actions.

1. Switch the 4045 power off and then on. The Configuration Sheet (Figure 10) is printed.

   Y N

   | Go to step 4.

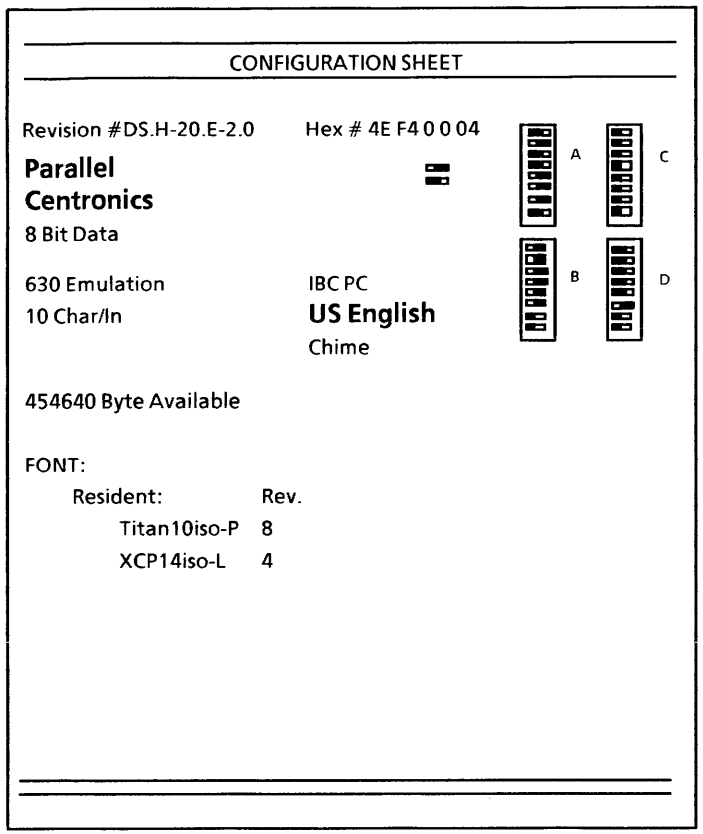


Figure 10. Configuration Sheet

2. The 4045 problem still exists.

   Y N

   | Go to Final Actions.

3. The configuration sheet confirms that the 4045 is set for Parallel, Centronics, and US English communication (as shown in Figure 10).

   Y N

   | Go to step 24.

4. The 4045 has a status code or fault indication on the control panel.

   Y N

   | Go to step 6.

5. Refer to the operator instructions (located at the front, bottom, and right side of the 4045) for the directions on clearing the status code or fault. The status code or fault is cleared.

   Y N

   | Go to step 23.

6. Perform the 4045 Verification Test 43.

NOTE: Diagnostics Test 43 will cause all the fonts to print out as character proof prints. Some very small fonts (4 or 6 point) will not print out during this test because of RAM limitations. This condition is not a font problem as long as the customer can select and print these small fonts on their documents.

   a. Switch off the 4045 power.
   b. Press and hold the Last Page and Reset buttons (on the control panel) at the same time.
   c. While still holding the Last Page and Reset buttons, switch on the 4045 power.
   d. Release the Last Page and Reset buttons when the control Panel displays a number with a letter following it.
   e. Enter "43" by pressing and releasing the Last Page button until the first digit (4) of the code appears. Then press and release the Reset button until the second digit (3) is displayed.
   f. Press the OFF-LINE button. A flashing red indicator on the Control Panel will be displayed.
   g. Enter "99" by pressing and releasing the Last Page button until the first digit (9) appears. Then press and release the Reset button until the second digit (9) is displayed.
   h. Press the OFF-LINE button to start the test.

7. After a few seconds, prints should be produced (Figure 11). (The test may produce one portrait and one landscape print for each font installed.) The test produces at least one print.

   Y N

   | Go to step 23.

```
123456789:;< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdef
23456789:;< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefg
3456789:;< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefgh
456789:;< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghij
56789:;< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijk
6789:;< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijkl
789:;< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklm
89:;< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmn
9:;< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmno
:;< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmno
;< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnop
< = >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopq
= >?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrs
>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstu
?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstuvw
@ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstuvwx
ABCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstuvwxyz
BCDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstuvwxyz{
CDEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstuvwxyz{!
DEFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstuvwxyz{!}
EFGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstuvwxyz{!} +
FGHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstuvwxyz{!} +
GHIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstuvwxyz{!} + +
HIJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstuvwxyz{!} + + 1
IJKLMNOPQRSTUVWXYZ[/]abcdefghijklmnopqrstuvwxyz{!} + + 123
```

Figure 11. Character Proof Sheet

NOTE: To stop printing, press OFF-LINE. Stop printing before exiting the diagnostics mode. To exit the diagnostics mode, switch the 4045 power off.

8. Stop printing and exit the 4045 diagnostics mode as directed in the above NOTE.
9. Switch off the power to both the 6085 Processor and the 4045. Remove the interface cable from the Processor. Switch on the 6085 Processor power.
10. The Universal Option PWB installed in the 6085 is a LPO PWB.

    Y N

    | Go to step 30.

11. Run the Documenter Maintenance test.
    a. Press the B Reset button and when the Softkeys appear, press **<F5>**.
    b. When the cursor box is at the top middle of the display, press **<STOP>**.
    c. With the cursor code at **[XX99]**, press **<F>** and then **<J>** to boot the Documenter test file.

*NOTE: It may take up to 1 minute for the Cursor Code to go to **[1D99]**.*

    d. With the Cursor Code at **[1D99]**, press **<S>** and then **<0>** to Specify the Maintenance test option 0. Press **<Return>** to begin the test.

12. The test completes successfully by displaying **[1D00]**, **[1D01]** and stopping at Cursor Code **[1D99]**.

    Y N

    | Go to RAP 12.

13. Switch off the 6085 Processor power. Reinstall the interface cable. Switch on the 6085 Processor power.
14. Switch on the 4045 power. The configuration sheet (Figure 10) is printed.

    Y N

    | Go to step 28.

15. Run the Boot Printer Byte and Word Test.
    a. Press the B Reset button and when the Softkeys appear, press **<F5>**.
    b. When the cursor box is at the top middle of the display, press **<STOP>**.
    c. With the cursor code at **[XX99]**, press **<F>** and then **<J>** to boot the Documenter test file.

*NOTE: It may take up to 1 minute for the Cursor Code to go to **[1D99]**.*

    d. With the Cursor Code at **[1D99]**, press **<S>** and then **<4>** to Specify the Printer Byte and Word Test option 4. Press **<Return>** to begin the test.

16. A Printer Byte and Word test pattern without any character deletions is printed. (Figure 12).

    Y N

    | Go to step 18.

```
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghij
klmnopqrstuvwxyz6789ABCDEFGHIJKLMNOPQRSTU
This is the end of the line as you can see. 1111111111
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghij
klmnopqrstuvwxyz6789ABCDEFGHIJKLMNOPQRSTU
This is the end of the line as you can see. 2222222222
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghij
klmnopqrstuvwxyz6789ABCDEFGHIJKLMNOPQRSTU
This is the end of the line as you can see. 3333333333
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghij
klmnopqrstuvwxyz6789ABCDEFGHIJKLMNOPQRSTU
This is the end of the line as you can see. 4444444444
```

Figure 12. Boot Printer Byte and Word Test

17. The system is working. Go to Final Actions

18. Go to RAP 12, but do not replace any components at this time. Reseat any PWBs that are designated by the Repair Code and recheck the Local Laser Printer operation. The problem still exists.

    Y N

    | Go to Final Actions.

NOTE: The Processor side of the interface cable has 37 pins. The 4045 side of the interface cable has 36 pins. Check the corresponding pins to ensure an accurate continuity test.

19. Check continuity of the interface cable pin to pin (Figure 13). For example, check pin 1 to pin 1, pin 2 to pin 2, etc. The interface cable failed the continuity test.

    Y N

    | Go to step 21.

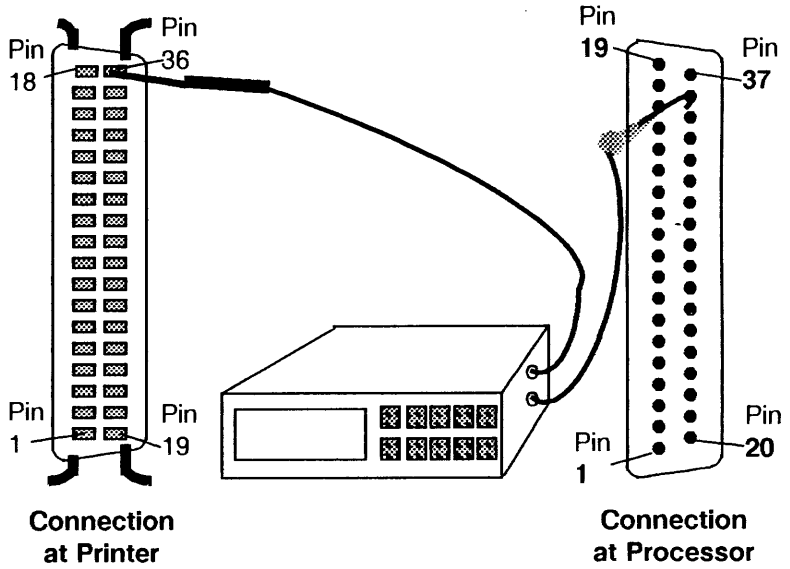


Figure 13. Interface Cable Continuity Check

20. Replace the Printer Interface Cable (PL5.3) and repeat steps 14, 15 and 16 to verify operation.

21. Reconnect the interface cable. The problem still exists.

    Y N

    | Go to Final Actions.

22. The 6085 Processor apparently has an undetermined problem. Call for assistance.

23. Check for any obvious problems. If unable to resolve the problem, notify the customer that the problem is with the 4045. If the 4045 is under a Xerox FSMA, call for printer service or, if qualified, perform the appropriate service on it.

24. Remove the Configuration Cartridge from the printer (Figure 14). Check that the Configuration Switches on the Configuration Cartridge (Figure 15) are set as follows: the A-1 and D-1 switches to the OFF position and the B-1 through B-4 switches to the ON position.

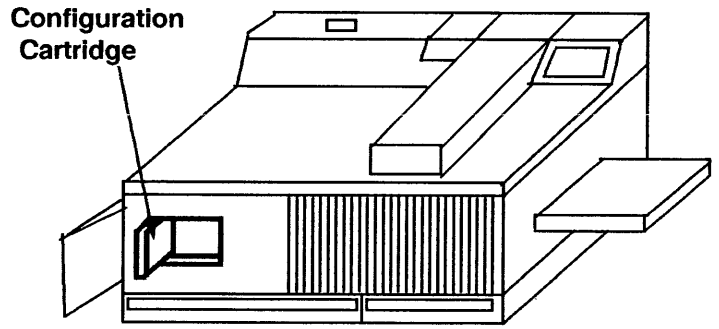


Figure 14. 4045 Printer Configuration Cartridge

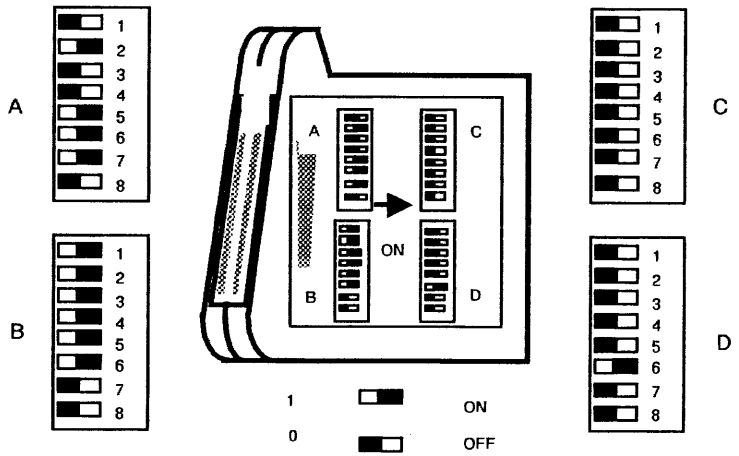


Figure 15. Printer Configuration Switches

25. The Configuration Switches are incorrectly set.

    Y N

    | Go to step 23.

26. Correct the setting of Configuration Switches and return to step 1.

27. The 4045 has a status code or fault indication on the control panel.

    Y N

    | Go to step 6.

28. Refer to the operator instructions (located at the front, bottom, and right side of the 4045) for the directions on clearing the status code or fault. The status code or fault is cleared.

    Y N

    | Go to step 23.

29. Return to step 14.

30. Run the SPO Data Register Loopback test.

    a. Press the B Reset button and when the Softkeys appear, press **<F5>**.
    b. When the cursor box is at the top middle of the display, press **<STOP>**.
    c. With the cursor code at **[XX99]**, press **<F>** and then **<O>** to boot the Scanner/Printer test file.

*NOTE: It may take up to 1 minute for the Cursor Code to go to **[1E99]**.*

    d. With the Cursor Code at **[1E99]**, press **<S>** and then **<6>** to Specify the SPO Data Register Loopback test option 6. Press **<Return>** to begin the test.

31. The test completes successfully by displaying **[1E08]**, and stopping at Cursor Code **[1E99]**.

    Y N

    | Go to RAP 12.

32. Switch off the 6085 Processor power. Reinstall the interface cable. Switch on the 6085 Processor power.

33. Switch on the 4045 power. The configuration sheet (Figure 16) is printed.

    Y N

    | Go to step 28.

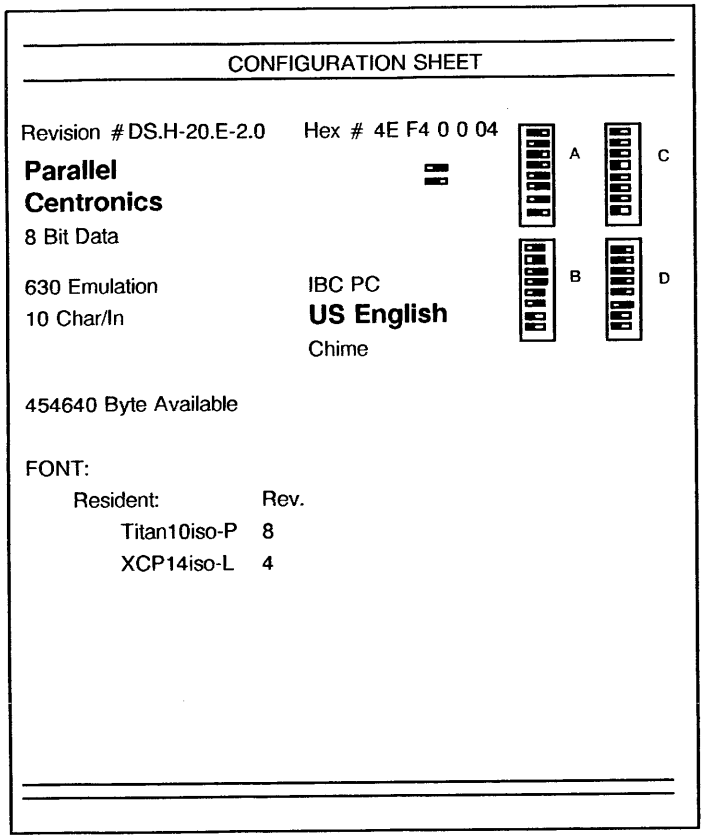


Figure 16. Configuration Sheet

34. Run the Print-Out on Printer Port Test (Figure 17).
    a. Press the B Reset button and when the Softkeys appear, press **<F5>**.
    b. When the cursor box is at the top middle of the display, press **<STOP>**.
    c. With the cursor code at **[XX99]**, press **<F>** and then **<O>** to boot the Print-Out on Printer Port test file.

*NOTE: It may take up to 1 minute for the Cursor Code to go to **[1E99]**.*

    d. With the Cursor Code at **[1E99]**, press **<S>** and then **<2>** to Specify the Print-Out on Printer Port Test option 2. Press **<Return>** to begin the test.

Figure 17. Print-Out on Printer Port Test

35. A test pattern without any character deletions is printed.

    Y N

    | Go to step 18.

36. The system is working. Go to Final Actions.

RAP 17 Removable Rigid Drive Interlock Solenoid

1. Switch off the system power.
2. Access the back of the processor.
3. Remove the six screws that secure the C9 cover and remove the cover.

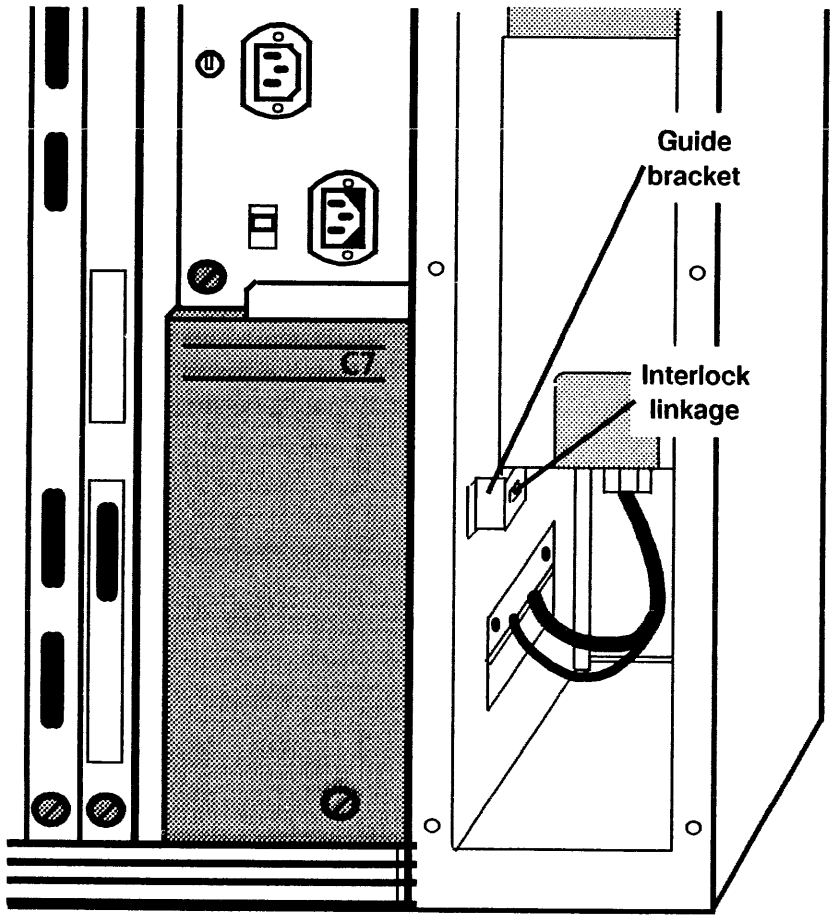


Figure 18. Interlock Guide Bracket

4. Watch the tip of the interlock solenoid linkage in the slot of the guide bracket (Figure 18). Switch the system power on and then off. The interlock solenoid linkage slides back and forth in the slot of the guide bracket as the power is switched on and then off.

   Y N

   | Go to step 6.

5. The solenoid is working electrically. Check for a bent locking hook or other mechanical problem.
6. Observe the operation of the fans.
   a. Switch off the system power.
   b. Loosen the screw that secures the C7 rigid drive bracket assembly and back the bracket out of the processor about two inches, until you can see the fan.
   c. Switch on the system power.
7. The fan rotates properly.

   Y N

   | Go to RAP 2.

8. Remove the rigid drive cable assembly (4.29), but do not remove the cable clamp from the cables.

9. Reach in through the C7 cavity and connect the meter leads to the backplane connector, J12. (Figure 19) Check for +11.83 to +12.57 VDC at the backplane. The correct voltage is read.

   Y N

   | Go to step 12.

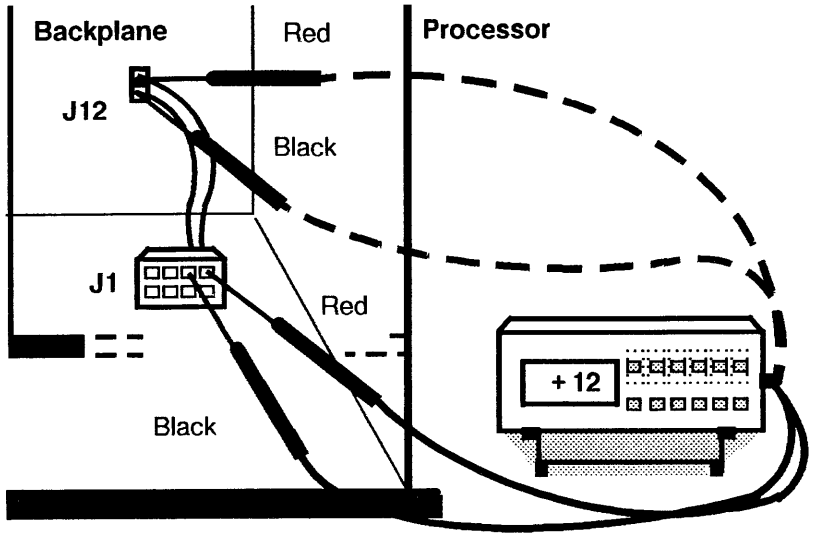


Figure 19. Fan Connector and Backplane

10. Disconnect the interlock solenoid connector and check for +11.83 to +12.57 VDC coming from the plug on the harness (Figure 20). The correct voltage is read.

    Y N

    | Replace the Fan / Interlock Solenoid harness (4.31).

11. Replace the Interlock Solenoid Assembly (4.30).

12. Check that the connector is properly seated. If reseating the connector doesn't solve the problem, replace the backplane (4.7).

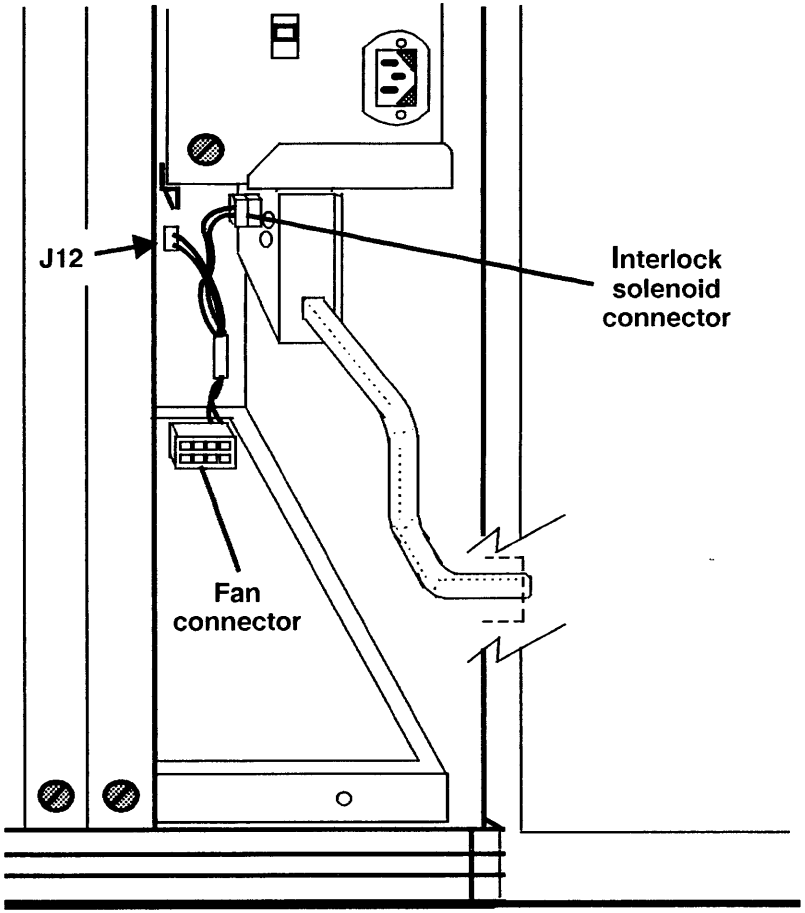


Figure 20. Fan / Interlock Solenoid Harness

RAP 18 Cartridge Tape Drive Checkout

NOTE: Also perform these procedures if you have replaced the IOP PWB or if the customer reports a problem with a cartridge tape.

1. Press the B Reset button. After the Softkeys appear, load the Long Boot Diagnostics from Floppy or Ethernet. **Floppy:** Insert the Off-Line Diagnostics Boot Diagnostics Disk into the floppy disk drive and press **<F6>** twice. **Ethernet:** Press **<F7>** twice.
2. The Boot Diagnostics sequence stopped on a Cursor Code.

   Y N

   | Go to step 5.

*NOTE: Pressing **<M>** moves the cursor box.*

3. All Cursor Code digits are visible.

   Y N

   | Go to RAP 11.

4. Go to RAP 12.
5. Perform the Clean Tape Heads procedure:
   a. Obtain the $\frac{1}{4}$" Data Head Cleaning Cartridge Kit (9R88432).
   b. Moisten the felt pad on the head cleaning cartridge with the cleaning solution and immediately insert the cartridge into the tape drive.
   c. Let the tape drive run for 30 seconds.
   d. Eject the head cleaning cartridge to stop the cleaning process.

NOTE: You may use the Reset Tension On-Line Diagnostics Cartridge Tape Utility as a substitute for the Retension Tape Off-Line Diagnostics Utility. Otherwise, always use the Off-Line Cartridge Tape Tests in this RAP.

6. Press the B Reset button. After the Boot Softkeys are displayed, load either the Floppy or Ethernet Off-Line Diagnostics. **Floppy:** Insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive, press **<F2>**, and then follow the on-screen instructions for inserting the Cartridge Tape Diagnostics Disk. **Ethernet:** Press **<F3>** and select **Off-Line Diagnostics** when the Network Executive appears.
7. From the Logon Menu, select **Technical Support** and logon with the password **rexifsn**. The system proceeds to the Cartridge Tape Diagnostics menu.

   Y N

   | Go to RAP 5.

8. From the Cartridge Tape Diagnostics menu, select the **Utility Options** and then select the **Retension Tape** option.
   a. Ensure that the problem cartridge OR the scratch cartridge is write-enabled. Insert the cartridge into the tape drive.
   b. The tension reset was successful.

      Y N

      | Try another cartridge. If the problem only occurs when a specific customer cartridge is used, inform the customer that the tape is likely damaged. If the problem occurs with several customer cartridges, use a scratch cartridge. Otherwise, go to step 9.

   c. Eject the cartridge.
   d. Type any character to return to the Cartridge Tape Diagnostics Menu.
9. A Diagnostic Tape Cartridge is available.

   Y N

   | Go to step 21.

10. From the Cartridge Tape Diagnostics menu, select the **Confidence Test**.

NOTE: This step will take approximately 25 minutes per pass.

a. Insert the Diagnostic Tape Cartridge into the tape drive.

CAUTION

This test requires a Diagnostic Tape Cartridge. Any other cartridge will create erroneous results. (The Diagnostics Tape Cartridge contains diagnostic information on Streams 6 and 7.)

b. The test was successful.

Y N

| If bad pages were reported, note them and go to step 16. If you have just replaced the IOP PWB, go to step 14. Otherwise, type any character to return to the Cartridge Tape Diagnostics Menu and go to step 12.

c. Type any character to return to the Cartridge Tape Diagnostics Menu.

11. The tape drive has just been verified. There is still a problem cartridge to be verified.

Y N

| If you have just replaced the IOP PWB, go to step 14. Otherwise, go to Final Actions.

12. From the Cartridge Tape Diagnostics menu, select the **Tape Surface Verify** option.

NOTE: This step will take approximately 25 minutes per pass.

a. Insert the problem cartridge into the tape drive.
b. The test was successful.

Y N

| If bad pages were reported, note them and go to step 16. If the problem still occurs when only a specific customer cartridge is used, inform the customer that the tape is likely damaged. If the problem occurs with several customer tapes, call for assistance. Otherwise, replace the tape drive, then the IOP PWB.

13. Go to Final Actions.

14. From the Cartridge Tape Diagnostics menu, select the **Exerciser** option.

NOTE: This step will take approximately 25 minutes per pass.

CAUTION

The Exerciser will destroy the contents of the tape.

a. Insert a scratch (formatted and retensioned) cartridge into the tape drive.
b. The test was successful.

Y N

| If bad pages were reported, note them and go to step 18. Otherwise, replace the IOP PWB, then the cartridge tape drive.

15. Go to Final Actions.

16. From the Cartridge Tape Diagnostics menu, select the **Utility Options** and then select the **Log Bad Sector** option.

a. Insert the (formatted and retensioned) cartridge into the tape drive.
b. Enter the number of the bad page. Accept the Yes confirmation when the correct page number is shown on the screen.
c. There are other known bad pages to enter into the Bad Page Table.

Y N

| Go to step 18.

17. Answer Yes to the question, "More to go?." Return to step 16b.

18. Answer No to the question, "More to go?"

19. Type any character to return to the Cartridge Tape Diagnostics Menu.

20. Return to either step 10 or step 12.

NOTE: These steps will take approximately 60 minutes.

21. Create a Diagnostic Cartridge Tape by performing the following procedures:

    a. Perform the Clean Tape Heads procedure:

        1. Obtain the $\frac{1}{4}$" Data Head Cleaning Cartridge Kit (9R88432).
        2. Moisten the felt pad on the head cleaning cartridge with the cleaning solution and immediately insert the cartridge into the tape drive.
        3. Let the tape drive run for 30 seconds.
        4. Eject the head cleaning cartridge to stop the cleaning process.

    b. From the Cartridge Tape Diagnostics menu, select the **Utility Options**.

    c. From the Utility Options, select the **Format Tape** option.

    d. Insert a scratch cartridge that is write-enabled into the tape drive.

CAUTION

The Format utility will destroy the contents of the tape.

    e. After successful completion, type any character to return to the Cartridge Tape Diagnostics Menu. Do not eject the formatted tape.

    f. From the Cartridge Tape Diagnostics menu, select the **Subtest Options** and then select **Enter Subtests**.

    g. Type **34, 35** and press **<Return>** to enter the subtests to be run.

    h. When the Subtest Options appear again, select **Run Subtests**.

    i. Press **<Return>** to run **1** pass. The Cartridge Tape Drive will write Streams 6 and 7 with known data.

    j. Go to step 10.

3. Image Quality Repair Analysis Procedures

This section does not apply to this product.

Notes:

Section Contents

REP 4.1 Rear Cover

Parts List on PL 5.3

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Press the two rear cover tabs towards each other to release the cover (Figure 1).

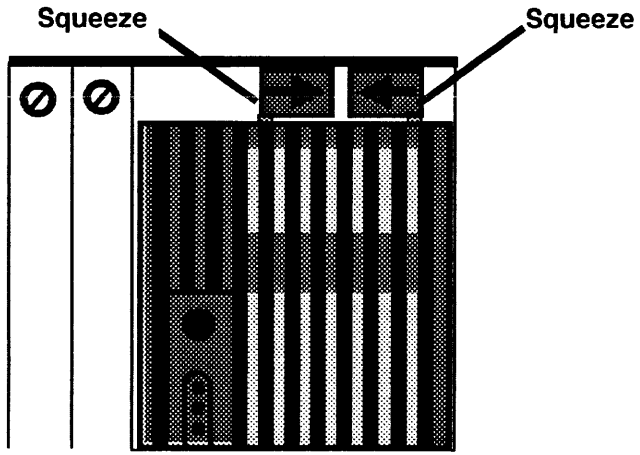


Figure 1. Unlatching the Rear Cover

4. Swing the rear cover down and disengage the power cords from the opening in the cover.
5. Remove the rear cover (Figure 2).
   a. While holding the cover to the right, squeeze the flange near the power cord slot to the right to release the left plastic stud from the detent.
   b. Twist the left cover stud up and out of the detent, then release the right cover stud.

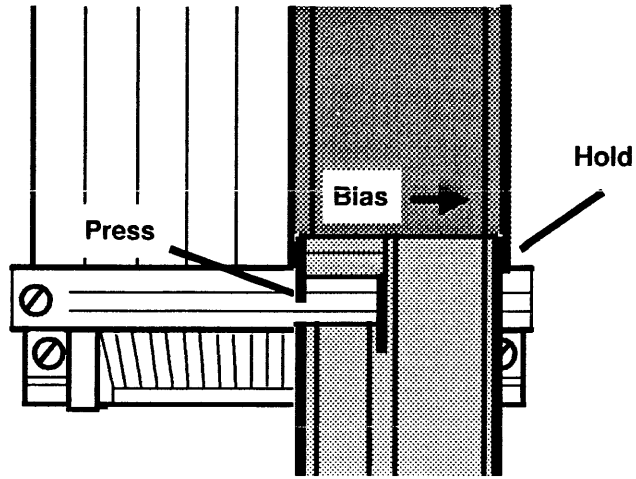


Figure 2. Rear Cover Removal

REP 4.2 Front Cover

Parts List on PL 5.3

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Remove the Rear Cover (4.1).
4. Unplug the AC and display power cords.
5. Unplug the floppy disk drive power cord, if present.
6. Unscrew the power supply thumbscrew and back the power supply out of the processor about one inch.
7. Rotate the processor to access the front.
8. If the unit has a removable rigid drive, open the drive compartment door.
9. Remove the front cover.
   a. Remove the two screws at the base of the front panel.
   b. Remove the front cover by sliding the cover up and then toward yourself.

Replacement

1. Reinstall the front cover.
   a. Place the front cover against the processor, slightly above the normal position.
   b. Press the cover against the processor and slide it down into place so that the five brass cover studs lock into the processor brackets.
2. Perform the removal procedure in the reverse order, starting with Step 9a.

REP 4.3 Cable Retainer Assembly

Parts List on PL 5.3

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Release the cables and power cords.
   a. Unscrew the cable retaining clamp screw (Figure 3) and swing the clamp away from the processor to free the cables.

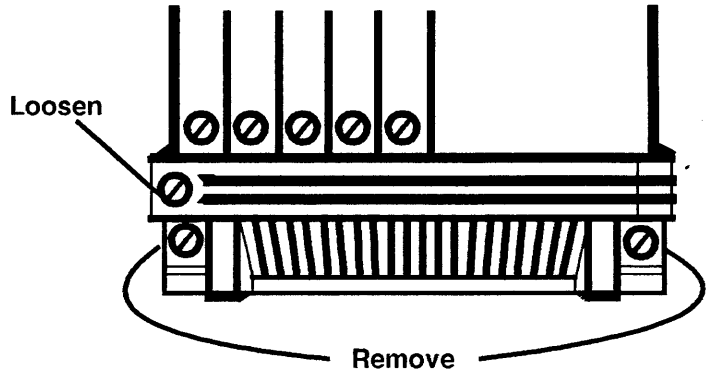


Figure 3. Cable Retainer Assembly

4. Remove the cable retainer assembly.
   a. Unscrew the two screws (Figure 3) and remove the retainer.
5. If it is necessary to replace the cable retaining clamp, remove it from the bottom rear cover by grasping the clamp firmly while holding the cover and twisting the clamp flanges out of the detents.

REP 4.4 Fan Assembly

Parts List on PL 5.3

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Remove the cable retainer assembly (4.3).
4. Remove the fan assembly (Figure 4).
   a. Grasp the metal lip of the fan assembly and firmly pull towards you.

Replacement

1. Insert the fan assembly so that it rests on top of the flanges in the processor base.
2. Gently slide the assembly into the processor, making certain that the electrical connector mates properly.
3. Perform the removal procedure in the reverse order.

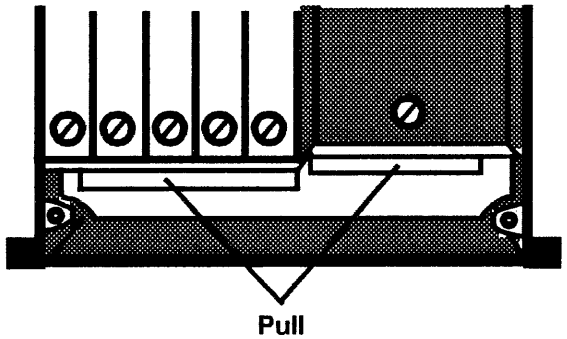


Figure 4. Fan Assembly

REP 4.5 Side Covers

Parts List on PL 5.3

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Remove the Rear Cover (4.1).
4. Unplug the AC and display power cords.
5. If present, unplug the floppy disk drive power cord and remove the floppy disk drive from the top of the processor.
6. Unscrew the power supply thumbscrew and back the power supply out of the processor about one inch.
7. Rotate the processor to access the front.
8. Remove the Front Cover (4.2).
9. Remove the side cover.
   a. Remove the two screws.
   b. Lift the side cover up and then out.
   c. Repeat Steps 9a and 9b for the other side.

Replacement

NOTE: In some cases it may be necessary to remove the top cover in order to replace the side covers. If this is the case, grasp the top cover by the edge on a side of the processor without a cover and lift towards the other side, then proceed to Step 1c.

1. Reinstall the side covers.
   a. Hold the bottom of the side cover away from the processor and slide the top edge up under the top cover.
   b. Mate the four tabs on the upper edge of the side cover with the four detents in the top cover. (Figure 5)
   c. Bring the bottom of the side cover in flush with the processor side.
   d. Pressing lightly against the side cover, slide it downward until the four plastic tabs on the inside of the cover slide into the detents on the processor.

e. (If the top cover has been removed in order to install the side cover, place it on the processor and allow it to settle into place.) Ensure that the top cover is seated correctly by pressing down firmly along the top edges until the cover detents snap securely onto the side cover tabs (Figure 5).

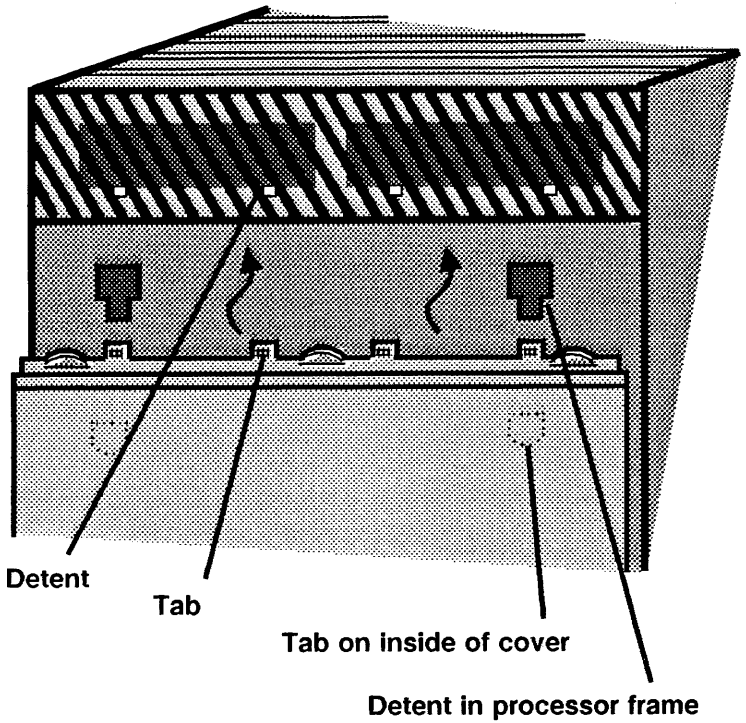


Figure 5. Side Cover Installation

2. Perform the removal procedure in the reverse order starting with Step 9a.

REP 4.6 Top Cover

Parts List on PL 5.3

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Remove the Rear Cover (4.1).
4. Unplug the AC and display power cords.
5. If there is a floppy disk drive present, unplug the power cord. If the floppy disk drive is mounted on top of the processor, remove it.
6. Unscrew the power supply thumbscrew and back the power supply out of the processor about one inch.
7. Rotate the processor to access the front.
8. Remove the Front Cover (4.2).
9. Remove one Side Cover (4.5).
10. Remove the top cover.
    a. Grasp the top cover by the edge on a side of the machine where a side cover was removed and lift it towards the other side of the processor.

Replacement

1. Place the top cover on the processor and allow it to settle in place. Press down firmly along the top edges until the cover detents snap securely onto the side cover tabs (Figure 5).
2. To complete the processor cover installation, perform the removal procedure in the reverse order.

REP 4.7 Backplane Assembly

Parts List on PL 5.3

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Remove the Rear Cover (4.1).
4. Release the cable retaining clamp (4.3).
5. Unplug the AC and display power cords, the floppy disk drive power cord if there is one, and all cables to the PWBs.
6. Remove the rigid disk drive from the processor.
7. Reach into cavity where the rigid disk drive was removed and unplug the fan assembly power cord from the backplane.
8. Unscrew the power supply thumbscrew and back the power supply out of the processor about one inch.
9. Back the PWBs out of the processor about one inch.
10. Rotate the processor to access the front.
11. Remove the Front Cover (4.2).
12. Remove the backplane cover plate, if there is one.
13. Remove the backplane.
    a. Remove the eight mounting screws (Figure 6) while leaving the screw in the center.
    b. Lift out the backplane.

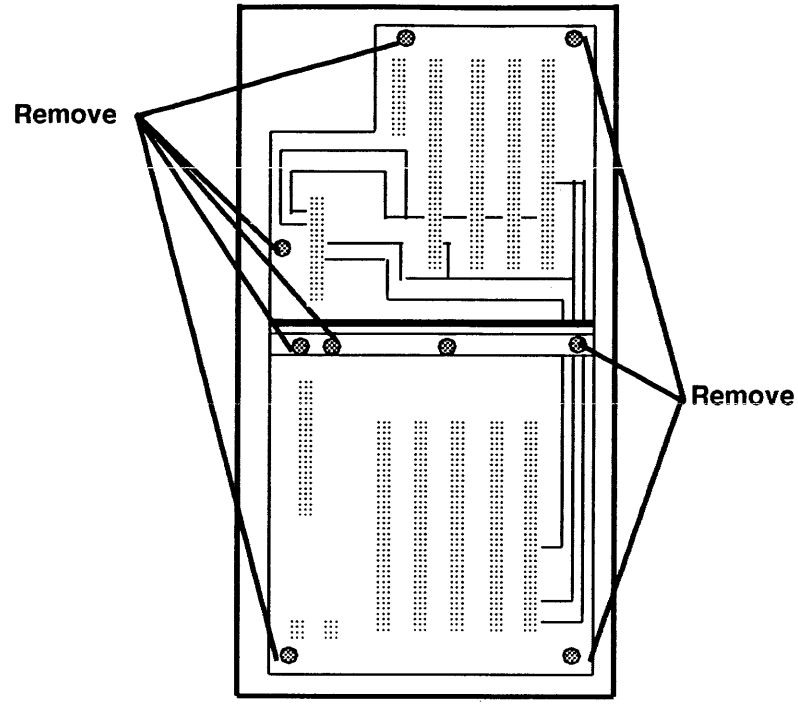


Figure 6. Backplane

Replacement

1. Perform the removal procedure in the reverse order, taking care to start all eight of the screws before tightening any of them.

NOTE: When you replace the PWBs, push each stiffener gently into place until the thumbscrews can be engaged. Forcing the stiffeners into the processor may damage the PWB connectors, the backplane, or the stiffeners.

REP 4.8 Power Supply

Parts List on PL 5.1

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Remove the Rear Cover (4.1).
4. Unplug the AC and display power cords.
5. Unplug the floppy disk drive power cord if there is one.

WARNING

High voltages are present in the power supply for 2 minutes after the AC power cord has been disconnected from the wall outlet. DO NOT REMOVE THE POWER SUPPLY COVER. There are no serviceable parts inside the Power Supply.

6. Unscrew the power supply thumbscrew.
7. Remove the power supply.

Replacement

1. Perform the removal procedure in the reverse order while taking care to properly align the PWB of the power supply in the top and bottom guide slots during installation.
2. Perform the +5 VDC Check (4.9).

REP 4.9 +5VDC Check

Parts List on PL 5.1

Check

1. Select the +20 volt DC scale on the digital multimeter (600T1616).
2. Connect the meter leads to the test points (Figure 7). It is not necessary to remove the rear cover to perform this check.
3. If the reading obtained is between +5.15 VDC and +5.25 VDC, it is within specifications and no adjustment is necessary.
4. If the reading is not correct, adjust the +5 VDC by turning the adjustment pot clockwise to raise the voltage or counterclockwise to lower the voltage. The resulting reading should be +5.2 VDC.
5. If the correct reading cannot be obtained by adjusting the pot, return to RAP 1.

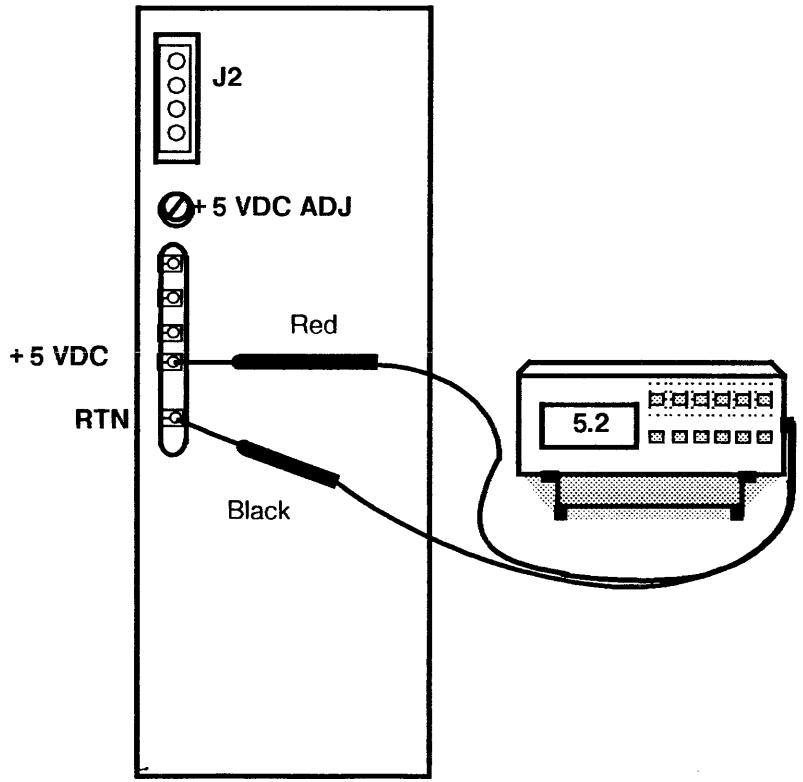


Figure 7. +5 VDC Check

REP 4.10 Rigid Disk

Parts List on PL 5.1

Removal

CAUTION

Replacement of the Rigid Disk Drive deletes customer files. This requires the restoration of files by the customer. BEFORE replacing the drive, call for assistance, then notify the customer's System Administrator or Network Coordinator. The customer MUST be notified BEFORE the Rigid Disk Drive is replaced. It is possible that the Systems Analyst will know a workaround procedure, and the drive will not need to be replaced. If the customer will not agree to have their drive replaced, contact the Systems Analyst for further instructions. NEVER REPLACE A DISK DRIVE WITHOUT FIRST NOTIFYING BOTH THE CUSTOMER AND THE SYSTEMS ANALYST.

NOTE: In June 1987, Manufacturing began installing VP Basic Workstation Software (BWS) on all spares coming off the line. Spares that have the BWS software loaded are labeled "VP X.X installed" in the plastic pouch of the Rigid Disk Drive containing the printed Bad Page Table.

1. Perform the Seek Safe Landing Zone procedure (4.26).
2. Switch off the system power.
3. **Processor Rigid Disk:** Access the back of the processor.
   Removable Rigid Disk: Pull open the Removable Rigid Drive (RRD) compartment.
4. **Processor Rigid Disk:** Remove the Rear Cover (4.1).
5. **Processor Rigid Disk:** Unplug the AC and display power cords.
6. **Processor Rigid Disk:** Unscrew the disk drive thumbscrew.
7. **Processor Rigid Disk:** Slide the rigid disk drive out of the processor.
   Removable Rigid Disk: Slide the rigid disk drive out of the compartment.

Replacement

NOTE: If the replacement drive is a 20MB rigid disk drive, proceed to the 20MB Rigid Disk Drive procedure 4.10.1.

1. Perform the removal procedure (except Step 1) in the reverse order.
   Processor Rigid Disk: Take care not to disturb the fan wiring harness connector at the backplane.

*NOTE: If you cannot boot the configuration utility, it may be because the configuration is set wrong. To resolve this problem, press and release the B Reset button. Press and release **<F1>**, then press and hold **<F9>** throughout the boot sequence.*

NOTE: Use only the current level of Off-Line Diagnostics to check and/or set the System Configuration Utility.

2. Check the system configuration using the System Configuration Utility (6.10). (Refer to the size/model label on the rigid disk drive cover assembly or, if improperly labeled, **Processor Rigid Disk:** Table 1, or **Removable Rigid Disk:** Table 2 on the next page.) The configuration is set to match the new disk drive.

   Y N

   | Set system configuration (6.10) then return to Step 3.

Table 1. Processor Rigid Disk Models

VENDOR MODEL	XEROX DRIVE SIZE/MODEL	
Seagate ST212	10MB Rigid Disk	-Model 1
Seagate ST213	10MB Rigid Disk	-Model 2
Tandon TM703	20MB Rigid Disk	-Model 1
Tandon TM703	T20MB Rigid Disk	-Model A
Tandon TM702	20MB Rigid Disk	-Model 2
Seagate ST4026	20MB Rigid Disk	-Model 2
Seagate ST4026	T20MB Rigid Disk	-Model B
Quantum Q530	20MB Rigid Disk	-Model 3
Quantum Q530	T20MB Rigid Disk	-Model C
Seagate ST225	20MB Rigid Disk	-Model 4
Seagate ST225	T20MB Rigid Disk	-Model D
Quantum Q540	40MB Rigid Disk	-Model 1
Micropolis 1303	40MB Rigid Disk	-Model 2
Seagate ST4051	40MB Rigid Disk	-Model 3
Seagate ST4051	T40MB Rigid Disk	-Model C
Seagate ST251	40MB Rigid Disk	-Model 4
Seagate ST251	T40MB Rigid Disk	-Model D
Micropolis 1325	80MB Rigid Disk	-Model 1

Table 2. Removable Rigid Disk Models

VENDOR MODEL	XEROX DRIVE SIZE/MODEL	
Seagate ST251	T40MB Rigid Disk	-Model D
Micropolis 1325	80MB Rigid Disk	-Model 1

3. There is a Xerox Bad Page Log with the new Rigid Disk Drive.

   Y N

   | Go to step 14.

4. Run Boot Diagnostics from floppy **<F6>** or from the Ethernet **<F7>**. Boot Diagnostics completed successfully by displaying the boot softkeys.

   Y N

   | Go to RAP 4.

5. Run the Off-Line Diagnostics **Confidence Test** for four passes from floppy **<F2>** or from the Ethernet **<F3>**. The Confidence Test passed.

   Y N

   | Go to RAP 9.

6. Run **Verify Disk Surface** for four passes with four retries. There are bad pages listed.

   Y N

   | Go to step 9.

7. Record any bad pages.

8. Compare the bad pages on the Xerox Bad Page Log with the ones found above. Record any additional bad pages that were found that are not on the Xerox Bad Page Log. The bad pages on the Xerox Bad Page Log are the same as the ones found above.

   Y N

   | Go to step 14.

9. Boot the system by pressing **<F1>**. The bouncing keyboard appears.

   Y N

   | Go to step 11.

10. Go to Final Actions.

11. Partition the rigid disk and install Basic Workstation Software (6.14 or 6.15). Boot the system by pressing **<F1>**.

12. The system boots successfully.

    Y N

    | Call for assistance.

13. Go to Final Actions.

14. Use the **Display Bad Pages** utility to record any bad pages listed in the Bad Page List. The Bad Page Table is displayed.

    Y N

    | Go to step 19.

15. Record any bad pages.

NOTE: Some of the Manufacturer's bad pages may be out of range and cannot be entered due to the logical disk size limitations (areas not accessed by the software). However, this is not a problem as long as the correct Disk Drive Model number was entered during configuration.

16. Using the bad pages recorded for entry in previous steps, enter any additional bad pages that are not listed by using the **Manual Entry of Bad Pages** utility.

17. Run the Off-Line Diagnostics Confidence Test for four passes from floppy **<F2>** or from the Ethernet **<F3>**. The Confidence Test passed.

    Y N

    | Call for assistance.

18. Place a copy of the bad page table next to the Rigid Disk Drive. Proceed to step 9.

NOTE: Formatting the Rigid disk drive creates a physical volume and logs bad pages into the table automatically.

19. Run **Format Rigid Disk** for 11 passes with zero retries from floppy **<F2>** or from Ethernet **<F3>**.

20. Go to step 11.

REP 4.10.1 20MB Rigid Disk Drive

Parts List on PL 5.1

Replacement

Whenever a 20MB Rigid Disk Drive is replaced, it must be upgraded, if required, to an Expanded Capacity Rigid Disk Drive system. Use the following procedure whenever replacing any 20MB Rigid Disk Drive (Standard or Expanded Capacity).

NOTE: The 20MB Standard Capacity Rigid Disk Drive part number is 121S02231, and the T20MB Expanded Capacity Rigid Disk Drive part number is 121S02237. The term T20MB refers only to the Expanded Capacity Rigid Disk Drive, part number 121S02237.

NOTE: If both the failed and the replacement rigid disk drives are T20MB drives and the customer is currently running ViewPoint 1.1 or higher level software, perform the rigid disk replacement procedure (4.10).

NOTE: The label for a T20MB (91E15830) is required if the replacement rigid disk drive is a Standard Capacity Rigid Disk Drive.

1. The failed rigid disk drive is a T20MB.

   Y N

   | Go to step 7.

2. The replacement rigid disk drive is a T20MB.

   Y N

   | Go to step 8.

3. The Rigid Disk Drive Upgrade is complete. If the replacement rigid disk drive was reformatted in a previous step, the drive must be partitioned, and the software reloaded. Perform the appropriate procedures for Software Installation (6.14 or 6.15).

4. Press the B Reset button and press **<F1>** to start the system.

NOTE: During startup time, the following cursor codes may appear for an extended period of time: [7600], [7700], and [7800]. After approximately 15 minutes, the bouncing keyboard appears on the screen, indicating that VP Software has been installed and successfully started.

If a **[7511]** code, a **[7600]**, **[7700]**, or **[7800]** and **[9999]** series of codes appear, refer to the appropriate procedures for Software Installation (6.14 or 6.15) and continue with the next step.

5. The customer is currently running ViewPoint 1.1 or higher level software.

   Y N

   | Go to step 9.

6. Go to Final Actions.

NOTE: Use Diagnostics Floppy Disks whenever possible. Use the Ethernet for an Off-Line Diagnostic source only if 10.0 (or higher) level services are available.

7. **Reconfigure** the 6085 PCS by performing the following:

   a. Press the B Reset button. After the Boot Softkeys are displayed, load either the Floppy or Ethernet Off-Line Diagnostics. **Floppy** - Insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive, press **<F2>**, and then follow the displayed instructions for inserting the next disk. **Ethernet** - Press **<F3>** and select Off-Line Diagnostics when the Network Executive appears.
   b. From the Logon Menu, select **Normal User**.
   c. In the Available Selections menu, select **System Configuration Utility**.
   d. Set the System Configuration for the Expanded Capacity rigid disk drive by performing the following steps:

      - From the System Configuration Utility menu, select **Set Configuration**.
      - Accept the default selection for all configuration selections except the rigid disk drive selection.

NOTE: For the 20MB Rigid Disk Models 1, 2, 3, and 4, the Expanded Capacity rigid disk selection is T20MB Rigid Disk Models A, B, C, and D, respectively.

      - Enter the appropriate Expanded Capacity rigid selection.
      - Confirm and accept the correct System Configuration. If incorrect, return to Set Configuration and repeat the previous steps for resetting configuration.

NOTE: Rebooting is required for the system configuration changes to take effect.

   e. Press the B Reset button.
   f. Return to Step 2.

NOTE: Use the Ethernet for an Off-Line Diagnostic source only if the software is VP 1.1 or higher level.

8. **Reformat** and relabel the Standard Capacity Rigid Disk Drive by performing the following:

   a. Press the B Reset button. After the Boot Softkeys are displayed, load either the Floppy or Ethernet Off-Line Diagnostics. **Floppy** - Insert the Off-Line Diagnostics Disk labeled System Bootfiles into the floppy disk drive, press **<F2>**, and then follow the displayed instructions for inserting the next disk. **Ethernet** - Press **<F3>** and select Off-Line Diagnostics when the Network Executive appears.
   b. From the Logon Menu, select **Technical Support** and enter the password.
   c. In the Available Selections menu, select **Formatter, Scavenger and Bad page utilities**, and type **<Y>** to "Is this disk formatted?"
   d. From the Formatter, Scavenger and Bad Page Utilities menu, select **Format Rigid Disk**.
   e. Format the rigid disk with 11 passes and zero retries by making appropriate selections and confirmations.

NOTE: Formatting the rigid disk drive automatically creates a physical volume and logs any bad pages found during the Format sequence into the Bad Page Table.

   f. Formatting completes successfully.

      Y N

      | Go to RAP 9.

   g. New Bad pages were found.

      Y N

      | Go to step L.

   h. Select the **Combine** option to combine the Preformat Bad Page Table with any new bad pages.
   i. Return to Formatter, Scavenger, Bad Page utilities menu and select Bad Page Utilities. From the **Bad Page Utilities** menu select **Display Bad Pages**.
   j. Use the Bad Page List to compare all of the bad pages listed on the Xerox Error Log (in the plastic pocket on the rigid disk drive). Record any additional bad pages not listed in the Bad Page List for entry in the next step.

k. Enter any additional bad pages recorded in the previous step by performing the following procedures:

- From the Bad Page Utilities menu, select **Manual Entry Of Bad Pages**.
- From the Manual Entry Of Bad Pages menu, select Enter By Page Number and enter each of the additional pages.

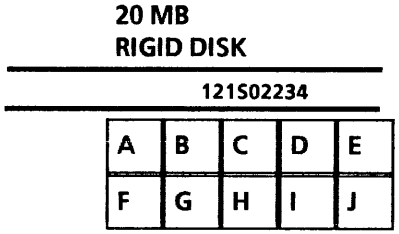
l. Run the Confidence Test by performing the following steps:

- Return to the Available Selections menu and select **Rigid Disk Tests.**
- From the Rigid Disk Tests menu, select **Confidence Test** and the run the test for two passes. If the test fails, proceed to RAP 9.

m. Add any additional bad page numbers to the hardcopy of the error log and place it back into the plastic pocket on the rigid disk drive.

NOTE: For the 20MB Rigid Disk Models 1, 2, 3, and 4, the Expanded Capacity rigid disk selection is T20MB Rigid Disk Models A, B, C, and D, respectively.

n. Relabel the upgraded rigid disk drive by placing the new label decal (91E15830) over the original label. Mark the appropriate letter (A, B, C, etc.) on the label matrix to identify the upgraded model.



o. Return to Step 3.

9. Inform the customer that a copy of the System Configuration Utility that supports the Expanded Capacity Rigid Disk Drive feature is required. The customer has this level of Diagnostic floppies.

Y N

| Go to step 11.

10. Go to Final Actions.

11. Ask the customer for blank floppy diskettes. (To ensure the customer will receive the latest level of Off-Line Diagnostics, use only the latest level of Off-Line Diagnostics floppy disks as a copying source.) Perform the following **Copy Disk** procedures to copy the Off-Line Diagnostics Disks.

NOTE: To ensure the customer will receive the latest level Off-Line Diagnostics, use only the latest level Off-Line Diagnostics floppy disks as a copying source.

a. Press the B Reset button. After the Boot Softkeys are displayed, load either the Floppy or Ethernet Off-Line Diagnostics. Insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive, press **<F2>**, and then follow the displayed instructions for inserting the next disk.

b. From the Logon Menu, select **Normal User**.

c. In the Available Selections menu, select **Floppy Disk Utility**.

d. From the Floppy Disk Utility menu, copy the Off-Line Diagnostics Disks onto customer floppy diskettes by alternately using the Read Master and Make Copy commands.

e. Relabel the new level floppies to identify the diagnostic version. (For example, label the disks as 6085 Offline Diagnostics 1.5, 3Q87: System Bootfile, Workstation Diagnostics, 7650 Pro-Imager Diagnostics, and Boot Diagnostics.) Give them to the customer.

12. Go to Final Actions.

REP 4.11 Floppy Disk Drive

Parts List on PL 5.3

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Remove the Rear Cover (4.1).
4. Disconnect the floppy disk drive power cord.
5. Disconnect the floppy disk drive cable from the IOP PWB and the drive.
   a. Loosen the thumbscrews that secure the cable.
6. Pull the drive assembly up until the mounting clips release.

Replacement

1. Install the tops of the four "M" shaped mounting clips in the slots located on the bottom of the drive assembly (Figure 8A).

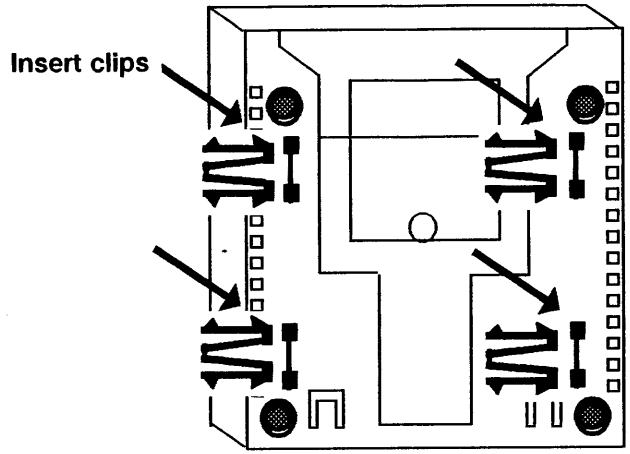


Figure 8A. Cartridge Tape Drive or Floppy Disk Drive (Bottom View)

2. Place the drive assembly with the mounting clips on the processor and align the clips with the slots in the top of the processor. Press firmly until the assembly snaps into place.
3. Perform the removal procedure in the reverse order, starting with Step 5a.

REP 4.11.1 Cartridge Tape Drive and Floppy Disk Drive

Parts List on PL 5.3

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Remove the Rear Cover (4.1).
4. Disconnect the floppy disk drive power cord.
5. Disconnect the floppy disk drive cable from the IOP PWB and the cartridge tape drive by loosening the thumb screws that secure the cable.
6. Disconnect the cartridge tape drive cable from both the floppy disk drive and the cartridge tape drive.
7. Pull the cartridge tape drive assembly up until the mounting clips release.

Replacement

1. Verify that the cartridge tape drive jumper settings are correct and that the terminator has been removed (Figure 8B).
   a. Open the cartridge tape drive housing by grasping the sides of the top cover and, while pulling outward, lift the cover up.
   b. Remove the four screws securing the drive to the base of the housing.
   c. Turn the drive over and compare the PWB with the diagram.
   d. Reinstall the drive and the top cover onto the housing.
2. Install the tops of the four "M" shaped mounting clips in the slots located on the bottom of the cartridge tape drive assembly (refer to Figure 8A).
3. Place the cartridge tape drive assembly with the mounting clips on the processor and align the clips with the slots in the top of the processor. Press firmly until the assembly snaps into place.
4. Place the floppy disk drive assembly (without the mounting clips) on the desktop.
5. If installing the Cartridge Tape Upgrade, replace the Boot PROMs in the IOP PWB (4.13) with the Cartridge Tape Drive Boot PROM Kit (73K46581).
6. Perform the removal procedure in the reverse order, starting with Step 6.
7. Go to RAP 18 and perform the Cartridge Tape Drive Checkout.

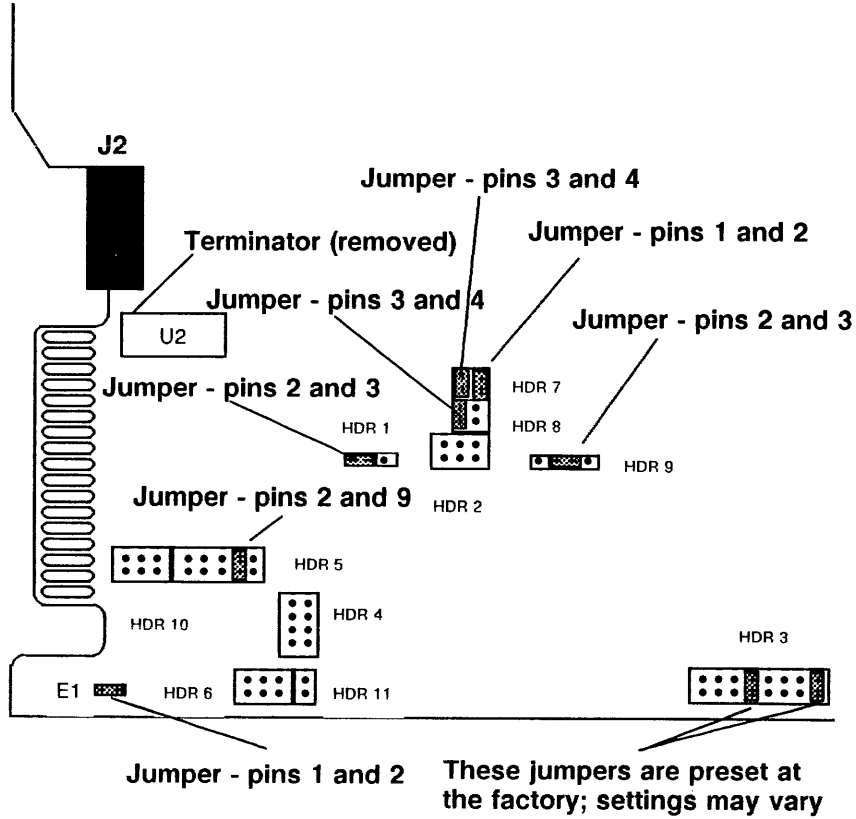


Figure 8B. Cartridge Tape Drive Jumper Locations

REP 4.12 IOP PWB

Parts List on PL 5.1

Removal

CAUTION

If the system identification number (contained in the ID PROM on the IOP PWB) changes, it may cause the system to be ignored by the Ethernet Network or give an indication that the software is not configured. Any time that you are directed to replace the IOP PWB, you will need to transfer the ID PROM and the EEPROM to the new PWB. If the ID PROM is replaced, the System Administrator must be notified. If the EEPROM is replaced, the new EEPROM must be reconfigured.

NOTE: Any time that you are directed to replace the IOP PWB, you will also need to transfer the Cartridge Tape BOOT PROMs, U223 and U196. Use Procedure 4.13 to transfer the BOOT PROMs.

1. Switch off the system power.
2. Access the back of the processor.
3. Release the cable retaining clamp (4.3).
4. Disconnect all of the cables attached to the IOP PWB.
5. Loosen the two thumbscrews on the IOP PWB and gently pull the board from the processor.

CAUTION

The ID PROM and the EEPROM can be damaged by static electricity. To prevent damage, always handle IC chips by the ends. DO NOT handle chips by their leads.

6. Locate the ID PROM and the EEPROM on the old IOP PWB (Figure 9) and remove them for use with the new IOP PWB.
   a. Use the IC Chip removal procedure (4.17).

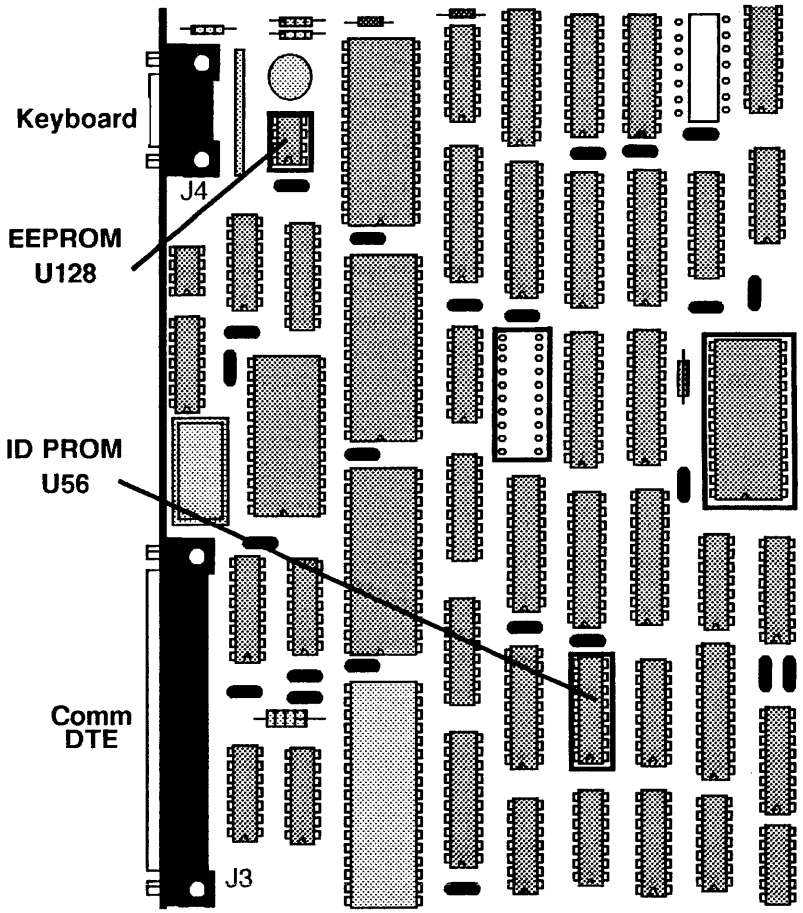


Figure 9. ID PROM and EEPROM Location

NOTE: When replacing an IOP PWB, be sure to compare the part number of the replacement PWB with that of the one you are replacing. Never replace an IOP PWB with a lower numbered PWB unless that PWB has been identified as a valid alternate. A PWB with a higher number may always be used as a replacement.

Replacement

1. Reinstall the ID PROM and the EEPROM using the IC Chip replacement procedure (4.17).
2. Push the stiffener gently back into the processor only until the thumb screws can be engaged. Forcing the stiffener into the processor may damage the PWB connectors, the backplane, or the stiffener. Tighten the two thumbscrews finger tight.
3. To complete the replacement of the IOP PWB, perform the removal procedure in the reverse order, starting with Step 4.
4. Perform the System Configuration Utility (6.10) to ensure the proper configuration.

REP 4.13 Boot and RDC PROMs

Parts List on PL 5.3

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Release the cable retaining clamp (4.3).
4. Disconnect all of the cables attached to the IOP PWB.
5. Loosen the two thumbscrews on the IOP PWB and gently pull the board from the processor.

CAUTION

The BOOT or RDC PROMs (EPROMs) can be damaged by static electricity. To prevent damage, always handle IC chips by the ends. DO NOT handle chips by their leads.

6. Locate either the Boot or RDC PROMs (whichever you have been directed to replace) on the IOP PWB (Figure 10 or 11) and remove them using the IC Chip removal procedure (4.17).

Replacement

1. Replace the Boot or RDC PROMs.
   a. Place the PROM over the correct socket with the notches aligned.
   b. Carefully line the chip leads up with the socket holes.
   c. Gently press the chip into place with your thumb, checking that the leads remain straight.
2. Push the IOP PWB gently back into the processor only until the thumbscrews can be engaged. Forcing the PWB into the processor may damage the PWB connectors, the backplane, or the stiffener. Tighten the two thumbscrews finger tight.
3. To complete the replacement of the IOP PWB, perform the removal procedure in the reverse order, starting with Step 4.
4. If the Boot PROMs are replaced as part of the Cartridge Tape upgrade, perform the System Configuration Utility (6.10).
5. If the Boot PROMs are replaced as part of the Cartridge Tape upgrade, go to RAP 18 and perform the Cartridge Tape Drive Checkout.

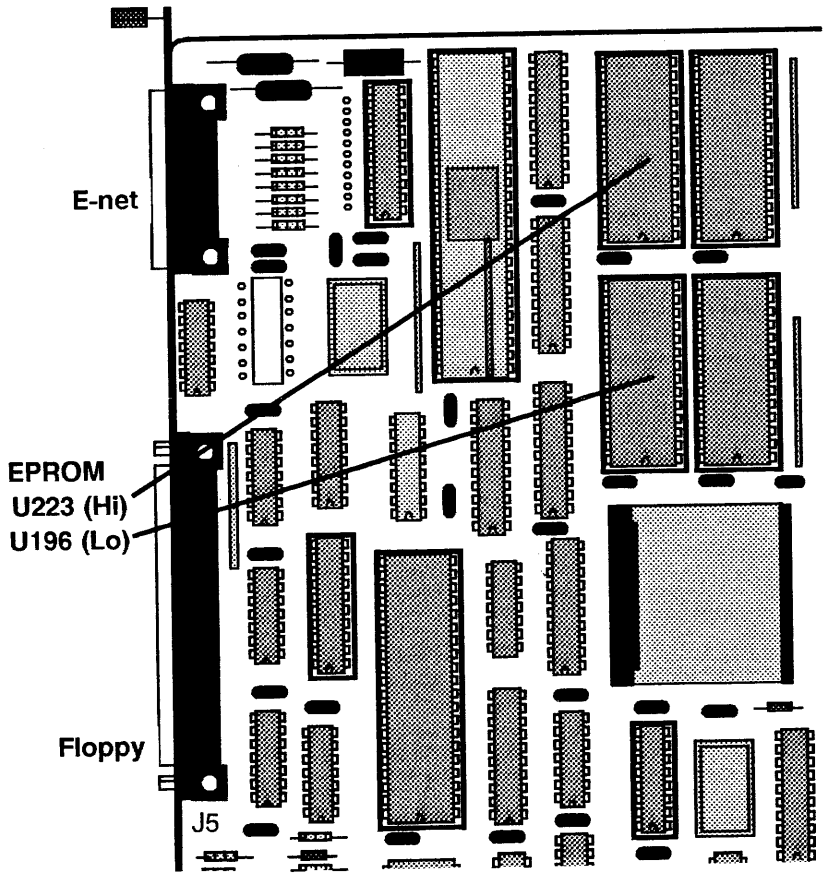


Figure 10. Boot PROM Locations

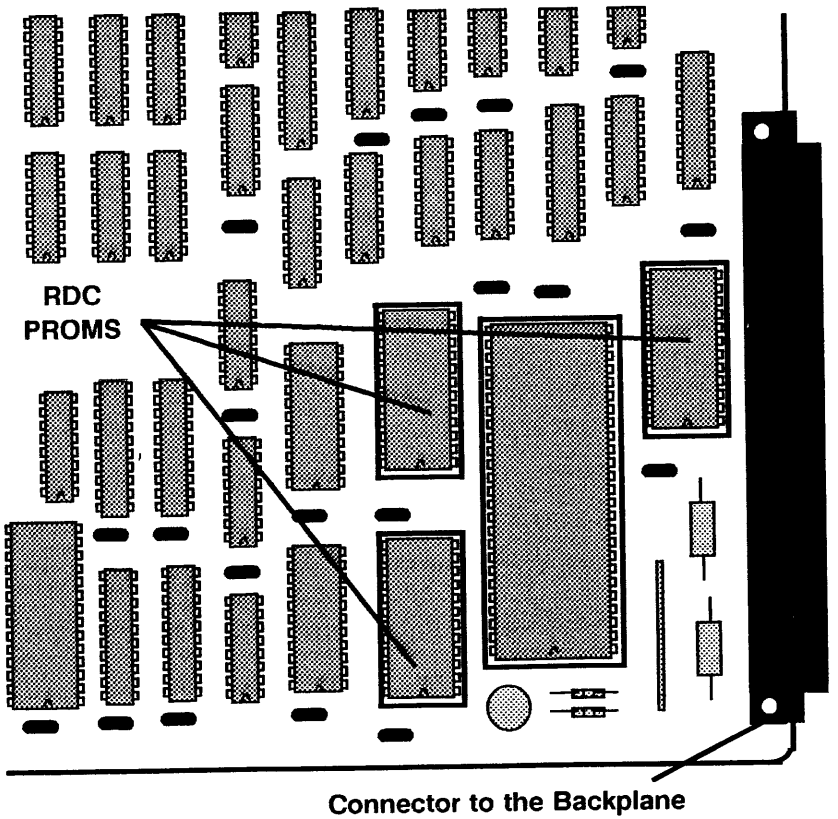


Figure 11. RDC PROM Locations

REP 4.14 Finger Stock

Parts List on PL 5.1

All 6085s require finger stock replacement whenever two consecutive fingers, or four fingers from one strip are missing or broken.

Maintaining the integrity of the finger stock is very important, especially for Class B Processors. It helps contain the high frequency emissions associated with the processor. To maintain FCC certification, observe the condition of the finger stock on the Class B processors. Missing fingers can result in excessive emissions which will cancel the Class B rating. The data label, located below the processor serial number plate, denotes the class rating.

The finger stock is an adhesive backed strip of copper which can be cut to length. After the finger stock is completely removed, the new finger stock should be applied in its place.

Removal

1. Switch off the system power.
2. Access the appropriate area.

   Removable Rigid Drive:

   a. Open the rigid disk drive compartment.
   b. Remove the rigid drive.

   PWB:

   a. Access the back of the processor.
   b. Release the cable retaining clamp (4.3).
   c. Disconnect all of the cables attached to the PWB.
   d. Loosen the two thumbscrews on the PWB and gently pull the board from the processor.

NOTE: If it is difficult to remove a PWB, lower the rear door. Next, loosen the thumbscrews of the C1 and C5 PWBs. Bias the C1 PWB toward its adjacent wall and tighten the fasteners, and then bias the C5 PWB toward its adjacent wall and tighten the fasteners, so that most of the inward pressure from these PWBs is alleviated. The C2, C3, and C4 PWBs can alternately be removed and replaced. All PWBs must meet the Class B requirements.

CAUTION

The ID PROM and the EEPROM of the IOP PWB, and the memory chips of the MEB and MPB PWBs can be damaged by static electricity. To prevent damage, always handle PWBs by the edges.

3. Peel the entire strip to be replaced.
4. Clean off the residue.

Replacement

1. Determine the size of the finger stock to be replaced.

   Removable Rigid Drive: There are different sizes of finger stock, depending on the location. The finger stock is pre-cut to the appropriate length.

   PWB: Replace the entire strip. Cut the finger stock to match the previous strip.

2. Peel the backing.

3. Install the new finger stock in the original position.

CAUTION

Install with the flat end in the same direction as the original finger stock.

   Removable Rigid Drive: There are different sizes of finger stock, depending on the location. Center the finger stock around the cable connector.

   PWB: Install the finger stock with the flat end toward the front of the PWB shield (Figure 12). The finger stock should be installed on the back side of the PWB Assembly, on the bare metal surface of the shield, not on the painted surface.

4. Perform the removal procedure in the reverse order, starting with step 2.

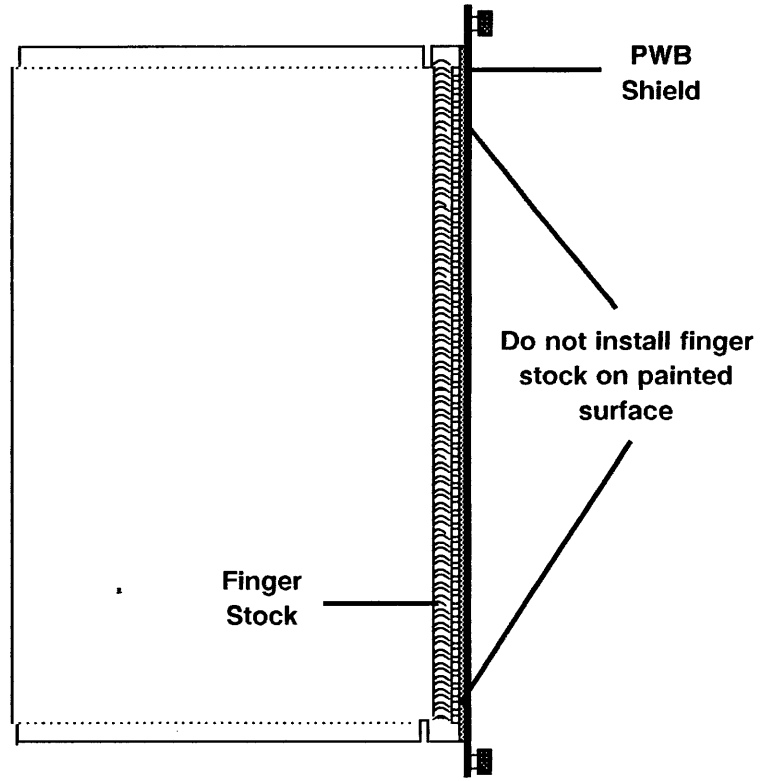


Figure 12. PWB Finger Stock

REP 4.15 MEB PWB Memory Chips

Parts List on PL 5.3

NOTE: Use this procedure to install memory upgrade IC chips on the MEB PWB.

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Release the cable retaining clamp (4.3).
4. Loosen the two screws on the MEB PWB and gently pull the board from the processor.

CAUTION

The memory chips can be damaged by static electricity. To prevent damage, always handle IC chips by the ends. DO NOT handle chips by their leads.

Replacement

NOTE: Memory chips are always installed in banks of 18 chips.

1. Determine where the memory chips will be installed (Figure 13).
   a. Each row of memory chips is installed directly above the last full row. (For example, the second row of chips is located in positions U27, U36, U45, U54, U59, U68, U75, U82, U88, U93, U102, U111, U120, U125, U134, U143, U148, and U157.)
2. Install the memory chips using the IC Chip replacement procedure (4.17).

NOTE: In order to install the top bank of memory chips, you need to remove the PWB from the stiffener so that the IC sockets are accessible.

3. Mark the matrix tag on the MEB PWB to reflect the size of the memory that is installed. Use the information in Table 3 to determine the correct letter to mark.

Table 3. Memory Sizes

Matrix Letter	MEB PWB Memory Size	Rows of ICs on MEB	Total System Memory Size
none	.5 MB	one	1.6 MB
A	1.1 MB	two	2.1 MB
B	1.6 MB	three	2.6 MB
C	2.1 MB	four	3.2 MB
D	2.6 MB	five	3.7 MB

4. If the MEB PWB has been removed from the stiffener in order to access the top row of IC sockets, reinstall it on the stiffener.
   a. Place the PWB in the correct position on the stiffener and line up the screw holes.
   b. Start each of the screws but do not tighten it down.
   c. Tighten the screws, being careful not to create a bow in the PWB.
5. Push the stiffener gently back into the processor only until the thumbscrews can be engaged. Forcing the stiffener into the processor may damage the PWB connectors, the backplane, or the stiffener. Tighten the two thumbscrews finger tight.
6. To complete the replacement of the MEB PWB, perform the removal procedure in the reverse order.
7. Run the System Configuration Utility (6.10) and update it to reflect the additional memory.

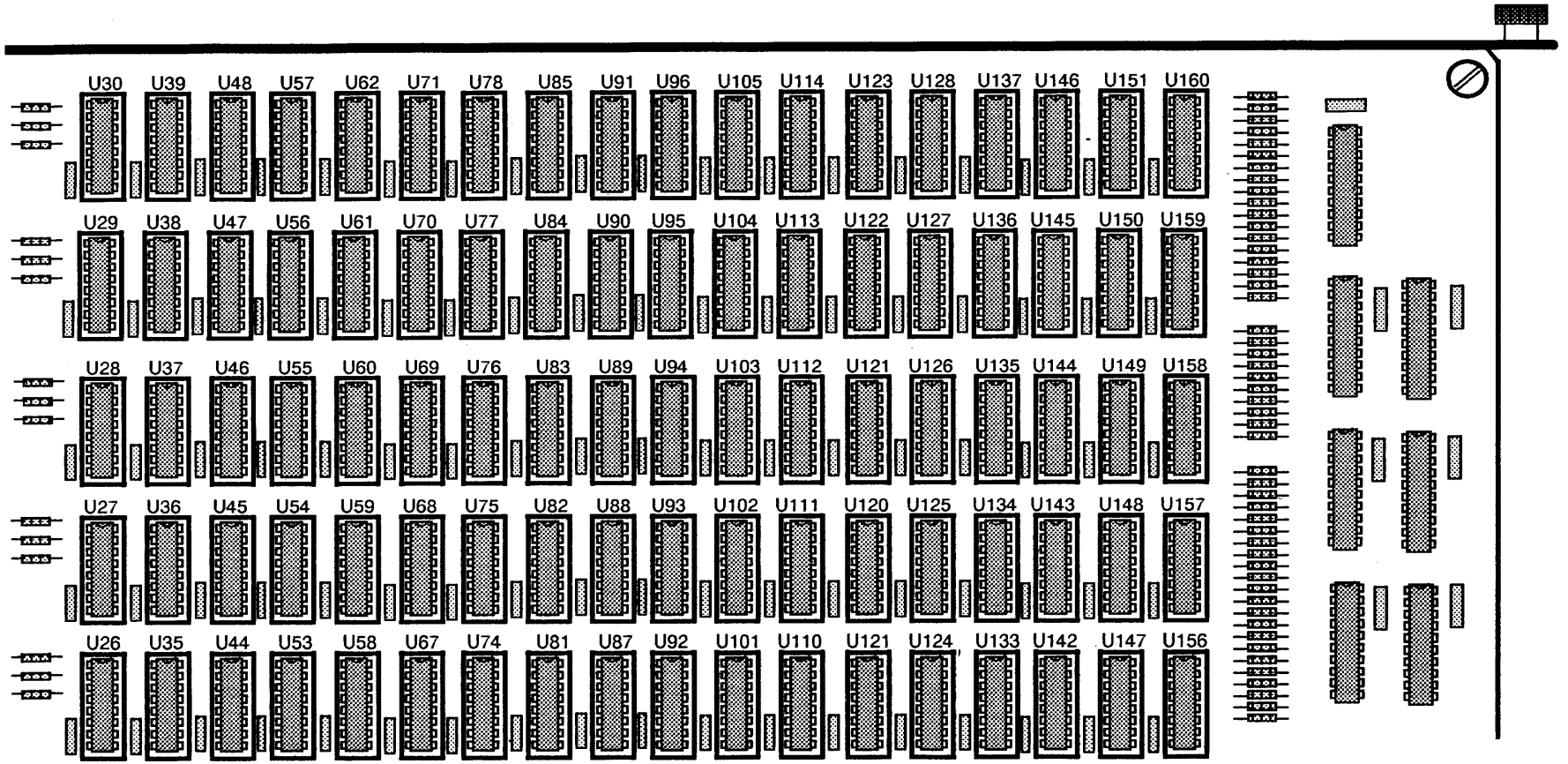


Figure 13. MEB PWB (shown fully loaded)

REP 4.16 MPB PWB

Parts List on PL 5.1

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Release the cable retaining clamp (4.3).
4. Loosen the two thumbscrews on the MPB PWB and gently pull the board from the processor.
5. If you are transferring the Control Store IC chips from a defective PWB to its replacement, remove the Control Store chips using the IC Chip removal procedure (4.17).

CAUTION

The memory chips can be damaged by static electricity. To prevent damage, always handle IC chips by the ends. DO NOT handle chips by their leads.

Replacement

1. Locate the sockets that will receive the 12 chips (Figure 14 or 14A).

NOTE: Check the part number of the MPB PWB to determine whether to use Figure 14 or 14A to locate the control store chip sockets. Figure 4-14 is used with the 140K0416X series of MPB PWBs and Figure 4-14A is used with the 140K0557X series of MPB PWBs.

NOTE: If the failed MPB PWB is part number 140K05571 or earlier, the 8K Control Store chips, if installed, will not work with MPB PWB part number 140K05572 or later. If you are installing an MPB PWB with part number 140K05572 or later, and the customer requires 8K Control Store, a new Control Store Upgrade Kit (Product Code 75D) is required.

2. Install the memory chips using the IC Chip replacement procedure (4.17).
3. Push the stiffener gently back into the processor only until the thumbscrews can be engaged. Forcing the stiffener into the processor may damage the PWB connectors, the backplane, or the stiffener. Tighten the two thumbscrews finger tight.
4. To complete the replacement of the MPB PWB, perform the removal procedure in the reverse order.
5. If you have installed the 4Kw Control Store upgrade, mark the letter "A" on the MPB PWB matrix tag.
6. If you have installed the 4Kw Control Store upgrade, run the System Configuration Utility (6.10) and update it to reflect an 8Kw Control Store.

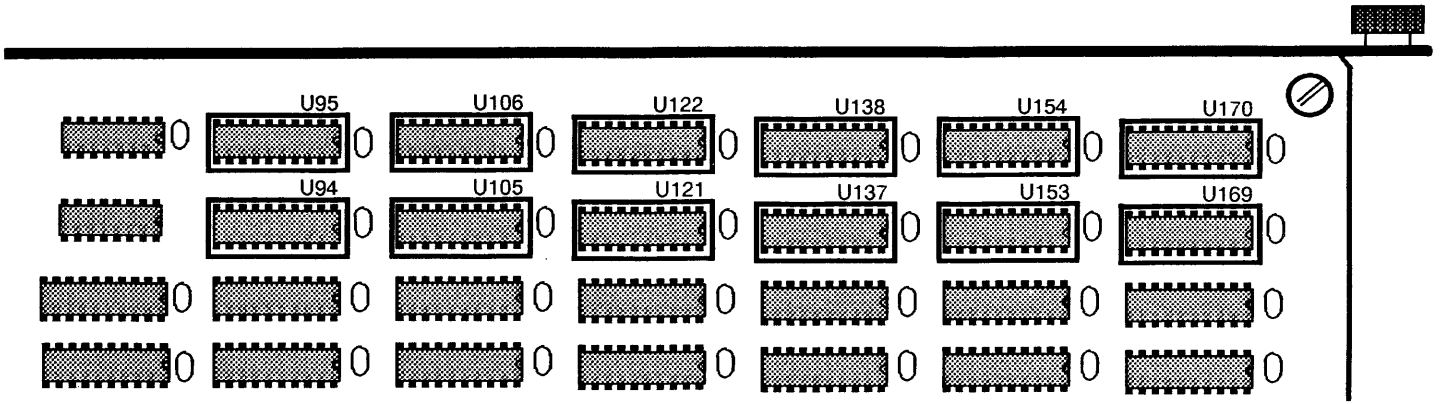


Figure 14. MPB PWB - 140K0416X Series

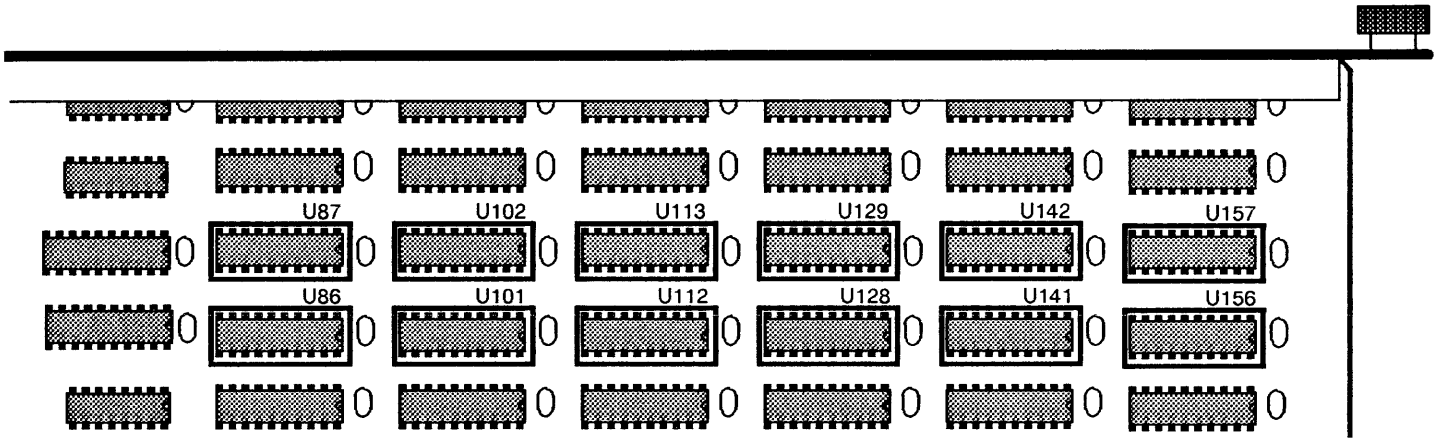


Figure 14A. MPB PWB - 140K0557X Series

REP 4.17 IC Chips

Parts List on PL 5.3

Removal

1. Switch off the system power.
2. Release the cable retaining clamp (4.3).
3. Remove the PWB that needs to have an IC Chip replaced.

CAUTION

Memory chips can be damaged by static electricity. To prevent damage, always handle IC chips by the ends. DO NOT handle chips by their leads.

4. Remove the IC Chip using the Chip Removal Tool (600T80042).
   a. Squeeze the two legs of the tool together so that the IC chip is held firmly (Figure 15).
   b. Gently rock the IC tool back and forth, alternately lifting each end of the chip, until the IC is free from the socket.

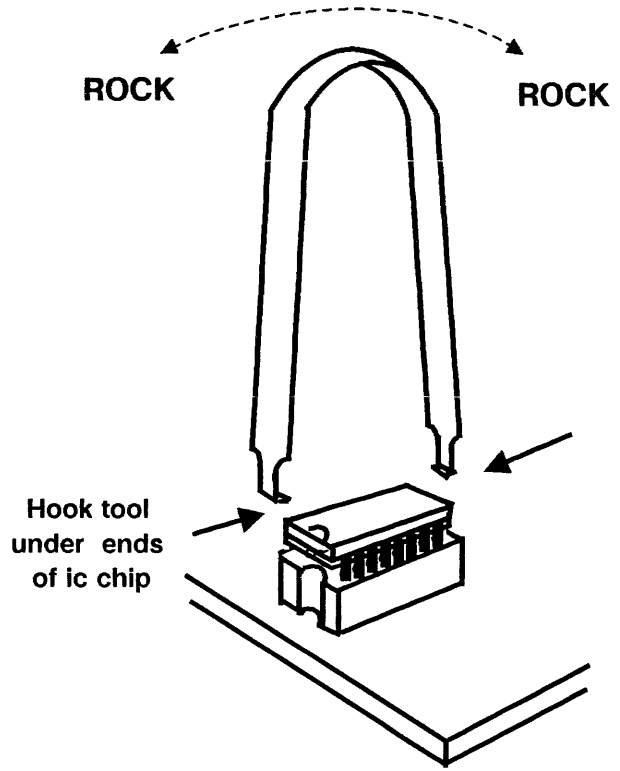


Figure 15. IC Chip Removal

Replacement

CAUTION

Memory chips can be damaged by static electricity. To prevent damage, always handle IC chips by the ends. DO NOT handle chips by their leads.

1. Inspect the new IC Chip. If the pins are straight, go to Step 4. If the pins are bent outward, go to Step 2. If the pins are bent inward, go to Step 3. If some pins are bent outward and some are bent inward, perform Step 2 and Step 3.
2. If the pins are bent outwards, they must be straightened before the IC Chip can be installed (Figure 16).
   a. Select the insertion tool for IC chips with 14 to 16 pins (600T80037), or the insertion tool for IC chips with 18 to 20 pins (600T80041) as required.
   b. Gently push the IC chip into the correct insertion tool with your fingers or place the IC chip on a flat surface and use the tool to pick up the IC chip, rocking the tool back and forth gently. (When using the 14 to 16 pin insertion tool [600T80037] to pick up an IC chip, you must depress the ejector button.)
   c. Proceed to Step 5.

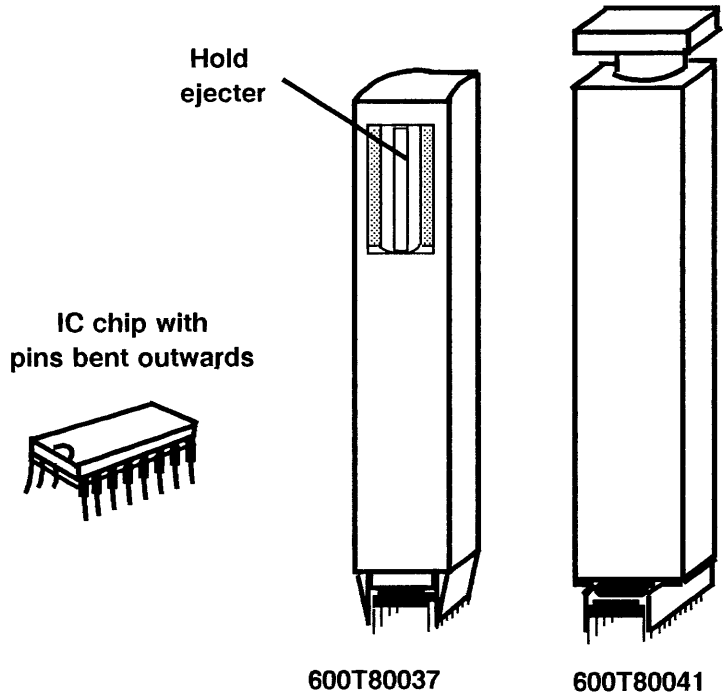


Figure 16. Straightening Bent IC Chip Pins

3. If the pins are bent inward, they must be straightened before the IC Chip can be installed (Figure 17).
   a. Push the IC chip into the pin straightener portion of the IC Insertion Tool (600T80037).
   b. Gently rock the IC back and forth to straighten the pins.
   c. Eject the IC chip from the insertion tool by pushing the spring loaded base of the tool against a flat surface.
   d. Proceed to Step 4.

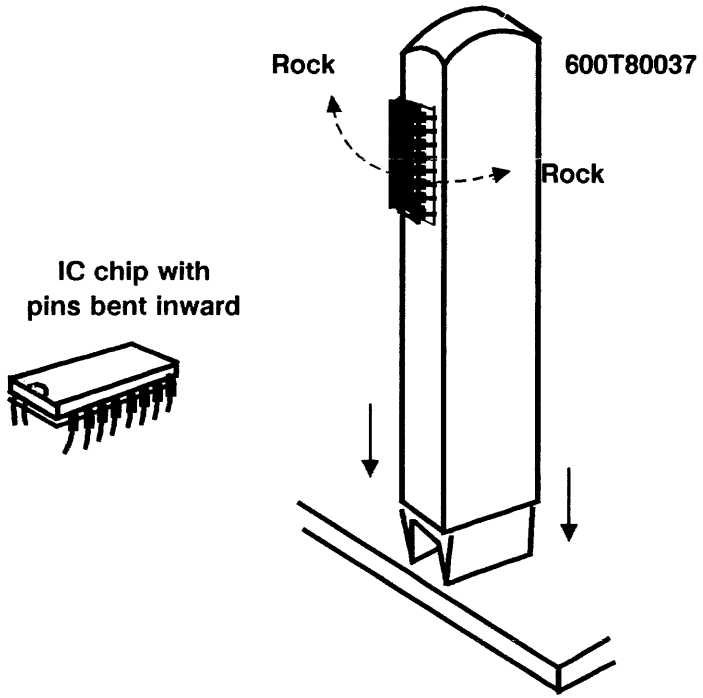


Figure 17. Straightening Bent IC Chip Pins

4. Place the IC Chip in the Insertion Tool.
   a. Select the insertion tool for IC chips with 14 to 16 pins (600T80037), or the insertion tool for IC chips with 18 to 20 pins (600T80041).
   b. Gently push the IC chip into the correct insertion tool with your fingers or place the IC chip on a flat surface and use the tool to pick up the IC chip, rocking the tool back and forth gently. (When using the 14 to 16 pin insertion tool [600T80037] to pick up an IC chip, you must depress the ejector button.) (Figure 16)

CAUTION

Memory chips can be damaged by static electricity. To prevent damage, always handle IC chips by the ends. DO NOT handle chips by their leads.

5. Insert the new IC Chip into the socket on the PWB (Figure 18).
   a. Ensure that the notch on the end of the socket and the notch on the end of the IC chip are lined up.
   b. Carefully align the pins of the IC chip with the holes in the socket. Ensure that each pin is started properly in its corresponding socket hole before continuing to the next step.
   c. If using tool 600T80037, push the insertion tool down. If using tool 600T80041, depress the button on top of the tool.
   d. Remove the IC chip insertion tool.

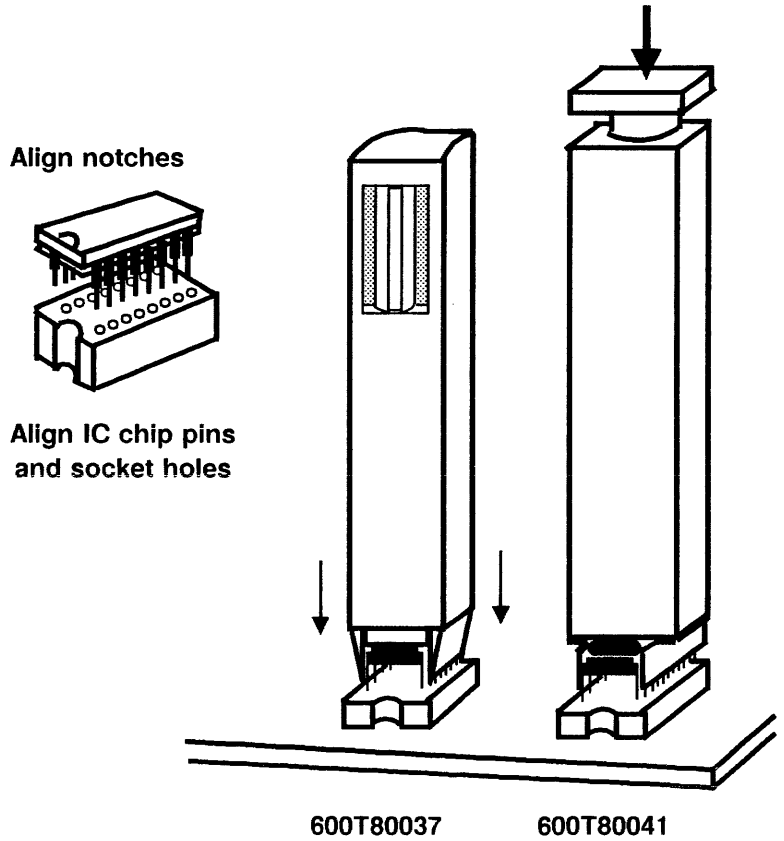


Figure 18. IC Chip Insertion

REP 4.18 15 Inch Display Cover

Parts List on PL 5.4

Removal

1. Switch off the system power.
2. Turn the display so that the screen faces away from you.
3. Remove the display cover.
   a. Loosen the two screws at the bottom left and right corners of the cover.
   b. Insert a slot screwdriver into the seam where the cover mates with the bezel, $1\frac{1}{2}$ inches in from the top right hand corner (Figure 19). Push the screwdriver toward the front of the CRT. When the screwdriver reaches a small cutout in the cover, lift the handle of the screwdriver to release the locking mechanism on the right side.
   c. Release the locking mechanism on the left side, then slide the cover towards you.

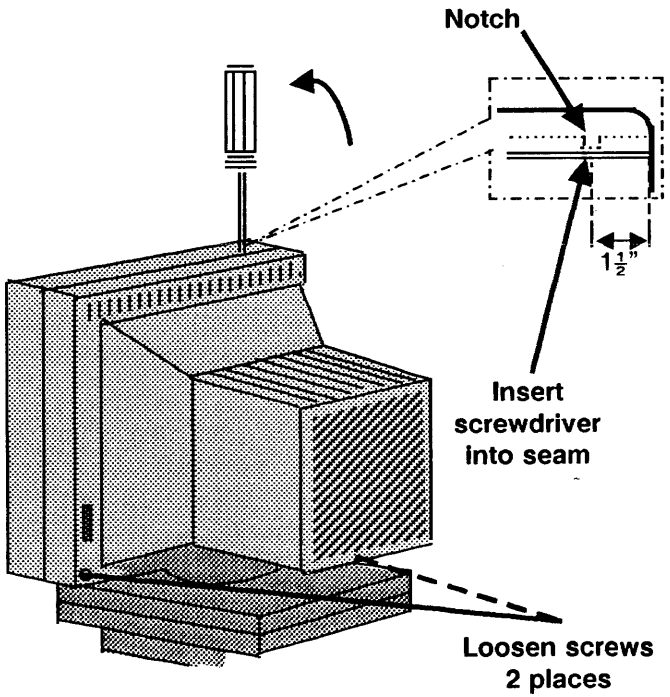


Figure 19. Removing the Display Cover

Replacement

NOTE: The plastic dust baffle inside the display cover may have fallen out of its slot when the cover was removed. Be certain that it is inserted into the slot before replacing the display cover.

1. Replace the display cover.
   a. Put the cover in place and press it onto the display until the top left and right retainers snap into place.
   b. Install the two screws at the bottom left and right corners of the cover.

REP 4.19 15 Inch Display Shield

Parts List on PL 5.4

Removal

1. Switch off the system power.
2. Remove the display cover (4.18).
3. Remove the display shield.
   a. Remove the 10 screws (four on each side of the top edge of the metal cage and two on the top rear) that secure the shield to the chassis.
   b. Remove the display shield.

REP 4.20 15 Inch Display Image Adjustments

NOTE: For definitions of any of the terms used in this adjustment procedure, refer to 4.24 Display Quality Definitions.

Adjustment

1. Switch off the system power.
2. Remove the display cover (4.18).
3. Remove the display shield (4.19).

WARNING

Be careful of high voltage on the CRT yoke, anode, anode lead, and PWBs. Remove all jewelry before performing the display adjustments. When power is applied, use only one hand to make the adjustments. Touching the display with both hands can cause a dangerous electrical shock.

4. Mark the face of the CRT for alignment.
   a. Use a felt tip pen to mark the face of the display as shown in Figure 20.

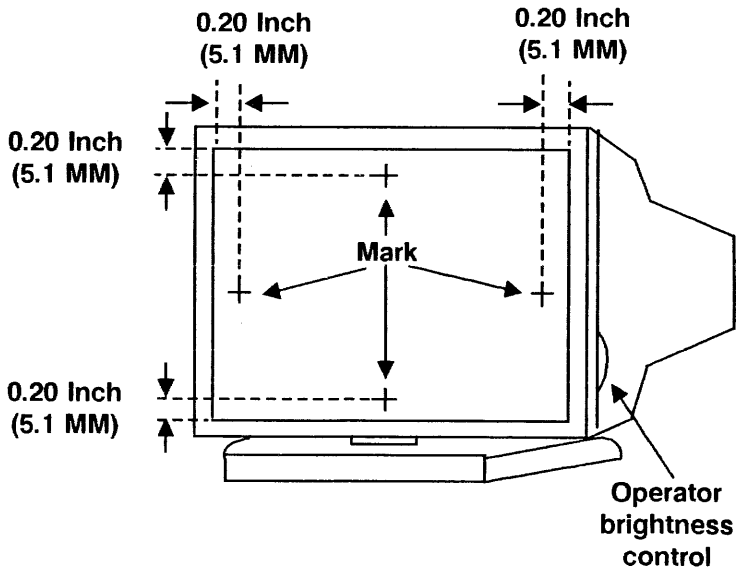


Figure 20. 15 Inch Display

5. Switch on the system power.
6. Insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive and press the Floppy Boot Function Key **<F2>**, then follow the displayed instructions for inserting the next disk. Or press the Ethernet Boot Function Key **<F3>**.
7. After the logon menu appears, logon as a **Normal User**.
8. Select the Keyboard/Display/Mouse/Beeper test, then select the Fill Screen with H, E, @, or Slanted Lines test.
   a. Proceed through the test patterns by pressing **<NEXT>**, stopping on the bold @ symbol pattern.

*NOTE: If the display rolls or is not locked in horizontally, adjust the **H HOLD** pot (R110) until it is stable.*

CAUTION

Prior to making any of the adjustments or checking the alignment, the system power must be ON for a warmup time of 10 minutes.

CAUTION

Do not adjust any control pots other than those indicated in the following adjustment procedures.

9. Check/adjust the brightness.
   a. Move the operator brightness control to the minimum setting.
   b. The display is almost completely dark, with dim characters visible.

      Y N

      | Go to step f.

   c. Set the operator brightness control to the maximum setting.
   d. The display is not too bright, and no characters are extremely out of focus. (Retrace lines may be visible.)

      Y N

      | Go to step g.

   e. The display brightness is correct. Go to step 10.
   f. With the operator brightness control set to minimum brightness, adjust **BRIGHT L. LIM** to the specifications in step b (Figure 21).
   g. With the operator brightness control set to maximum brightness, adjust **BRIGHT H. LIM** to the specifications in step d (Figure 21).

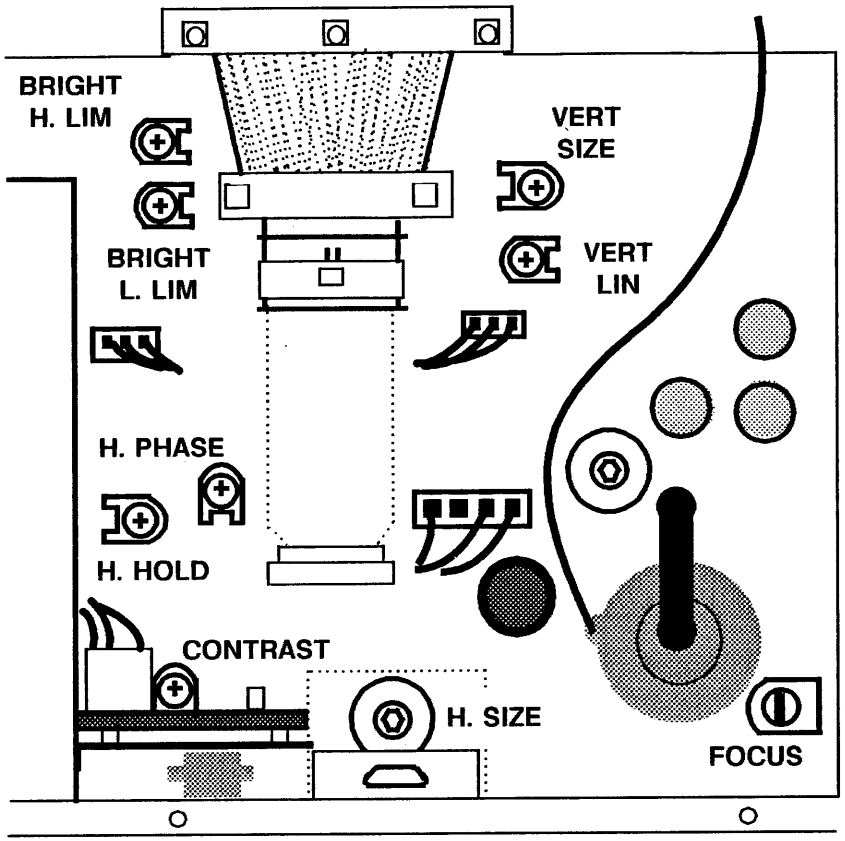


Figure 21. 15 Inch Display PWB Adjustment Locations

10. Check/adjust the focus.
    a. Move the brightness control to the desired setting.
    b. Adjust the **CONTRAST** (R505) pot for optimum viewing (Figure 21).
    c. All characters can be identified as @ symbols.

       Y N

       | Go to step e.

    d. The display focus is correct. Go to step 11.
    e. Adjust the **FOCUS** pot (R707) for optimum viewing (Figure 21).

11. Check/adjust the raster centering.

    a. Select the H pattern.
    b. Adjust the operator brightness control so that the raster is visible.
    c. Adjust the **VERT LIN** control for approximately the same size characters in the top and bottom rows (Figure 21).
    d. Select the crosshair pattern.
    e. The vertical center line of the crosshair pattern should fall within 0.05 inches of the vertical part of the felt pen mark on the top and bottom of the CRT and the horizontal center line of the crosshair pattern should fall within 0.05 inches of the horizontal part of the felt pen mark on the left and right side of the CRT. The vertical and horizontal center lines are within the specified distances.

       Y N

       | Go to step g.

    f. The display raster is centered. Go to step 13.
    g. Center the raster within the marks by first adjusting **H. PHASE** to remove any vertical white line at the left or right edge of the raster (Figure 21). Go to to step h.

WARNING

To make this adjustment you must reach over the top of the display. Be careful of high-voltage charges on the CRT, yoke, and PWBs.

    h. Adjust the centering rings on the back of the yoke (Figure 22). If the specifications in step e cannot be met, you will have to tilt the raster. Proceed to step 12.

12. Adjust the raster tilt.

    a. Loosen the yoke clamp screw one-quarter turn (Figure 22).
    b. Rotate the yoke until the vertical and horizontal center lines of the crosshair come within 0.05 inches of the felt pen marks at the top, bottom, left and right sides of the CRT. Be sure to bias the yoke towards the screen.
    c. Tighten the yoke clamp screw, being careful not to overtighten it.

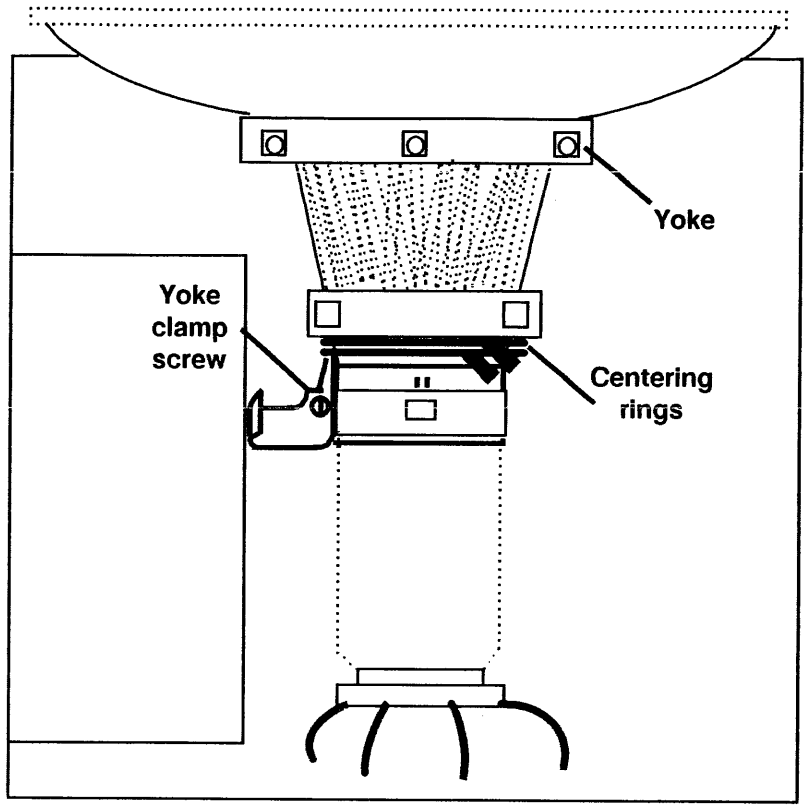


Figure 22. 15 Inch Display Yoke and Centering Rings

13. Check/adjust the horizontal size.

    a. Ensure that the left and right sides of the raster come within 0.05 inches of the vertical lines of the felt pen marks at the left and right sides of the screen. The left and right sides are within the specified distance.

       Y N

       | Go to step c.

    b. The display raster horizontal size is correct. Go to step 14.
    c. Adjust the **H SIZE** coil to obtain correct display width (Figure 21).

14. Check/adjust the vertical size.

    a. Ensure that the top and bottom of the raster is within 0.05 inches of the horizontal lines of the felt pen marks at the top and bottom of the screen. The top and bottom of the raster is within the specified distance.

       Y N

       | Go to step c.

    b. The display raster vertical size is correct. You are finished with the display adjustment procedure.

*NOTE: This adjustment moves the whole raster, not the video within the raster. It may be necessary to alternate adjusting the **VERT SIZE** and **VERT LIN** to obtain optimum centering of the raster.*

    c. Adjust **VERT SIZE** to obtain correct display height (Figure 21).

REP 4.21 19 Inch Display Cover

Parts List on PL 5.4

Removal

1. Switch off the system power.
2. Turn the display so that the screen faces away from you.
3. Remove the display cover.
    a. Loosen the four screws at the corners of the cover and remove the cover.

REP 4.22 19 Inch Display Shield

Parts List on PL 5.4

Removal

1. Switch off the system power.
2. Remove the display cover (4.21).
3. Remove the display shield.
    a. Remove the eight screws holding the shield to the chassis.
    b. Remove the display shield.

REP 4.23 19 Inch Display Image Adjustments

NOTE: For definitions of any of the terms used in this adjustment procedure, refer to 4.24 Display Quality Definitions.

Adjustment

1. Switch off the system power.
2. Remove the display cover (4.21).
3. Remove the display shield (4.22).

WARNING

Be careful of high voltage on the CRT yoke, anode, anode lead, and PWBs. Remove all jewelry before performing the display adjustments. When power is applied, use only one hand to make the adjustments. Touching the display with both hands can cause a dangerous electrical shock.

4. Mark the face of the CRT for alignment.
   a. Use a felt tip pen to mark the face of the display as shown in Figure 23.

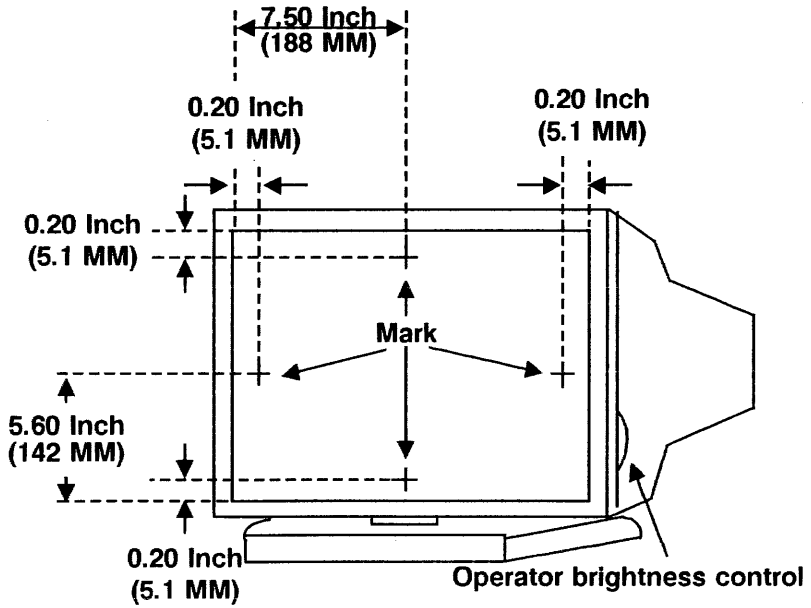


Figure 23. 19 Inch Display

5. Switch on the system power.
6. Insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive and press the Floppy Boot Function Key **<F2>**, then follow the displayed instructions for inserting the next disk. Or press the Ethernet Boot Function Key **<F3>**.
7. After the logon menu appears, logon as a Normal User.
8. Select the Keyboard/Display/Mouse/Beeper test, then select the Fill Screen with H, E, @, or Slanted Lines test.
   a. Proceed through the test patterns by pressing **<NEXT>**, stopping on the bold **@** symbol pattern.

*NOTE: If the display rolls or is not locked in horizontally, adjust the **H HOLD** pot (R110) until it is stable. If the display is not locked in vertically, adjust the **V HOLD** pot (R302).*

CAUTION

Prior to making any of the adjustments or checking the alignment, the system power must be ON for a warmup time of 10 minutes.

CAUTION

Do not adjust any control pots other than those indicated in the following adjustment procedures.

9. Check/adjust the brightness.
   a. Move the operator brightness control to the minimum setting.
   b. The display is almost completely dark, with dim characters visible.

      Y N

      | Go to step f.

   c. Set the operator brightness control to the maximum setting.
   d. The display is not too bright, and no characters are extremely out of focus. (Retrace lines may be visible.)

      Y N

      | Go to step f.

   e. The display brightness is correct. Go to step 10.
   f. With the operator brightness control set to minimum brightness, adjust **SUB BRIT** to the specifications in step b (Figure 24).
   g. With the operator control set to maximum brightness, adjust **MAX BRT** (through the rear of the chassis) to obtain the specifications in step d.

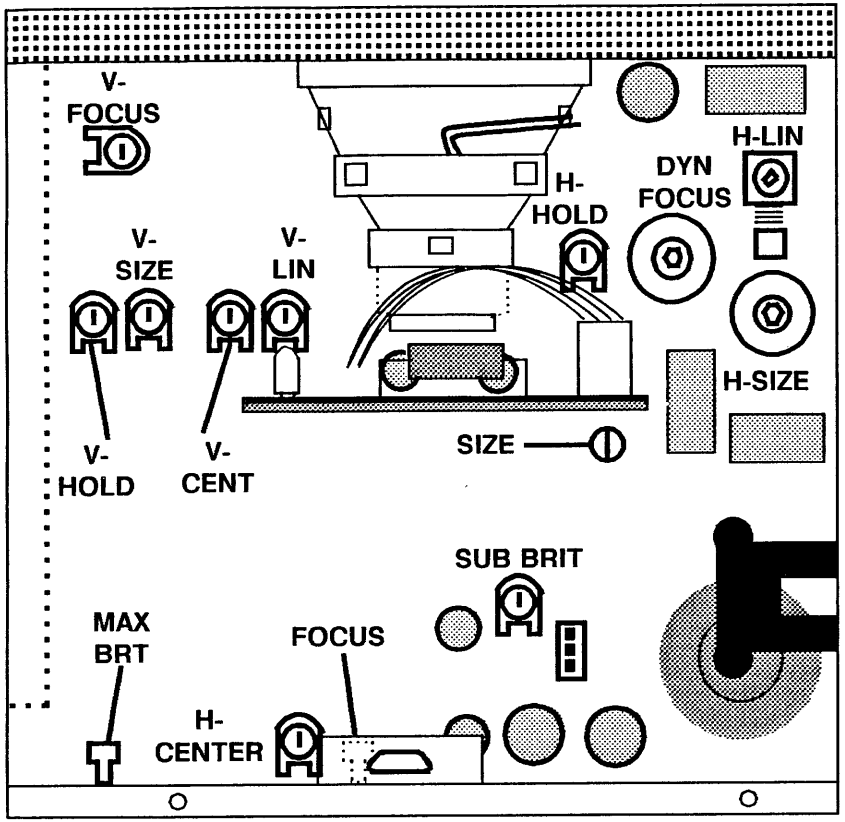


Figure 24. 19 Inch Display Adjustment Locations

10. Check/adjust the focus.
    a. Move the operator brightness control to the desired setting.
    b. All characters can be identified as @ symbols and are in focus.

       Y N

       | Go to step d.

    c. The display focus is correct. Proceed to step 11.
    d. Adjust the **FOCUS** pot (R223), the **VERT FOCUS** pot and the **DYN FOCUS** pot for optimum viewing (Figure 24). The R223 adjustment is made through an access hole in the rear plate.

11. Check/adjust the raster centering.
    a. Select the crosshair pattern.
    b. Adjust the operator brightness control to a desirable viewing level.
    c. The vertical center line of the crosshair pattern should fall within 0.05 inches of the vertical part of the felt pen mark on the top and bottom of the CRT and the horizontal center line of the crosshair pattern should fall within 0.05 inches of the horizontal part of the felt pen mark on the left and right side of the CRT. The vertical and horizontal center lines are within the specified distances.

       Y N

       | Go to step e.

    d. The display raster is centered. Go to step 13.

WARNING

To make this adjustment you must reach over the top of the display. Be careful of high-voltage charges on the CRT, yoke, and PWBs.

    e. Adjust the centering rings on the back of the yoke (Figure 25) until the vertical and horizontal center lines are within the distances specified in step c. If the specifications cannot be met, you will have to tilt the raster. Go to step 12.

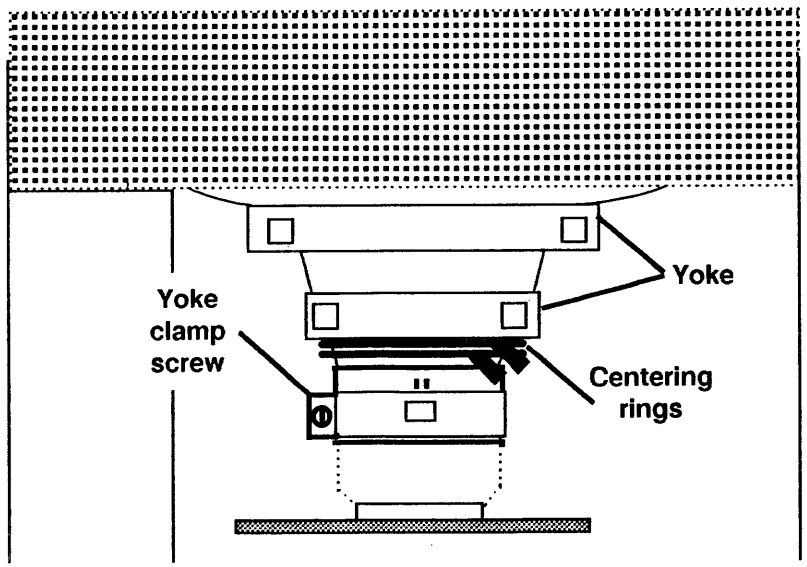


Figure 25. 19 Inch Display Yoke and Centering Rings

12. Adjust the raster tilt.

    a. Loosen the yoke clamp screw one-quarter turn (Figure 25).

    b. Rotate the yoke until the vertical and horizontal center lines of the crosshair come within 0.05 inches of the felt pen marks at the top, bottom, left and right sides of the CRT. Be sure to bias the yoke towards the screen.

    c. Tighten the yoke clamp screw, being careful not to overtighten it.

13. Check/adjust the horizontal size.

    a. Ensure that the left and right sides of the raster come within 0.05 inches of the vertical lines of the felt pen marks at the left and right sides of the screen. The left and right sides are within the specified distance.

    Y N

    | Go to step c.

    b. The display raster horizontal size is correct. Proceed to step 14.

    c. Adjust the **H SIZE** coil to obtain correct display width (Figure 24). If the adjustment cannot be obtained, adjust the **SIZE** pot (R430).

*NOTE: Alternating adjustments of **H SIZE**, **H LIN**, and **H CENTER** may be necessary in order to obtain the correct display width and at the same time maintain the position of the horizontal crosshair within 0.05 inches of the left and right felt pen marks. If a vertical white line appears at the left or right edge of the raster, adjust it out with **H CENTER** first , then adjust **H SIZE**, **H LIN**, and the centering rings on the back of the yoke to center the raster.*

14. Check/adjust the vertical size.

    a. Ensure that the top and bottom of the raster is within 0.05 inches of the horizontal lines of the felt pen marks at the top and bottom of the screen. The top and bottom of the raster is within the specified distance.

    Y N

    | Go to step c.

    b. The display raster vertical size is correct. You are finished with the display adjustment procedure.

    c. Adjust **VERT SIZE** to obtain correct display height (Figure 24). The **SIZE** pot (R430) may have to be adjusted to obtain the correct height. Go back and recheck the horizontal size (step 13a).

*NOTE: Alternating adjustments of **VERT SIZE**, **VERT LIN**, and **VERT CENT** may be necessary in order to obtain the correct display height and at the same time maintain the position of the vertical crosshair within 0.05 inches of the top and bottom felt pen marks.*

REP 4.24 Display Quality Definitions

This section provides definitions for some of the terms that apply to display quality.

Horizontal
Refers to the raster in relation to the screen from side to side. Moving a horizontal potentiometer actually changes the shape or position of the sides of the raster.

Horizontal Centering
The raster should be centered between the left and right edges of the screen.

Horizontal Deflection
Moves the CRT electron beam horizontally by deflecting the beam from its straight line path by means of an electromagnetic field. Without horizontal deflection the raster would be compressed into a vertical line running up the center of the screen.

Horizontal Linearity
The sides of the raster should be parallel to the left and the right edges of the screen.

Horizontal Size
The overall size of the picture, left to right.

Horizontal Sync
The signal generated in the processor which controls the timing of the horizontal deflection. Without horizontal sync the image would roll horizontally. This can be adjusted with the "H-Hold" potentiometer.

Linearity
Equal distance between lines.

Raster
The bright white glow which covers the screen.

Retrace Lines
The pattern left by the CRT beam when returning from the end of one line to the start of the next. Retrace lines can be observed as white diagonal lines over the screen when the brightness control is set at maximum.

Sync (synchronize)
Locked into position. Not rolling horizontally or vertically.

Vertical
Refers to the raster in relation to the screen from top to bottom. Moving a vertical potentiometer actually changes the shape or position of the upper and lower edges of the raster.

Vertical Deflection
Moves the CRT electron beam vertically by deflecting the beam from its straight line path by means of an electromagnetic field. Without vertical deflection the raster would be compressed into a horizontal line running across the center of the screen.

Vertical Linearity
The top and bottom edges of the raster should be parallel to the top and bottom edges of the screen.

Vertical Size
The overall size of the picture, top to bottom.

Vertical Sync
The signal generated by the processor which controls the timing of the vertical deflection. Without vertical sync the image would roll vertically. This can be adjusted with the "V-Hold" potentiometer.

REP 4.25 Laser Printer Option

Parts List on PL 5.1

NOTE: Use this procedure to install the Laser Printer Option (LPO) PWB on the 6085.

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Release the cable retaining clamp (4.3).
4. Remove any cables from C4 that block your access to C5.
5. Loosen the two thumbscrews on the C5 stiffener and gently pull it from the processor.

Replacement

1. If there is a PCO PWB already installed on the C5 stiffener, go to step 3. If the system has no PC Option, continue with step 2.

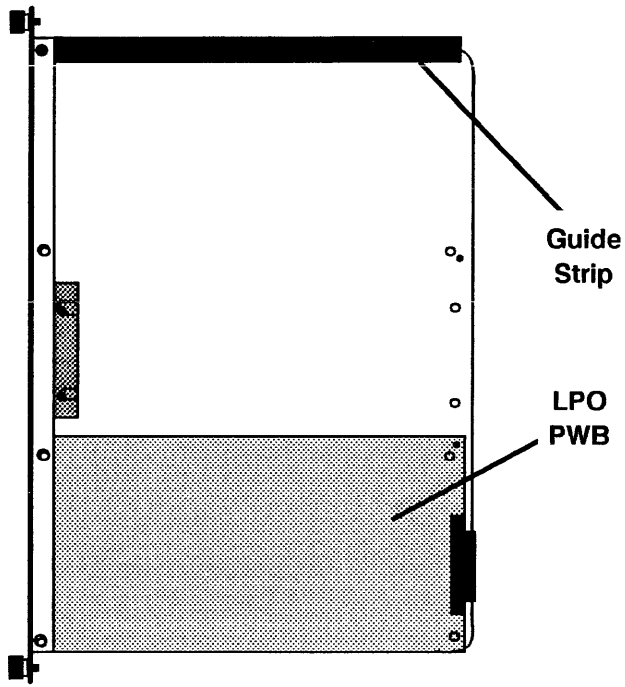


Figure 26. C5 Stiffener with LPO PWB and Guide Strip

2. Install the new C5 stiffener with the LPO PWB in the C5 slot. Be sure to line up the edges of the LPO PWB and the guide strip (Figure 26) with the guide rails in the processor. Push the stiffener gently into place until the thumbscrews can be engaged. Forcing the stiffener into the processor may damage the PWB connector, the backplane, or the stiffener. Tighten the two thumbscrews finger tight. Go to step 9.

3. Since the 6085 has a PCO PWB already installed on the C5 stiffener, you will need to remove it and install it on the new C5 stiffener that is supplied with the LPO PWB. Remove the four screws that secure the PCO PWB to the stiffener. Place the board and the screws in a safe place.
4. Unpack the new C5 stiffener with the LPO PWB. Remove the screws that hold the guide strip in place (Figure 26) and discard both the guide strip and the screws.
5. Place the PCO PWB on the upper section of the new C5 stiffener, making certain that the locating hole in the lower right corner of the PCO PWB is seated on the locating pin of the stiffener (Figure 27).

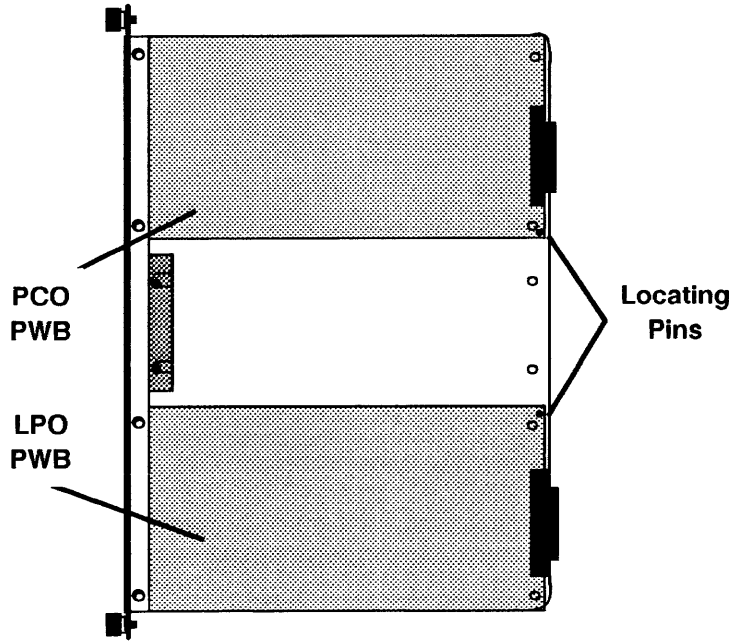


Figure 27. C5 Stiffener installation of both LPO and PCO PWBs

6. Install the four screws, then tighten them to secure the PWB to the stiffener.
7. Two PCO labels are supplied with the LPO kit. Select the PCO label that matches the one on the C5 stiffener from which you removed the PCO PWB. Attach this label to the spine of the new C5 stiffener, just below the "C5" marking (Figure 28).

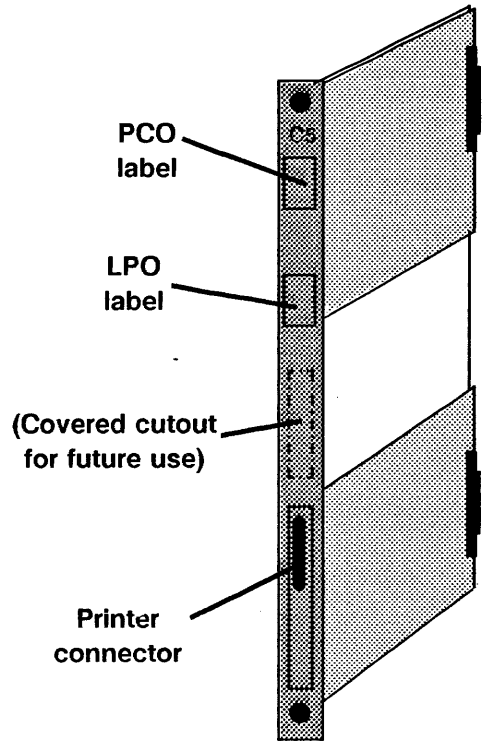


Figure 28. C5 Stiffener: end view showing labels and printer connection

8. Install the new C5 stiffener with the two PWBs in the C5 slot. Be sure to line up the edges of the PWBs with the guide rails in the processor. Push the stiffener gently into place until the thumbscrews can be engaged. Forcing the stiffener into the processor may damage the PWB connectors, the backplane, or the stiffener. Tighten the two thumbscrews finger tight.
9. Reconnect any cables that were removed from C4.

CAUTION

Make sure that the power to both the 6085 and the 4045 is switched off before connecting the cables.

10. Run the System Configuration Utility (6.10) and update it to reflect the addition of the LPO.
11. Complete the installation of the 4045 Laser CP using procedure 6.17.

REP 4.26 Seek Safe Landing Zone

Procedure

NOTE: This procedure causes the rigid disk drive read/write heads to move to a designated area of the disk in order to prevent loss of customer data when the processor is moved.

1. Press the B Reset button. After the Boot Softkeys are displayed, insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive, press **<F2>**, and follow the displayed instructions for inserting the Workstation Diagnostics Disk.
2. Type **<1>** for a Normal User logon, and press **<Return>**.
3. Type the number corresponding to the "Formatter, Scavenger and Bad Page Utility," and press **<Return>**.
4. Press **<Return>** to "Is this disk formatted? Y."
5. Type **<3>** for the Head Retraction Utility, and press **<Return>**.
6. Type **<Y>** and press **<Return>** to the two confirmation prompts.
7. Switch off the system power at the "*Heads retracted, please power off the 6085*" prompt. The processor may now be moved.

REP 4.27 Keycaps

Parts List on PL 5.4

NOTE: If a keyboard with a special keycap set must be replaced, use this procedure to transfer the keycaps from the old keyboard to the new one. Remove the appropriate keycaps from the new keyboard and transfer the special keycaps from the old keyboard one at a time, to maintain the correct arrangement of letters or symbols.

Removal

1. Switch off the system power.
2. Remove the keycap.
   a. Press and hold keys on either side (or above and below) the keycap to be removed.
   b. Slide the Chip Removal Tool (600T80042) over the keycap and hook the tool under the edges of the cap (Figure 29). Squeeze the two legs of the tool together to hold the keycap firmly.
   c. Pull up on the keycap until it comes off.

Replacement

1. Identify the correct location for the keycap.
2. Center the keycap over the shaft.
3. Press the keycap onto the shaft until it bottoms out.

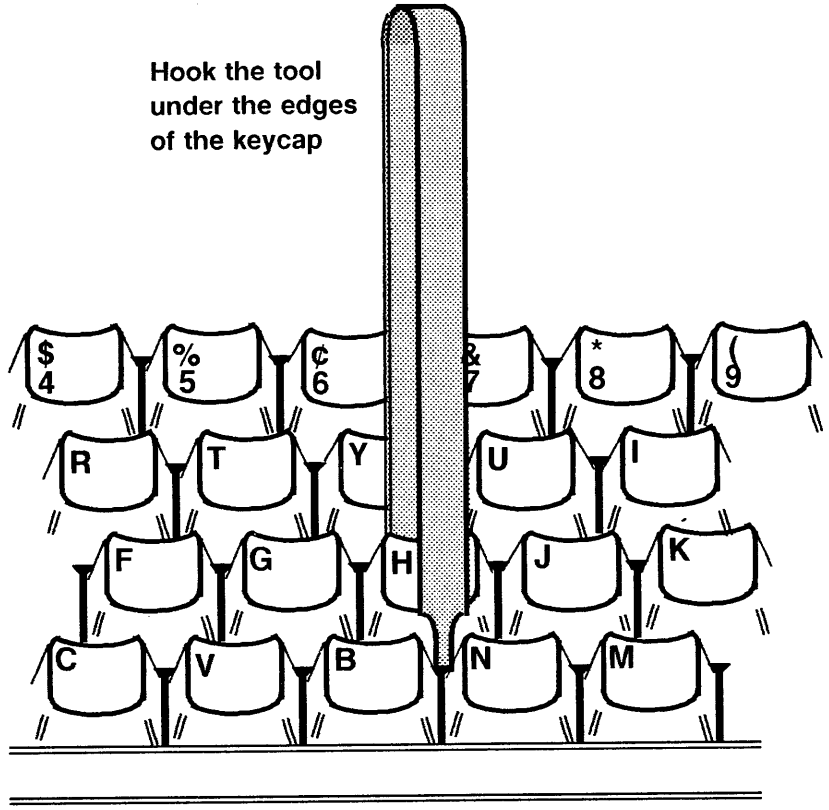


Figure 29. Keycap Removal

REP 4.28 Scanner/Printer Option

Parts List on PL 5.1

Removal

NOTE: Use this procedure to install the Scanner / Printer Option (SPO) PWB on the 6085.

1. Switch off the system power.
2. Access the back of the processor.
3. Release the cable retaining clamp (4.3).
4. Remove any cables from C4 that block your access to C5.
5. Loosen the two thumbscrews on the C5 stiffener and gently pull it from the processor.

Replacement

1. If there is a PCO PWB already installed on the C5 stiffener, go to step 3. If the system has no PC Option, continue with step 2.
2. Install the new C5 stiffener with the SPO PWB in the C5 slot. Be sure to line up the edges of the SPO PWB and the guide strip (Figure 30) with the guide rails in the processor. Push the stiffener gently into place until the thumbscrews can be engaged. Forcing the stiffener into the processor may damage the PWB connector, the backplane, or the stiffener. Tighten the two thumbscrews finger tight. Go to step 9.
3. Since the 6085 has a PCO PWB already installed on the C5 stiffener, you will need to remove it and install it on the new C5 stiffener that is supplied with the SPO PWB. Remove the four screws that secure the PCO PWB to the stiffener. Place the board and the screws in a safe place.
4. Unpack the new C5 stiffener with the SPO PWB. Remove the screws that hold the guide strip in place (Figure 30) and discard both the guide strip and the screws.

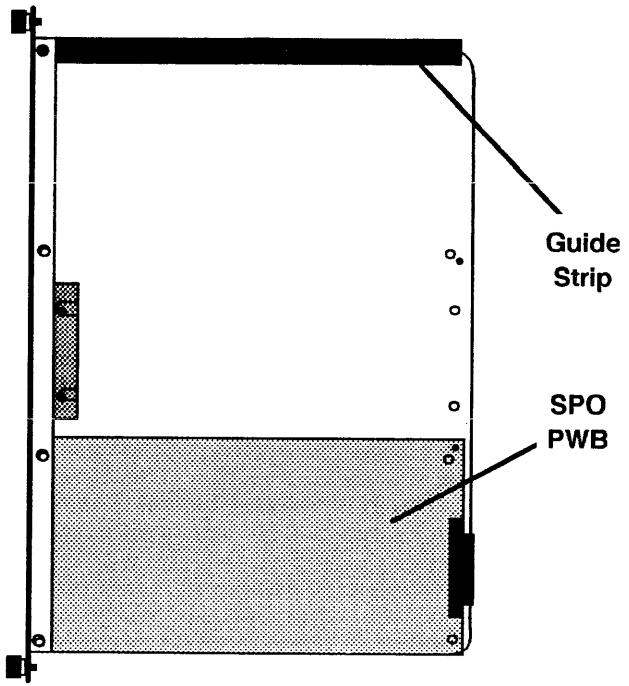


Figure 30. C5 Stiffener with SPO PWB and Guide Strip

5. Place the PCO PWB on the upper section of the new C5 stiffener, making certain that the locating hole in the lower right corner of the PCO PWB is seated on the locating pin on the stiffener (Figure 31).

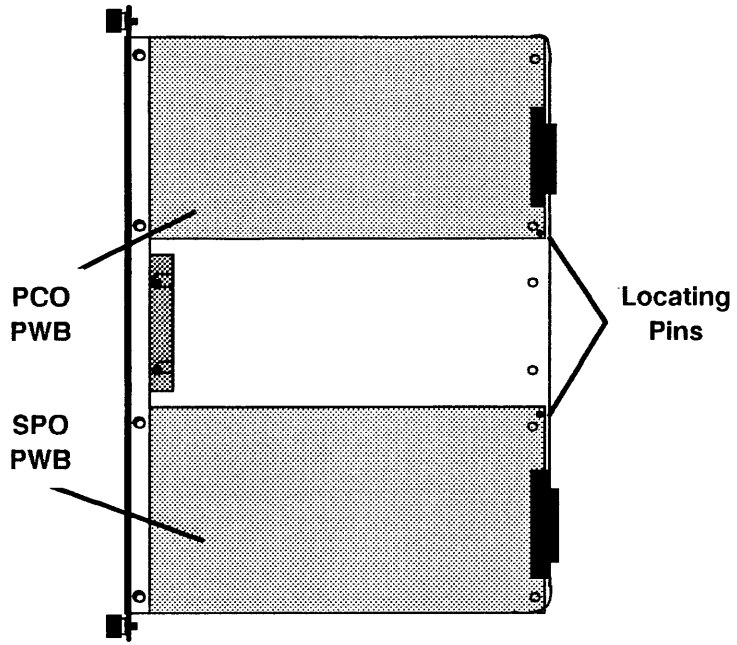


Figure 31. C5 Stiffener: installation of both SPO and PCO PWBs

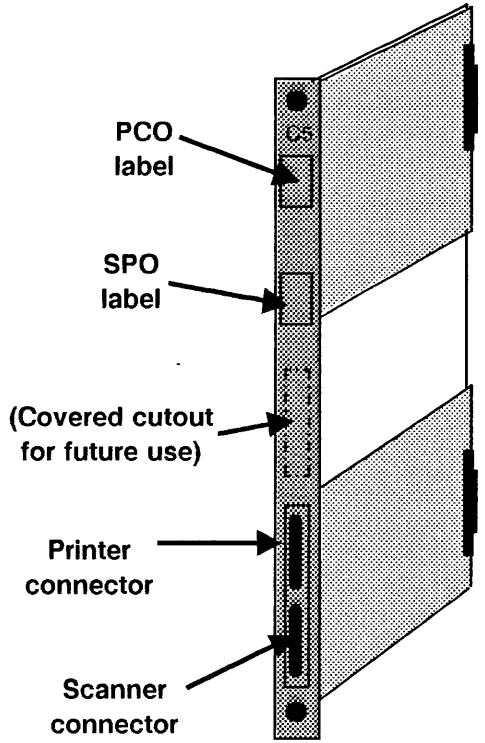


Figure 32. C5 Stiffener: end view showing labels and scanner/printer connection

6. Install the four screws, then tighten them to secure the PWB to the stiffener.
7. Two PCO labels are supplied with the SPO kit. Select the PCO label that matches the one on the C5 stiffener from which you removed the PCO PWB. Attach this label to the spine of the new C5 stiffener, just below the "C5" marking (Figure 32).
8. Install the new C5 stiffener with the two PWBs in the C5 slot. Be sure to line up the edges of the PWBs with the guide rails in the processor. Push the stiffener gently into place until the thumbscrews can be engaged. Forcing the stiffener into the processor may damage the PWB connectors, the backplane, or the stiffener. Tighten the two thumbscrews finger tight.
9. Reconnect any cables that were removed from C4.
10. Follow the procedure in the 7650 Pro Imager service manual to install the scanner up to the point where it is ready to be connected to the 6085. Do not proceed with the remaining steps until the scanner is ready.

NOTE: The following system components are required for the Scanner/Printer Option: an 80MB disk drive, 2.6MB of system memory (minimum), an 8K control store, and a 19" display. Ensure that these components are present and that they are properly reflected by the System Configuration Utility.

NOTE: Perform the 8K Control Store Microcode Software Installation procedure (6.14.1) if you install the 8K Control Store Memory Upgrade Kit in a 6085 already running ViewPoint 2.0 software.

11. Run the System Configuration Utility (6.10) and update the addition of the SPO.
    a. Switch on the processor.
    b. Load the 6085 System Configuration Utility. If the system has a Floppy Disk Drive, insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive and press Function Key **<F2>**, then follow the displayed instructions for inserting the next disk. For systems without a Floppy Drive, press the Ethernet Boot Function Key **<F3>** and select Off-Line Diagnostics when the Network Executive menu appears.
    c. Type the number corresponding to "Normal User," and press **<Return>**.
    d. Type the number corresponding to "System Configuration Utility," and press **<Return>**.
    e. Type the number corresponding to "Show Configuration," and press **<Return>**.
    f. The Universal Option entry shows "Not Present" or an entry other than SP Option.

       Y N

       | Go to step n.

    g. Type the number corresponding to "Return to the Previous Menu, " and press **<Return>**.
    h. Type the number corresponding to "Set Configuration," and press **<Return>**.
    i. Press **<Return>** in response to each question until the "Universal Options" menu appears.
    j. Type the number corresponding to "SP Option" and press **<Return>**.
    k. Press **<Return>** until the question "*Do you want your workstation reconfigured with the options you have selected?*" appears. Type **<Y>**.
    l. Type **<Y>** to the confirmation prompt.
    m. Type **<Y>** to "*Is this disk formatted?*"
    n. Press **<STOP>** until the "Class of User" menu appears.

NOTE: Perform the following additional changes to the system configuration.

    o. Log on at the Technical Support Level with the password **rexifsn**.
    p. Type the number corresponding to "System Configuration Utility," and press **<Return>**.
    q. Type the number corresponding to "Show modified EEPROM Contents (in HEX format) to be written" and press **<Return>**.
    r. The contents of WORD19 equal "1101."

       Y N

       | Go to step t.

    s. Type the number corresponding to "Return To The Previous Menu" and press **<Return>**. Go to step 12.
    t. Type the number corresponding to "Change Contents of EEPROM" and press **<Return>**.
    u. At "Enter word number (1-64) in DECIMAL," type **<19>** and press **<Return>** .
    v. At "Enter data to put in the EEPROM (in HEX)," type **<1101>** and press **<Return>**.
    w. Verify in the directory of EEPROM Contents that WORD19 has been change to 1101.
    x. Type the number corresponding to "Return to previous menu" and press **<Return>**
    y. Type the number corresponding to "Write EEPROM" and press **<Return>**.
    z. Type **<Y>** to "*Is this disk formatted?*"
    aa. Type **<1>** to "Confirm The Write EEPROM Selection" and press **<Return>** .
    bb. Type **<Y>** to answer "*Booting will use new EEPROM values. Do you wish to continue?*"
    cc. Reboot the 6085 so that the changes take effect.

12. Complete the installation of the 4045 Laser CP using installation procedure 6.17.

CAUTION

Make sure that the power to both the 6085 and the scanner is switched off before connecting the cables.

13. Go to the 7650 Pro Imager service manual to complete the installation.

REP 4.29 Removable Rigid Drive Cable Assembly

Parts List on PL 5.2

Removal

1. Perform the Seek Safe Landing Zone procedure (REP 4.26)
2. Switch off the system power.
3. Remove the rigid disk drive.
4. Access the back of the processor.
5. Remove the rear cover (REP 4.1).
6. Remove the six screws that secure the C9 cover and remove the cover.
7. Remove the two screws that secure the rigid disk drive connector to the bottom of the RRD compartment (Figure 33).
8. Remove the two screws that secure the cable clamp to the inner wall of the C9 cavity (Figure 33).
9. Remove the rigid disk drive cable assembly.
   a. Loosen the thumbscrew that secures the C7 bracket assembly (Figure 33).
   b. Slide the C7 bracket assembly out of the processor, bringing the cable clamp and the connector through the cutout between the C9 cavity and the C7 cavity to remove the entire assembly.
10. Loosen the screw that holds together the upper and lower sections of the cable clamp and remove the clamp from the cables.

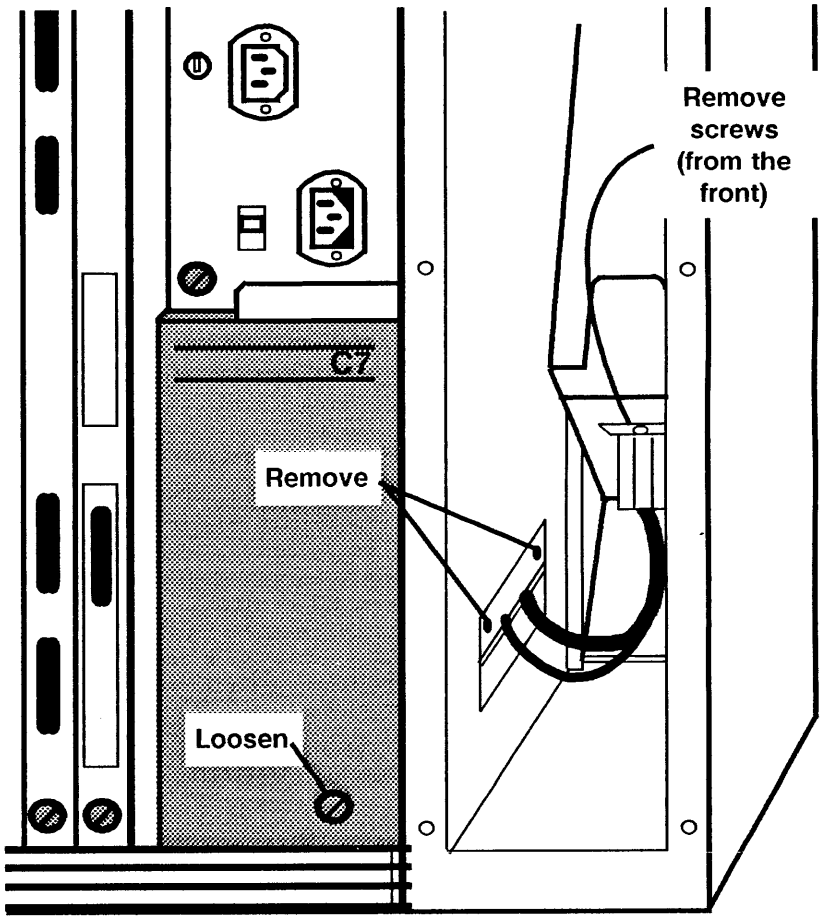


Figure 33. Removable Rigid Drive Cable

Replacement

1. Install the cable clamp (Figure 34).
   a. Arrange the C7 bracket and the rigid drive connector so that the cables between them are not twisted.
   b. Position the cable clamp so that the screw flanges face the rigid drive connector.
   c. Place the cables between the upper and lower sections of the cable clamp, taking care to match the diameters of the cables with the cutouts in the clamp.
   d. Center the clamp over the sleeves on the cables and tighten the cable clamp screw.
2. Replace the rigid drive cable assembly.
   a. Thread the rigid drive connector and the cable clamp through the cutout between the C7 processor cavity and the C9 cavity.
   b. Slide the C7 bracket into the processor.
   c. Tighten the thumbscrew that secures the C7 bracket.
   d. Slide the slotted edge of the cable clamp down onto the lip of the cutout.
   e. Replace the two screws that secure the cable clamp to the inner wall of the C9 cavity.
3. Hold the rigid drive connector onto the locating pins and reinstall the two screws.
4. Perform the remainder of the removal procedure in the reverse order, starting with step 6.

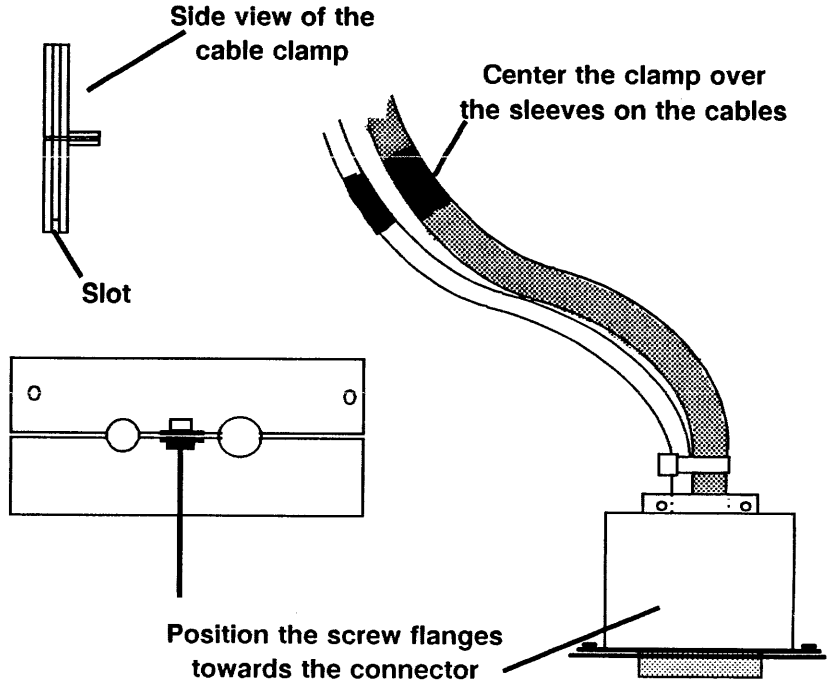


Figure 34. Removable Rigid Drive Cable and Clamp

REP 4.30 Removable Rigid Drive Interlock Solenoid

Parts List on PL 5.2

Removal

1. Perform the Seek Safe Landing Zone procedure (REP 4.26)
2. Switch off the system power.
3. Remove the rigid disk drive.
4. Access the back of the processor.
5. Remove the rear cover (REP 4.1).
6. Remove the six screws that secure the C9 cover and remove the cover.
7. Remove the two screws that secure the rigid disk drive connector.
8. Remove the two screws that secure the cable clamp to the inner wall of the C9 cavity (Figure 33).
9. Remove the C7 bracket to gain access to the C7 cavity.
   a. Loosen the thumbscrew that secures the C7 rigid drive bracket assembly.
   b. Slide the C7 bracket assembly out of the processor, bringing the cable clamp and the connector through the cutout between the C9 cavity and the C7 cavity to remove the entire assembly.
10. Remove the interlock solenoid assembly (Figure 35).
    a. Disconnect the interlock solenoid connector from the solenoid bracket.
    b. Remove the nut that secures the solenoid bracket. (Access the nut from the C9 cavity.)
    c. Bias the bracket towards the rear of the processor and rotate the front end of the solenoid bracket to the left to free the screw from the frame.
    d. Pull the bracket out of the processor.

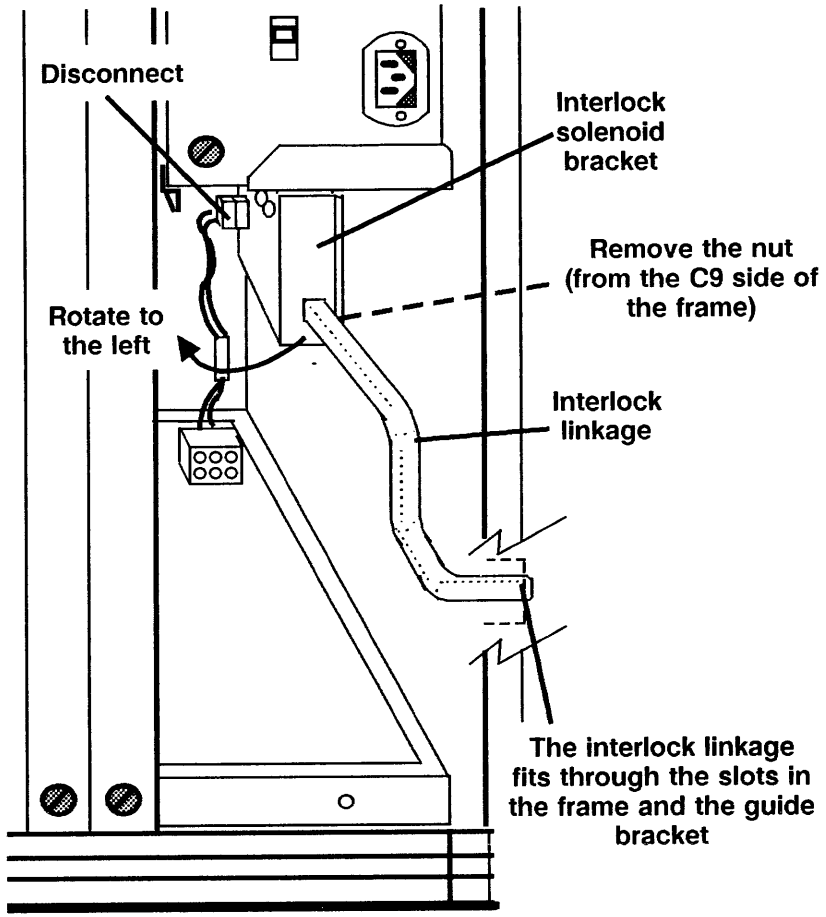


Figure 35. Removable Rigid Drive Interlock Solenoid

Replacement

1. Insert the two rear tabs of the solenoid mounting bracket into the mounting holes in the frame.
2. Bias the interlock linkage toward the front of the processor, and guide the interlock linkage and mounting screw through the slots in the frame, while rotating the solenoid bracket into position.
3. To complete the replacement of the removable rigid drive interlock solenoid, perform the removal procedure in the reverse order.

REP 4.31 Widebody Fan/Interlock Solenoid Harness

Parts List on PL 5.2

Removal

1. Perform the Seek Safe Landing Zone procedure (REP 4.26)
2. Switch off the system power.
3. Remove the rigid disk drive.
4. Access the back of the processor.
5. Remove the rear cover (REP 4.1).
6. Remove the six screws that secure the C9 cover and remove the cover.
7. Remove the two screws that secure the rigid disk drive connector.
8. Remove the two screws that secure the cable clamp to the inner wall of the C9 cavity (Figure 33).
9. Remove the C7 bracket to gain access to the C7 cavity.
   a. Loosen the thumbscrew that secures the C7 rigid drive bracket assembly.
   b. Slide the C7 bracket assembly out of the processor, bringing the cable clamp and the connector through the cutout between the C9 cavity and the C7 cavity to remove the entire assembly.
10. Disconnect the J12 connector at the backplane, the interlock solenoid, and J3 (Figure 36).

NOTE: The fan/interlock solenoid harness consists of two harnesses: a harness from the backplane to the fan with a connector (P3) in line, and a harness from P3 to the interlock solenoid. If only the section of harness from P3 to the solenoid needs to be replaced, you do not need to continue this procedure. If the harness from the backplane to the fan connector needs to be replaced, continue with the removal procedure.

11. Remove the front cover (REP 4.2)
12. Remove the twelve screws that secure the backplane shield and remove the shield.

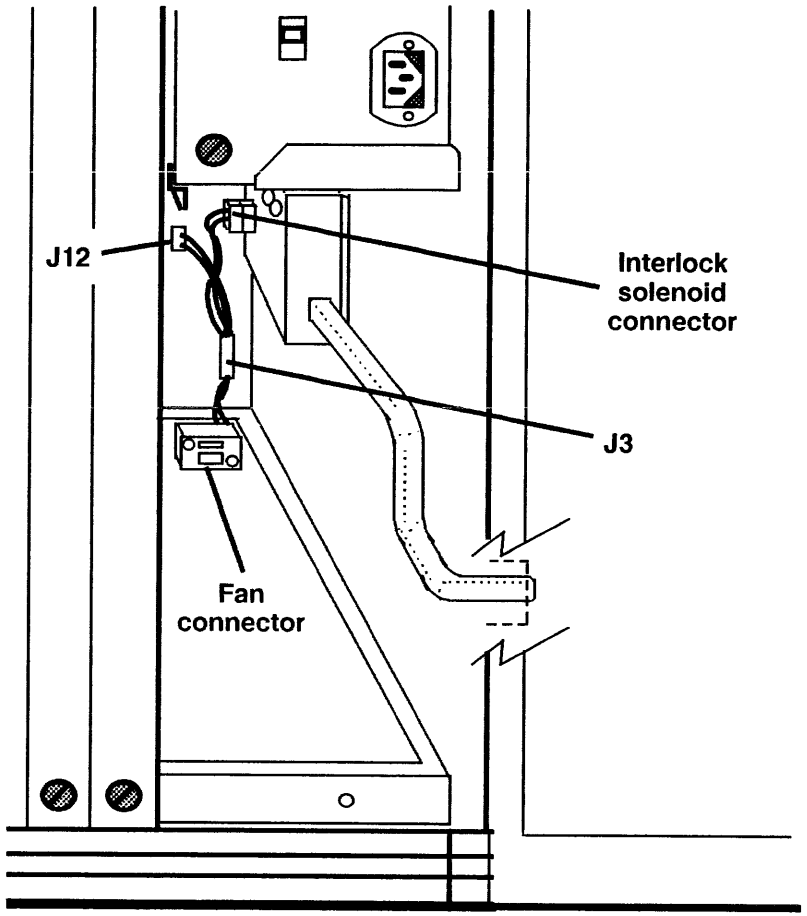


Figure 36. Widebody Fan/Interlock Solenoid Harness

13. Remove the nuts that secure the fan connector bracket (Figure 37).
14. Remove the fan connector bracket and the rest of the fan/interlock solenoid harness from the processor.

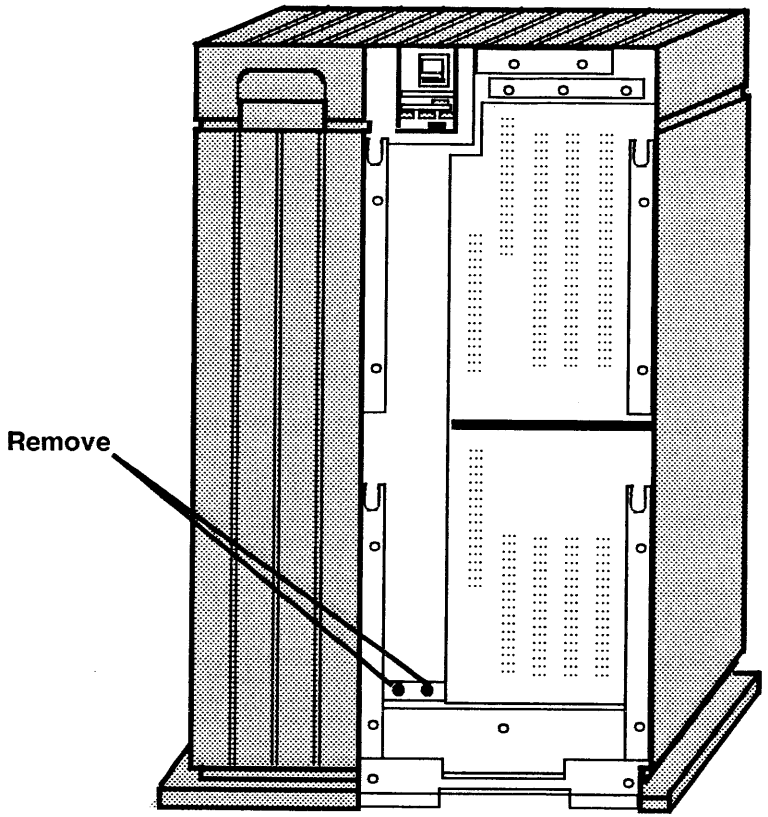


Figure 37. Fan Connector Bracket Nuts

REP 4.32 Removable Rigid Drive Door Dampener

Parts List on PL 5.2

Removal

1. Switch off the system power.
2. Access the back of the processor.
3. Remove the six screws that secure the C9 cover and remove the cover.
4. Pull the locking pin out of the rear dampener bracket to release the dampener (Figure 38).

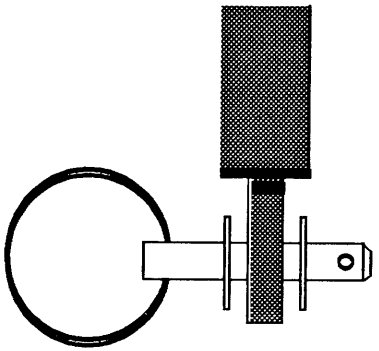


Figure 38. Rigid Drive Door Dampener

5. Open the C9 rigid disk drive compartment.
6. Reach in from the back of the C9 cavity and remove the locking pin from the forward dampener bracket. Remove the dampener from the processor.

Replacement

1. Position the dampener so that the shaft end is towards the front of the processor.
2. Perform the removal procedure in the reverse order.

REP 4.33 Removable Rigid Drive Size Key

Parts List on PL 5.2

NOTE: Use this procedure to install the size key for the removable rigid disk drive in the correct location (Figure 39).

Removal

1. Switch off the system power.
2. Open the rigid disk drive compartment.
3. Remove the two screws that secure the rigid disk drive size key.

Replacement

1. Determine the size of the removable rigid disk drive that will be used with this processor.
2. Place the rigid disk drive size key over the mounting holes that correspond to the correct drive size (Figure 39).
3. Install the two screws that hold the size key in place.
4. Install the rigid disk drive in the drive compartment.
5. Switch on the system power and run the System Configuration Utility (6.10) to verify that the correct drive size is entered.

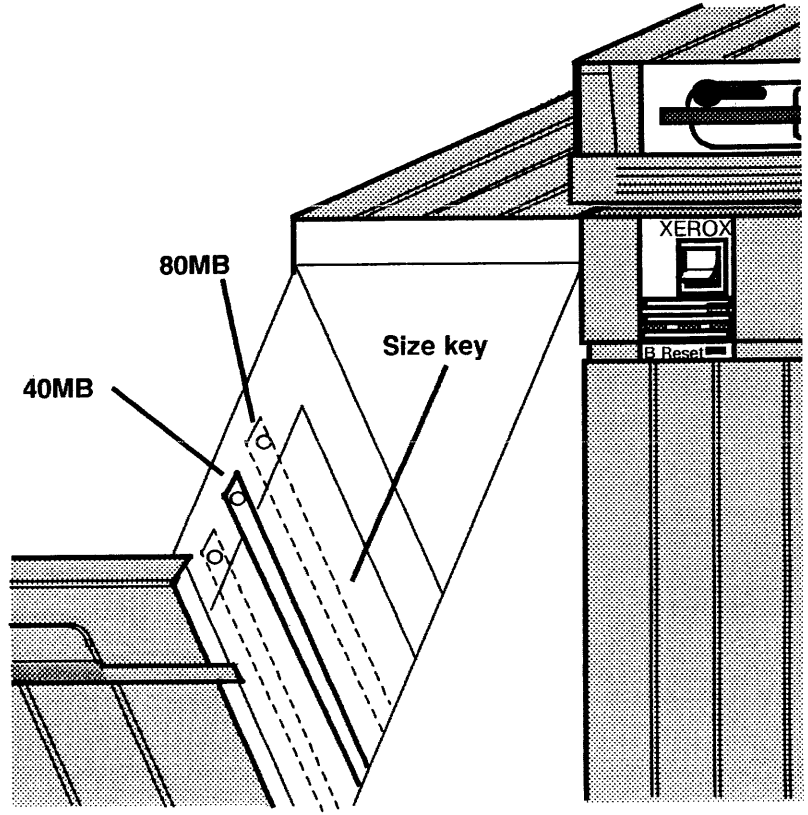


Figure 39. Removable Rigid Drive Key Locations

Section Contents

Introduction

The Parts List gives exploded illustrations of spared subsystem components and parts lists. Item numbers in the parts lists are the same as item numbers on the illustrations.

Class A and Class B Parts

The 6085 PCS is offered with either a processor designed for office use (Class A) or home use (Class B). Because Class B emissions requirements are more stringent than Class A, any Class B part meets Class A requirements. However, not all Class A parts meet Class B requirements.

Install only Class B approved parts in Class B processors (the data label, below the serial number plate, denotes the class). The parts lists which follow denote specific Class B parts. Where parts are common between the two processors, the word "same" is shown in the Class A column.

Table 1 on page 5-10 shows the base configuration of parts for a Class B processor. Parts with numbers equal to or later than the ones shown, as long as they are Class B approved, are acceptable to install in a Class B processor.

PL 5.1 Standard Rigid Drives, Power Supply, and PWBs

Item	Class A Part	Class B Part	Description
1	same	121S02236	10MB Rigid Disk Drive Assembly
--	same	121S02237	20MB Rigid Disk Drive Assembly
--	same	121S02341	40MB Rigid Disk Drive Assembly
--	same	121S02239	80MB Rigid Disk Drive Assembly
2	105K00901	105K1211	Power Supply
3	same	140K00465	PWB, DCM (Note 3, 4)
--	140K02597	--	PWB, DCM (Note 3, 5)
--	140K00463	--	PWB, DCM (Note 7)
4	same	140K01004	PWB, MEB (Note 1, 2, 3)
5	140K04164	140K05572	PWB, MPB (Note 2, 3)
--	140K05571	--	PWB, MPB (Alternate) (Note 2, 3)
6	140K05562	140K05564	PWB, IOP (Note 2, 3)
--	140K09900	--	PWB, IOP (Alternate)(Note 2, 3)
--	140K09890	--	PWB, IOP (Alternate) (Note 2, 3)
7	same	140K05550	PWB, PCO (Note 1, 2, 3)
8	140K05980	140K05981	PWB, LPO (Note 1, 2, 3)
9	same	140K09010	PWB, SPO (Note 1, 2, 3)
10	same	30K08090	Shield, LPO/PCO
11	same	99E1570	10 Amp Fuse (pkg. of 5)
12	same	116E01570	Finger Stock, PWB Shield and Frame Assembly (Note 6)

Note 1: These PWBs are customer purchased options.

Note 2: Always order the first number listed for a PWB. If it is out of stock, you may receive a higher number in that series or you may receive the alternate or a higher number in the alternate series.

Note 3: The actual PWB part number is identified by using the last digit marked on the PWB matrix tag in place of the last digit of the part number. See General Information in Chapter 6 for additional details.

Note 4: This PWB may be used only in processors loaded with ViewPoint 1.1 or higher level software. Do not use this PWB in AI processors unless they have been loaded with Xerox Common LISP (Lyric) software.

Note 5: This PWB may be used in processors loaded with any version of ViewPoint software, however, it must be the PWB used in AI processors unless they have been upgraded with Xerox Common LISP (Lyric) software. See Note 4.

Note 6: Replace the finger stock whenever two consecutive fingers or four fingers from one strip are missing or broken.

Note 7: This PWB is an alternate to P/N 140K02597 except when servicing an AI processor. See Note 5.

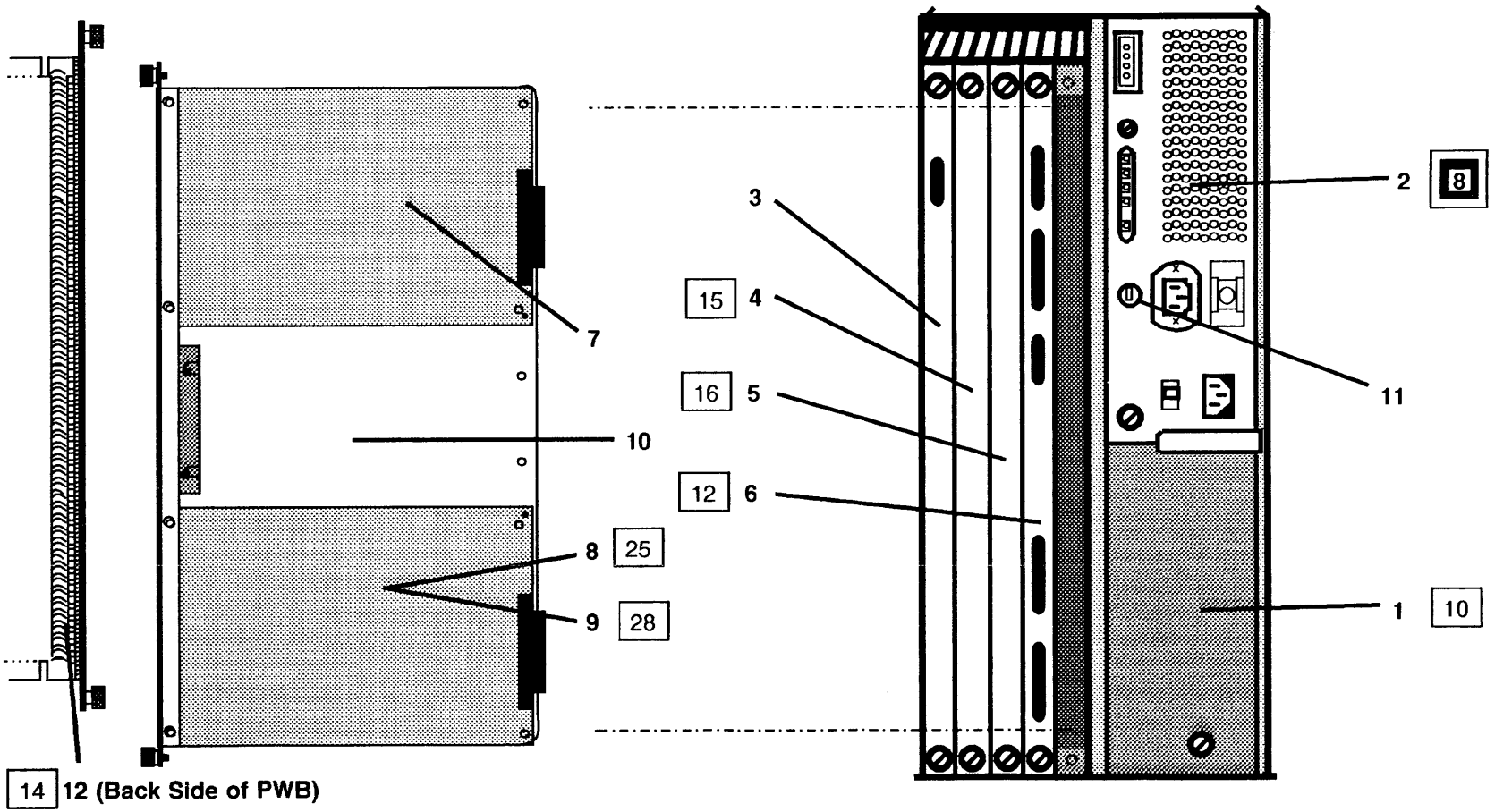


Figure 1. Processor Rigid Disk Drive, Power Supply and PWBs - Rear View

PL 5.2 Removable Rigid Disk Drive Processor: Unique Components

Item	Class A Part	Class B Part	Description
1	same	121S02314	40MB Removable Rigid Disk Drive (Note 1)
--	same	121S02315	80MB Removable Rigid Disk Drive (Note 1)
2	same	152K14080	Removable Rigid Disk Drive Cable
3	same	2E12360	Cover, Top
4	same	2K14070	Cover, C9 Rear
5	same	2K09930	Cover, Front, RRD
6	same	3K02180	Solenoid, Interlock
7	same	152K14100	Harness, Solenoid Power
8	same	30K14140	Bracket, Fan
9	- -	- -	Harness, Fan to Backplane (P/O Item 8)
10	same	4E01010	Dampener, Rigid Drive Door
11	same	116E01870	Finger Stock, 4.7"/11.75cm (Note 2)
12	same	116E01880	Finger Stock, 2.07"/5.18cm (Note 2)

Note 1: This model is the same as the standard 6085, however, the mounting bracket has changed.

Note 2: Replace the finger stock whenever two consecutive fingers or four fingers from one strip are missing or broken.

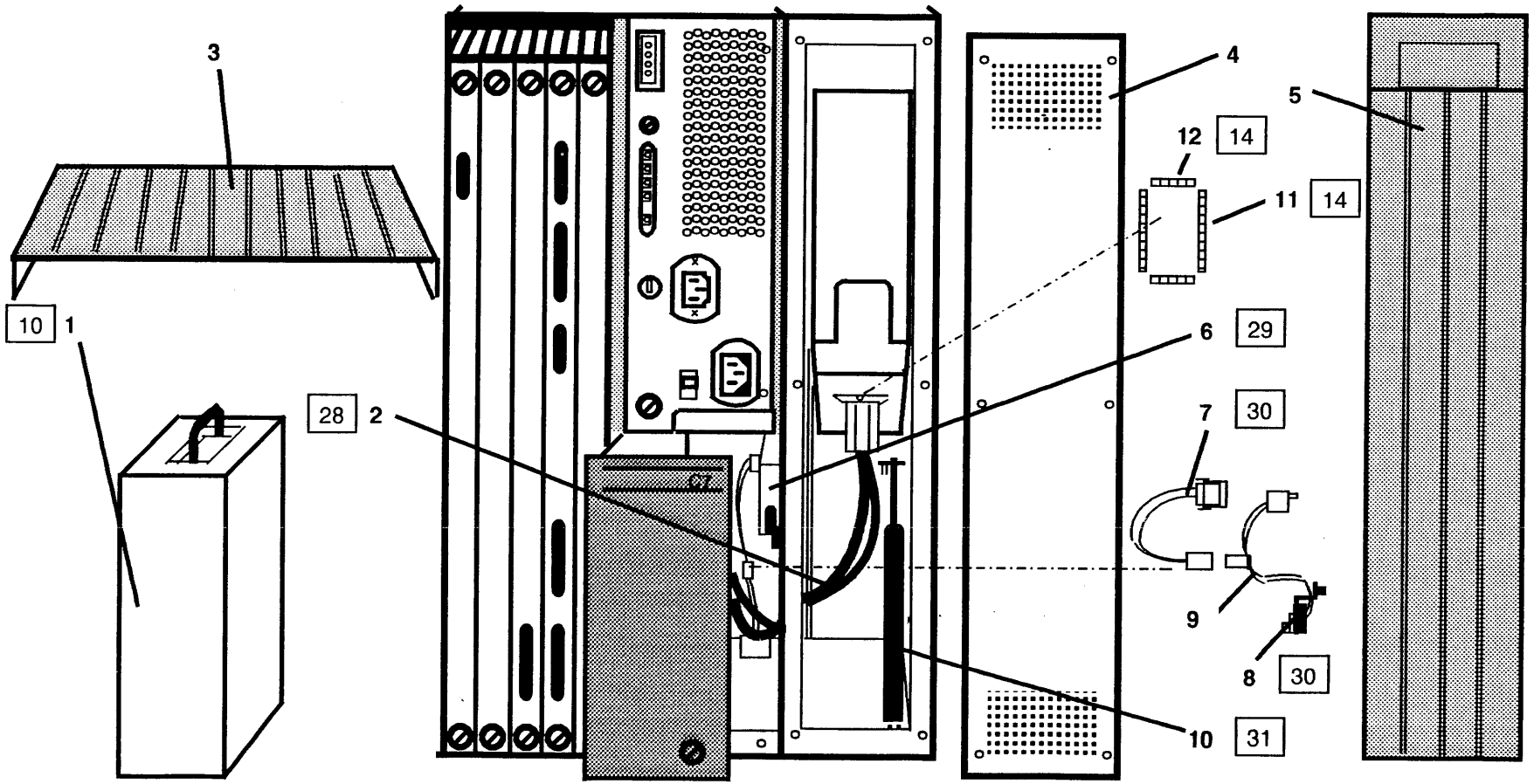


Figure 2. Removable Rigid Disk Drive Processor - Unique Components

PL 5.3 Processor

Item	Class A Part	Class B Part	Description
1	same	140K06820	Backplane PWB
2	same	127K02301	Fan Assembly
3	121K00152	121K02570	360KB Floppy Disk Drive Assembly (US/RX)
--	- -	121K03290	360KB Floppy Disk Drive Assembly (US/RX)
4	same	601K60050	64K Chip Repair Kit (DCM)
5	same	601K60060	256K Chip Repair Kit (DCM/MEB)
6	same	601K60070	4K Chip Repair Kit - MPB PWB (140K05571 and earlier)
--	same	601K15500	4K Chip Repair Kit - MPB PWB (140K05572 and later)
7	same	152K10210	Power Cord (USO/XC ONLY)
--	same	152S92956	Power Cord (RX UK)
--	same	152S92957	Power Cord (RX Europe)
--	same	152S92959	Power Cord (RX Swiss)
8	152S03456	152K17270	Floppy Disk Drive Cable (Standard Length)
--	152K02641	9R88786	Floppy Disk Drive Cable (Optional 6ft. Length) (Note 1)
9	same	2E04750	Cover, Side
10	same	2K02120	Cover, Front
11	same	2P17741	Cover, Top
12	same	2K02140	Cover, Bottom Rear (Note 2)
13	same	2K03680	Cable Retaining Clamp (Note 2)
14	same	2E07640	Door, Rear (Note 3)
15	same	19P04858	Clip, Floppy/Cartridge Tape
16	same	17E00690	Foot, Chassis
17	same	152K10720	LPO/SPO Interface Cable
18	same	97K01261	Kit, LPO (not shown)
19	- -	- -	Plate, Backplane Shield (ref only)
20	same	26P04500	Thumbscrew, Cable
21	same	121K03082	Cartridge Tape Drive Assembly (Note 4)
22	same	152K21420	Cartridge Tape Drive Cable
23	same	73K46581	Kit, Cartridge Tape Drive Boot PROM

Note 1: The Optional 6ft. Length Floppy Disk Drive Cable is a customer purchased accessory. Do not replace a standard length drive cable with a long drive cable unless the customer has puchased this option.

Note 2: The Bottom Rear Cover and the Cable Retaining Clamp must both be ordered if the entire Cable Retainer Assembly must be replaced.

Note 3: Item 15, the Rear Door Label, must also be ordered. This blank label covers an unused cutout in the rear door.

Note 4: Item 22, the Cartridge Tape Drive Assembly, only operates on ViewPoint 2.0 or later software, and B2 hardware. A floppy disk drive is also required.

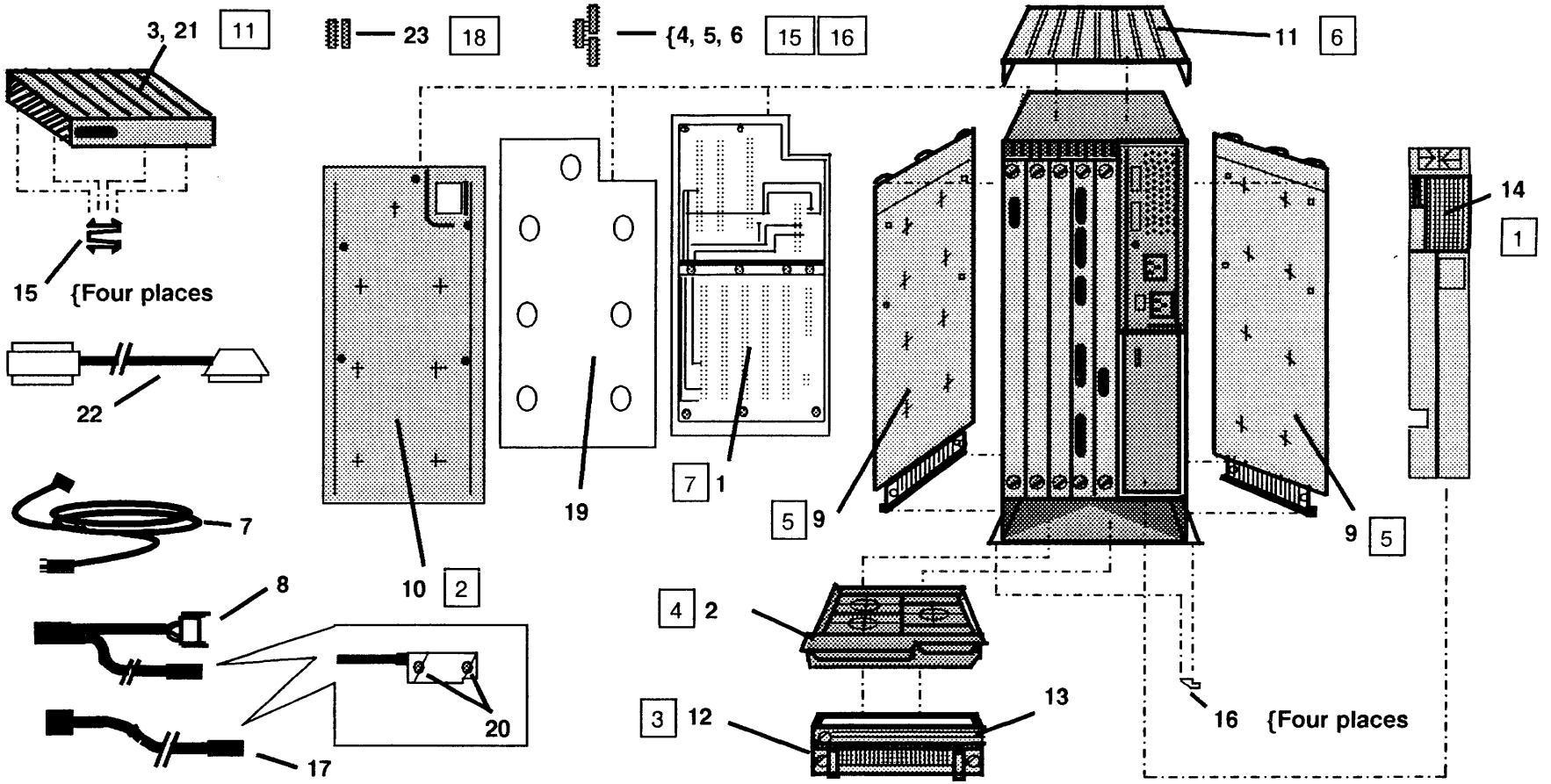


Figure 3. Processor - Rear View

PL 5.4 Display/Keyboard/Mouse

Item	Class A Part	Class B Part	Description
1	123K00030	--	15 Inch Display (USO/XCI)
--	123K00040	--	15 Inch Display (RX)
2	123K00273	123K00730	19 Inch Display (USO/XCI)
--	123K00283	123K00740	19 Inch Display (RX)
3	same	18K00190	Optical Mouse (USO/XCI/RX)(Note 1)
4	110K00080	110K02020	Keyboard Assembly (USO/XCI/RXAus)
--	110K00090	110K02030	Keyboard Assembly (RX)
--	110K00880	110K02050	Keyboard Assembly (XCI - French Canadian)
--	110K00100	110K02040	Keyboard Assembly (Japanese Language)
--	110K00890	--	Keyboard Assembly (AI)
5	- -	--	Keyboard Cable (P/O item 4)
6	same	18K00240	Three-Button Optical Mouse (AI) (Note 1)
7	- -	--	Pad, Mechanical Mouse (P/O Item 3 and Item 6)
8	- -	--	Pad, Optical Mouse (P/O Item 3 and Item 6)
--	same	601K60410	Kit, Optical Mouse Pad (10 Optical Mouse Pads)
9	same	26P04500	Thumbscrews, Cable

RX ONLY:

Item	Part	Description
--	73K01320	Keycap Kit (DEN)
--	73K01330	Keycap Kit (UK)
--	73K01340	Keycap Kit (SWE)
--	73K10350	Keycap Kit (SPA)
--	73K01360	Keycap Kit (NOR)
--	73K01370	Keycap Kit (ITA)
--	73K01380	Keycap Kit (GER)
--	73K01390	Keycap Kit (FRA)
--	73K01400	Keycap Kit (FIN)
--	73K39910	Keycap Kit (Dutch)
--	73K39920	Keycap Kit (Portugese)
--	73K39930	Keycap Kit (Swiss/French)
--	73K39940	Keycap Kit (Swiss/German)

Note 1: This item includes one mechanical mouse pad (item 7) and two optical mouse pads (item 8).

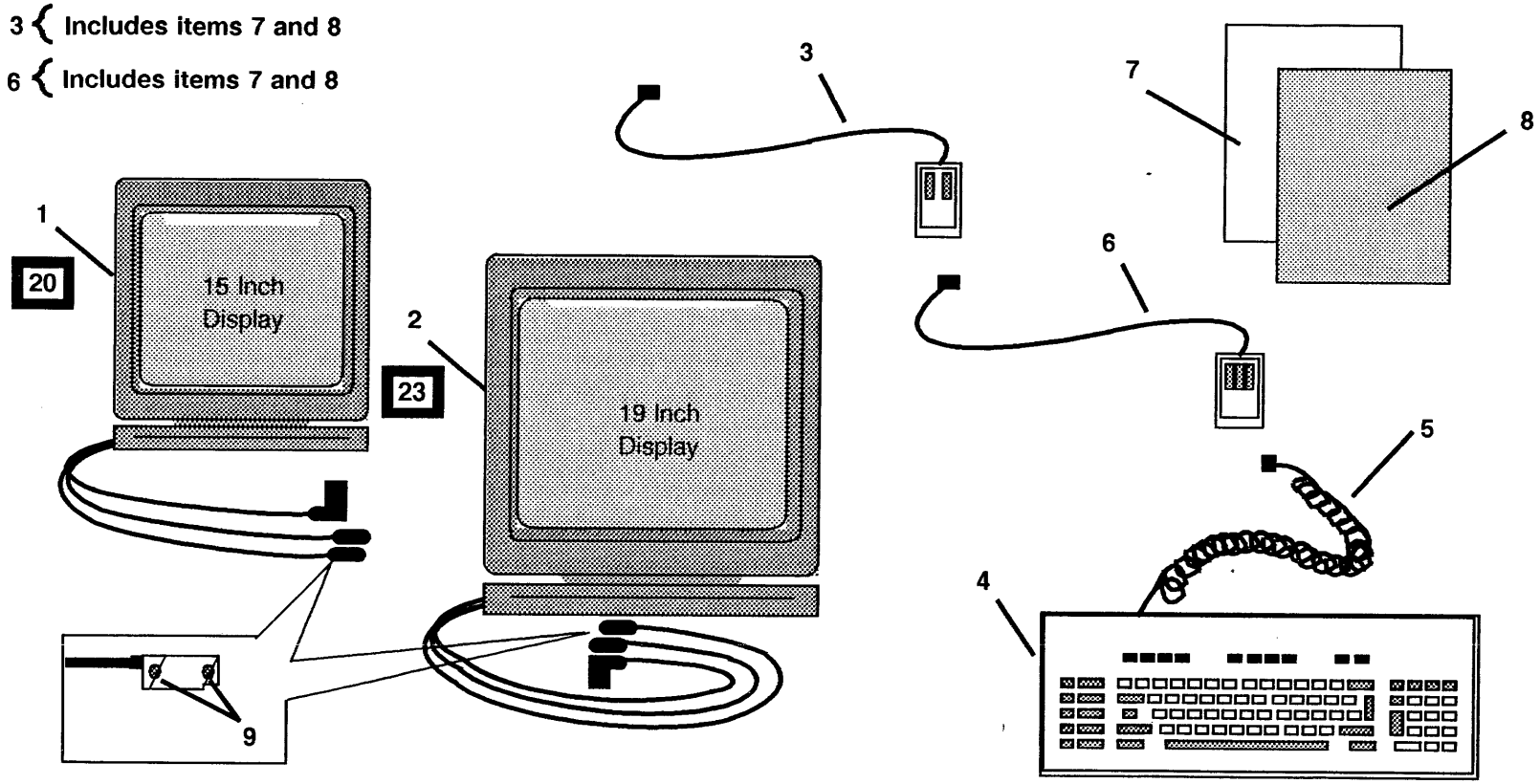


Figure 4. Display/Keyboard/Mouse

Table 1. Class B Processor Base Configuration

Part Description	Part Number
10Mb Rigid Disk Drive Assembly	121S02236
20Mb Rigid Disk Drive Assembly	121S02237
40Mb Rigid Disk Drive Assembly	121S02340
80Mb Rigid Disk Drive Assembly	121S02239
DCM PWB (RX)	140K00461
DCM PWB (USO)	140K00464
IOP PWB (RX)	140K05560
IOP PWB (USO)	140K05564
MEB PWB	140K01004
MPB PWB	140K05571
LPO PWB	140K05981
SPO PWB	140K09010
PCO PWB	140K05550
Keyboard (USO)	110K02020
Keyboard (RX)	110K02030
Keyboard (Japanese Language)	110K02040
Keyboard (XCI - French Canadian)	110K02050
19 Inch Display (USO)	123K00730
19 Inch Display (RX)	123K00740
Floppy Drive	121K02570 121K03290 (alt.)
Cartridge Tape Drive	121K03081

Table 1. Class B Processor Base Configuration

Part Description	Part Number
Power Supply	105K01211
Backplane	140K06820
Fan Assembly	127K02301
Floppy Drive Cable	152K17270
Optional 6 Foot Floppy Drive Cable	9R88786

6. General Procedures/Information

Section Contents

Product Specifications

Tools and Supplies

Change Tags

General Information

Installation

Principles of Operation

Product Specifications

The following specifications are for the devices included in the 6085 PCS Product Support Manual. Unless noted, these specifications apply to the 6085 PCS and any attached devices (i.e., the 4045 Laser CP).

Physical Specifications

Component	Width	Height	Length	Weight
Processor	11.7 in. (29.7 cm)	21 in. (53.3 cm)	12.5 in. (31.7 cm)	60 lb (27.3 kg)
Commercial Widebody Processor	17.2 in. (43.7 cm)	21 in. (53.3 cm)	12.5 in. (31.7 cm)*	64.5 lb (29.3 kg)°
Removable Rigid Disk Drive	4 in. (10.2 cm)	9.75 in. (24.8 cm)	10 in. (25.4 cm)	9 lb (4.1 kg)† 11.5 Lbs (5.2 kg)‡
Keyboard	7.5 in. (19 cm)	1.25 in. (3.18 cm)	19 in. (48.3 cm)	4 lb (1.8 kg)
Mouse	2.25 in. (5.7 cm)	1.25 in. (3.18 cm)	3.75 in. (9.5 cm)	1 lb (.45 kg)
15 Inch Display	15 in. (38.1 cm)	14 in. (35.6 cm)	15 in. (38.1 cm)	30 lb (13.6 kg)
19 Inch Display	18.97 in. (482 mm)	18.55 in. (471.17 mm)	16.05 in. (407.75 mm)	50 lb (22.7 kg)
Cartridge Tape Drive/Floppy Disk Drive	9.5 in. (24 cm)	2 in. (5 cm)	12.5 in. (31.7 cm)	6 lb (2.7 kg)
4045 Laser CP	27.5 in. (70 cm)	10.5 in. (27 cm)	21.5 in. (55 cm)	140 Lb (63.5 kg)

* 23.5 ins (59.7cm) with RRD compartment open
° without RRD installed
† 40MB RRD
‡ 80MB RRD

Electrical Specifications

Circuit conductors and ground conductors must be installed in accordance with local electrical requirements. A standard 15A, 2-pole, 3-wire grounded duplex receptacle is required for proper machine operation.

Extension cords cannot be used. Although three-wire-to-two-wire adapter plugs can be used, they must be installed by a qualified electrician and checked for proper grounding.

AC power for the 6085 Processor is obtained from a single grounded wall outlet. The 6085 Display, Keyboard/Mouse, Tape Drive, and Floppy Drive receive their power from the Processor.

Voltages required at the wall outlet for the 6085 Processor and the 4045 Laser CP are:

USO/XCI
103 to 127 VAC (RMS) line to neutral, 0 to 3 VAC neutral to ground, Single Phase, at 60 Hz

RX
207 to 253 VAC (RMS) line to neutral, 0 to 3 VAC neutral to ground, Single Phase, at 50 Hz

Maximum power consumption is measured at the nominal line voltage of 115 VAC (USO/XCI), 230 VAC (RX). The following table contains the power consumption specifications for fully optioned model configurations.

Equipment	Current (USO/XCI)	Power (USO/XCI)	Current (RX)	Power (RX)
Processor (with 15 or 19 inch display)	4.13 Amp	473 Watts	1.88 Amp	473 Watts
4045 Laser CP	6.67 Amp	800 Watts	3.33 Amp	800 Watts

Environmental Specifications

Temperature Range

6085 PCS	50°F to 90°F (10°C to 32°C)
4045 Laser CP	59°F to 90°F (15°C to 32°C)

Humidity Range

15% to 85%; max. wet bulb temperature 78°F (26°C)

Operating Altitude

Up to 6,000 ft (1830 m) above sea level

Heat Dissipation

Processor (Max Config)	1462 btu/hr
Processor (Min Config)	853 btu/hr
Display, 15 inch	205 btu/hr
Display, 19 inch	341 btu/hr
4045 Laser CP	3413 btu/hr

Audible Noise

Processor	47 db
4045 Laser CP	55 db

Space Requirements

6085 PCS

For proper operation and ventilation there should be a two inch clearance on both sides and the rear of the processor, and the top of the display should not be covered or blocked.

Space requirements for service should allow the processor to be easily and safely moved, with the cables attached, into an area large enough to allow easy access to the rear of the unit.

6085 Commercial Widebody

For proper operation and ventilation there should be a two inch clearance on both sides and the rear of the processor, and the top of the display should not be covered or blocked.

Movable Installation

When the Commercial Widebody processor is installed on a hard, smooth surface such as linoleum or concrete, space requirements for service should allow the processor to be easily and safely moved, with the cables attached, into an area large enough to allow easy access to the rear of the unit.

Fixed Installation

For Commercial Widebody processors installed on carpeting, refer to the minimum space requirements shown on the following page (Figures 1 and 2).

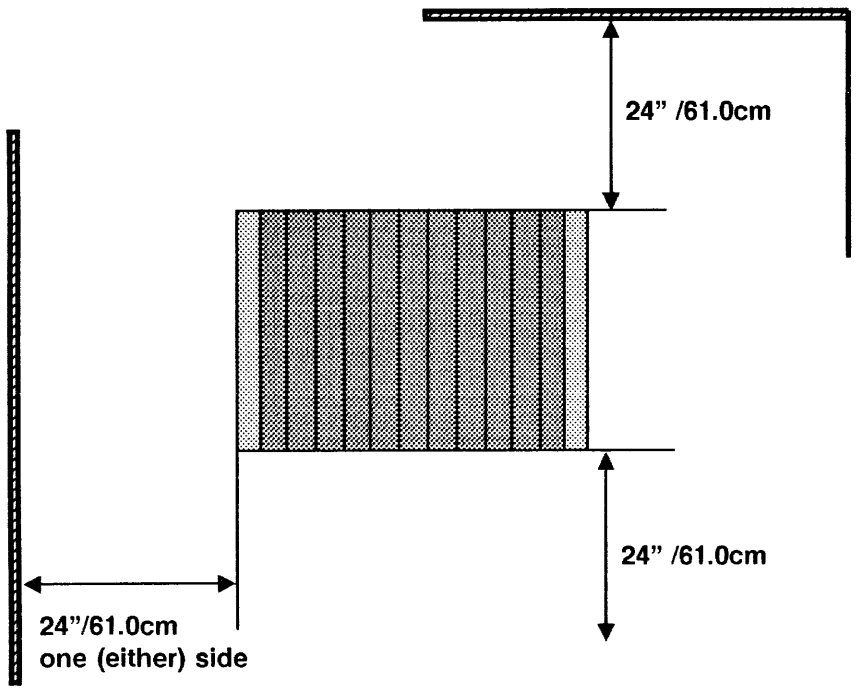


Figure 1. Space Requirements for 6085 Commercial Widebody (top view)

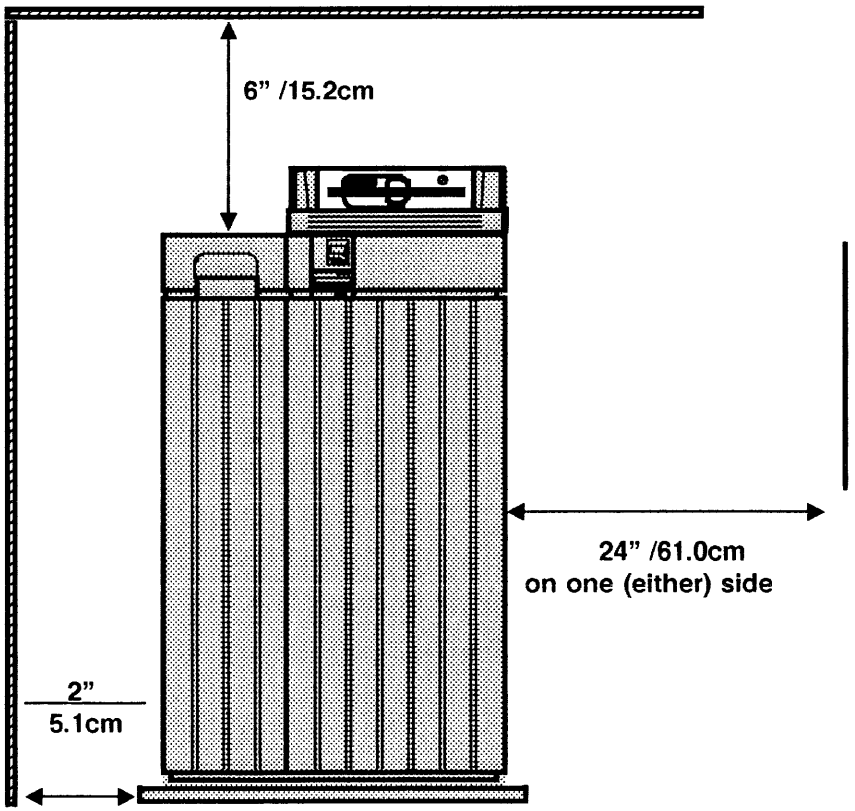


Figure 2. Space Requirements for 6085 Commercial Widebody (front view)

4045 Laser CP

It is important that the printer is placed on a level surface. Figures 3 and 4 show the minimum space required for ventilation and service of the equipment.

7650 Pro Imager

Refer to your 7650 Pro Imager service manual.

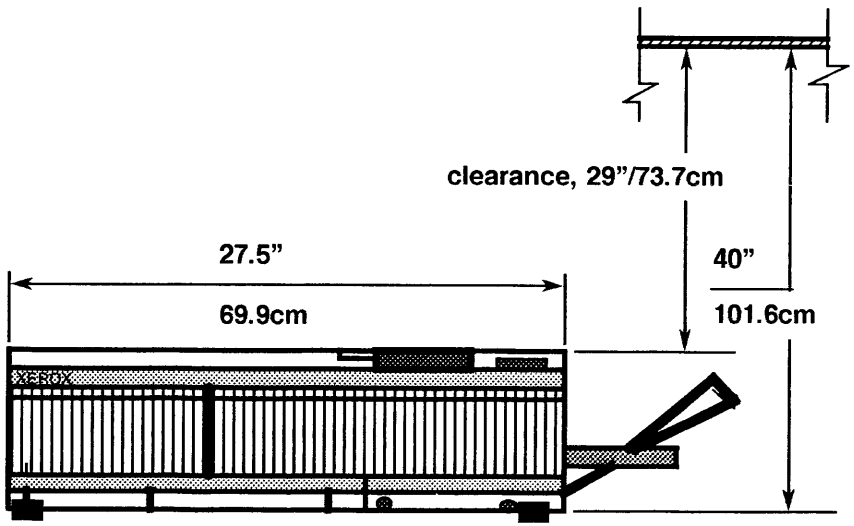


Figure 3. Space Requirements for 4045 Laser CP (front view)

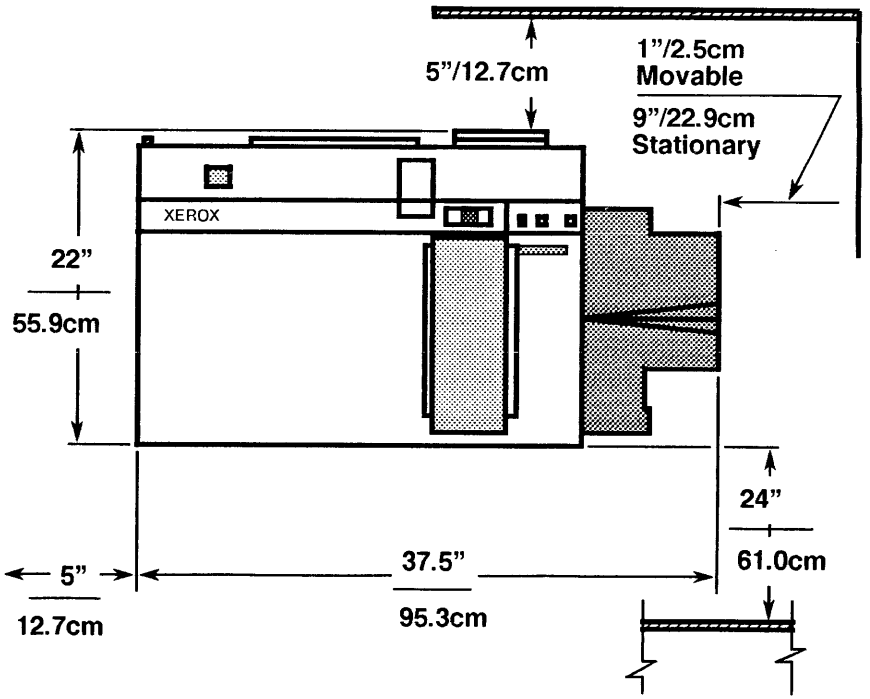
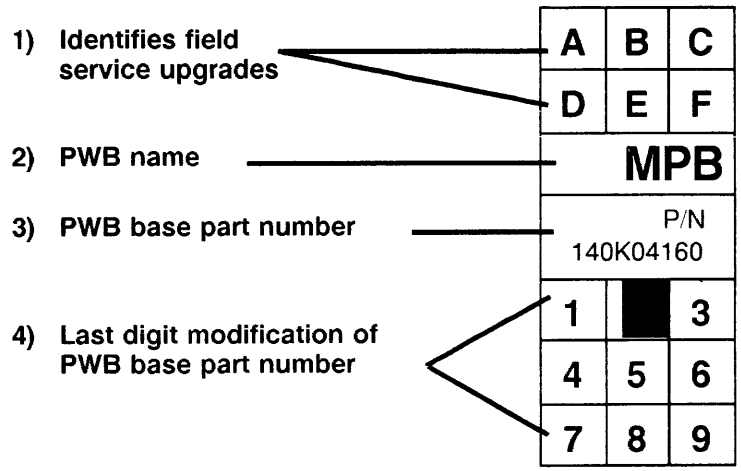


Figure 4. Space Requirements for 4045 Laser CP (top view)

PWB Matrix

The PWB Matrix label is located on each PWB stiffener. There are four parts to a PWB Matrix label. The part number always ends with the number 0 unless one of the numbers in the matrix just below the part number is blocked out. If a number (1 through 9) in the matrix is blocked out, the part number ends with that number rather than 0. In the example below the part number is 140K01462.



Product Codes and Configurations

A list of the product codes for the 6085 Series devices is located in Tables 1A, 1B, and 2. These devices are used to configure the various models of the 6085 Series. Processor model configuration matrixes for USO/XC and RX are in Tables 3A and 3B. The processor model configuration matrixes for the 1186 AIS are in Tables 4A and 4B. Each model configuration matrix contains the columns described below.

Hardware/Software Column

The first column in each matrix contains a list of required and optional devices used to configure the various models.

Models Columns

The columns are divided into the specific models of the product series. Each model column contains the symbol "X", aligned with the corresponding items in the Hardware column. The "X" symbols in each column identify devices used to configure that specific model. Each model has only one device unless the "X" is substituted with a specified number.

Table 1A. 6085/1186 Series Basic Component Product Codes Class A

Hardware	USO/XC	RX
6085 Processor (with 10 MB Drive)	53DB	82D
6085 Processor (with 20 MB Drive)	53DC	83D
6085 Processor (with 40 MB Drive)	53DD	84D
6085 Processor (with 80 MB Drive)	53DE	85D
1186 Processor (with 20 MB Drive)	62HC	-
1186 Processor (with 40 MB Drive)	62HD	-
1186 Processor (with 80 MB Drive)	62HE	-
6085 Commercial Widebody	49PA	-
20MB Removable Rigid Drive	14K	-
40 MB Removable Rigid Drive	15K	-
80 MB Removable Rigid Drive	16K	-
15 Inch Display	63D	91D
19 Inch Display	64D	92D
US Keyboard	65D	-
French-Canadian Keyboard	54D	-
AI Keyboard	38J	-
Japanese Keyboard	94D	-
European Keyboard	-	93D
Optical Mouse	80D	80D
AI Mouse (three-button)	39J	-
360 KB Floppy Disk Drive	78D	78D
Cartridge Tape Drive	69R	69R

Table 1B. 6085/1186 Series Basic Component Product Codes Class B

Hardware	USO/XC	RX
6085 Processor (with 10 MB Drive)	53DL	82D
6085 Processor (with 20 MB Drive)	53DM	83D
6085 Processor (with 40 MB Drive)	53DN	84D
6085 Processor (with 80 MB Drive)	53DP	85D
1186 Processor (with 20 MB Drive)	62HM	-
1186 Processor (with 40 MB Drive)	62HN	-
1186 Processor (with 80 MB Drive)	62HP	-
6085 Commercial Widebody	49P	-
20MB Removable Rigid Drive	14K	-
40 MB Removable Rigid Drive	15K	-
80 MB Removable Rigid Drive	16K	-
15 Inch Display	63D	91D
19 Inch Display	64D	92D
US Keyboard	65D	-
French-Canadian Keyboard	54D	-
AI Keyboard	38J	-
Japanese Keyboard	94D	-
European Keyboard	-	93D
Optical Mouse	80D	80D
AI Mouse (three-button)	39J	-
360 KB Floppy Disk Drive	78D	78D
Cartridge Tape Drive	69R	69R

Table 2. 6085/1186 Series Option and Kit Product Codes

Hardware	USO/XC	RX
512 KB Memory Expansion PWB	69D	69D
Network Connection	62D	62D
PC Option	77D	77D
Laser Printer Option	55D	55D
Scanner / Printer Option	24L	24L
512 KB Memory Kit	74D	74D
Control Store Memory Kit	75D	75D
10MB Rigid Disk Drive Upgrade Kit	58D	58D
20MB Rigid Disk Drive Upgrade Kit	59D	59D
40MB Rigid Disk Drive Upgrade Kit	60D	60D
80MB Rigid Disk Drive Upgrade Kit	61D	61D

Table 3A. 6085 PCS Model Configuration Matrix - Class A

Hardware All models require a Keyboard/Mouse and a Display (15 or 19 inch).	Models 6085 System Processor			
	Model 53DB (USO/XC) 82D (RX)	Model 53DC (USO/XC) 83D (RX)	Model 53DD (USO/XC) 84D (RX)	Model 53DE (USO/XC) 85D (RX)
Required Devices				
6085 Processor with 1152 KB Memory and				
10MB Disk Drive	X			
20MB Disk Drive		X		
40MB Disk Drive			X	
80MB Disk Drive				X
Optional Devices				
360 KB Floppy Disk Drive	X	X	X	X
Cartridge Tape Drive	X	X	X	X
512 KB Memory Expansion PWB	X	X	X	X
512 KB Memory Kits	(1-4)	(1-4)	(1-4)	(1-4)
Control Store Memory Kit	X	X	X	X
PC Emulation Option	X	X	X	X
Laser Printer Option	X	X	X	X
Scanner/Printer Option				X

Table 3B. 6085 PCS Model Configuration Matrix - Class B

Hardware All models require a Keyboard/Mouse and a Display (15 or 19 inch).	Models 6085 System Processor			
	Model 53DL (USO/XC) 82D (RX)	Model 53DM (USO/XC) 83D (RX)	Model 53DN (USO/XC) 84D (RX)	Model 53DP (USO/XC) 85D (RX)
Required Devices				
6085 Processor with 1152 KB Memory and				
10MB Disk Drive	X			
20MB Disk Drive		X		
40MB Disk Drive			X	
80MB Disk Drive				X
Optional Devices				
360 KB Floppy Disk Drive	X	X	X	X
Cartridge Tape Drive	X	X	X	X
512 KB Memory Expansion PWB	X	X	X	X
512 KB Memory Kits	(1-4)	(1-4)	(1-4)	(1-4)
Control Store Memory Kit	X	X	X	X
PC Emulation Option	X	X	X	X
Laser Printer Option	X	X	X	X
Scanner/Printer Option				X

Table 4A. 1186 AIS Model Configuration Matrix - Class A			
Hardware	Models		
	1186 System Processor		
	Model 62HC (USO)	Model 62HD (USO)	Model 62HE(USO)
Required Devices *			
1186 Processor with 2.1 MB Memory and 20MB Disk Drive	X		
40MB Disk Drive		X	
80MB Disk Drive			X
Optional Devices			
360 KB Floppy Disk Drive	X	X	X
512 KB Memory Kits	(1-3)	(1-3)	(1-3)
Control Store Memory Kit	X	X	X
PC Emulation Option	X	X	X
Laser Printer Option	X	X	X

* All models require an AI Keyboard/Mouse and a Display (15 or 19 inch). The minimum configuration also includes the 512 KB Memory Expansion PWB and one 512 KB Memory Kit. Up to three additional memory kits may be added.

Table 4B. 1186 AIS Model Configuration Matrix - Class B			
Hardware	Models		
	1186 System Processor		
	Model 62HM (USO)	Model 62HN (USO)	Model 62HP(USO)
Required Devices *			
1186 Processor with 2.1 MB Memory and 20MB Disk Drive	X		
40MB Disk Drive		X	
80MB Disk Drive			X
Optional Devices			
360 KB Floppy Disk Drive	X	X	X
512 KB Memory Kits	(1-3)	(1-3)	(1-3)
Control Store Memory Kit	X	X	X
PC Emulation Option	X	X	X
Laser Printer Option	X	X	X

Tools

The following tools are required by all Service Representatives to service the 6085 Series products.

Tool Number	Description
600T191	Xerox Tool Case
600T293	Non-Ferrous Screwdriver
600T785	Flashlight
600T863	Inspection Mirror
600T932	All Handle (Xcelite)
600T934	1/4" Nut Driver
600T956	Pocket Screwdriver
600T959	5", 5/16" Blade
600T960	6", 3/16" Blade
600T1008	Quick Wedge Screw Starter
600T1362	#2 Phillips Blade
600T1605	CRT Alignment Tools (Non-metal)
600T1656	Universal Loopback Tool
600T1616	Digital Multimeter
600T1617	Test Lead Kit
600T1706	Transceiver Terminator Tool
600T80037	IC Chip Insertion Tool, 16 Pin
600T80041	IC Chip Insertion Tool, 20 Pin
600T80042	IC Chip Removal Tool
600T91616	Interlock Cheater

Supplies

The following supplies are required by all Service Representatives to service the 6085 Series products.

Supply Number	Description
9R88432	$\frac{1}{4}$" Data Head Cleaning Cartridge Kit
73P80439	$5\frac{1}{4}$" Drive Head Cleaning Kit
600P87949	$5\frac{1}{4}$" floppy disk holder (USO)
601S00074	Anti-Static Cleaner (USO)
700P03220	6085 Diagnostics Disks with holder (USO)
8R90179	Anti-Static Cleaner (RX)
18E00060	Optical Mouse Pad (RX)
73K45980	6085 Diagnostics Disks - 1.5.2 (RX)

The following supplies are customer purchased items. The information is provided here for information purposes only.

Supply Number	Description
8R1283	Optical Mouse Pads (25 pads per package) (USO)
9R88431	Cartridge Tape (3M DC600 or equivalent)
9R88786	Optional 6 foot Floppy Disk Drive Cable (Class B)
11R66003	$5\frac{1}{4}$" Double-sided, Double-density Floppy Disks (10 diskettes per box) (USO)

Change Tags

Introduction

All important modifications of equipment, which are installed in the factory or the field, are identified by a tag number. Letters are used to identify classifications of the changes. Letters and classifications are:

M	Mandatory
R	Install at time of repair
O	Optional
N	Not for field retrofit

The Change Tag Index denotes the Change Tag number, the classification, the description of the change, the kit number associated with the change (if any), and the serial numbers of the equipment affected by the change.

The 6085 PCS has one matrix label. The matrix label is adjacent to the Options PWB and the rigid disk drive. Any important modifications to the processor, the rigid disk drive, or the related cables or connectors, must be indicated on the matrix label.

The floppy disk drive has a separate matrix label. This matrix label is located on the bottom of the floppy drive case. Any important modifications to the floppy drive must be indicated on the matrix label.

The following Change Tag Index tables (Tables 5 and 6) provide a list of tag changes.

Table 5. Change Tag Index for the 6085 PCS		
Tag #	**Description**	**Serial # Cut-in**
1 N	Tag 1 identifies B1 processors in which the IOP PWB has been upgraded to the "I" level EPROMs.	53D-00999
2 M	Tag 2 is required on 140K02592 and 140K02594 DCM PWBs to ensure hardware compatibility with future software releases. Failure to complete this retrofit will cause intermittent software crashes. (Kit # 601K50570)	53D-10000 to 13999
3 O	Tag 3 identifies processors in which the IOP PWB has been upgraded to the "K" level EPROMs. (Kit # 601K60600)	53D-025543
4	Tag 4 - Not used.	--
5 O	Tag 5 identifies processors that have the low noise fan assembly (127K02301) installed.	53D-TBA

Table 6. Change Tag Index for the 6085 / 1186 Floppy Disk Drive		
Tag #	**Description**	**Serial # Cut-in**
1 R	Tag 1 identifies floppy disk drives 121K00151 (US) or 121K01321 (Siemens) that have been reworked to correct an initial boot problem. Kit #600K08270 will roll the part numbers to 121K00152 (US) or 121K01322 (Siemens).	N/A

General Information

Tip 1 B Reset Button

There are reports that the B Reset buttons on Astec power supplies have been pushed into the on/off switch assembly, making the B Reset button inoperative. This problem can be fixed by performing the following steps.

1. Remove the power supply (4.8).
2. Locate the mini-PWB under the on/off switch assembly.
3. Use a small screwdriver to push up on the mini-PWB until it snaps into place on top of the supports. (There are two supports on each side of the switch assembly.)
4. Replace the power supply (4.8).

Tip 2 Keyboard/Mouse Connector

When the mouse connector has been disconnected a few times, the plastic piece in the Keyboard/Mouse receptacle may loosen and lift up. Indications that the mouse is defective occur when the pins do not make a good connection. The black plastic piece keeps the pins separated. The plastic piece is located at the bottom of the receptacle when viewed from the rear of the keyboard with the keys facing up.

To correct this problem, insert a screwdriver into the Keyboard/Mouse receptacle and snap the plastic piece back into place, being careful not to bend any pins. When inserting the mouse connector, be careful not to loosen the plastic piece.

Tip 3 Restoring 6085 Plastic

There have been isolated instances where 6085 plastic covers have a "blotchy" appearance. Wipe these units with wax treated towels (35P1638) to effectively restore the appearance of the plastic.

Tip 4 PWB Handling

There are many causes for PWB failures. One frequent cause is Electrostatic Discharge (ESD). The following information about ESD may be useful.

Static, or stationary electricity, can be generated by the separation of two surfaces. One surface becomes positively charged while the other becomes negatively charged. Static electricity, while not a problem as long as it stays static (without motion), searches for an opposite charge with which to link. The little "zap" you feel when you touch someone or reach for a door knob is ESD. Also, the "crackle" you hear, or the sparks you see, when separating clothing after it has been in a dryer is another example of ESD. The type of static discharge described above is very small; most of it cannot even be felt. The smallest charge you can feel is 3,000 volts; the smallest charge you can see is 5,000 volts; the smallest charge you can hear is 10,000 volts.

Some of the new semiconductor devices are sensitive to as little as 10 volts of Electrostatic Discharge. This means that you may not be aware of ESD damage when it occurs. ESD can cause different types of failures:

- Lock-up: This type of failure is temporary and can be corrected by switching off the system power and/or rebooting.
- Soft: This type of failure can make the life of a component shorter and/or cause intermittent malfunctions of the equipment. A soft failure may not always be detected by the Service Representative.
- Hard: This type of failure makes a component inoperative.

It is very important to handle PWBs properly to prevent ESD. The following guidelines will reduce the possibility of damage.

- Immediately before handling any PWB, ground yourself to an earth or building ground. This should be done every few minutes if you are continuing to work with a PWB or a component.
- Handle the PWB only by the edges. Never touch the components mounted on the PWB unless you are replacing or repairing them individually.
- When storing PWBs, ensure they are stored in the original packaging, including antistatic bags.
- When returning PWBs, ensure they are stored in the original packaging, including antistatic bags.
- When handling integrated circuit chips, handle them only by the body and never by the leads (legs).
- Never place PWBs or components on a metal surface.

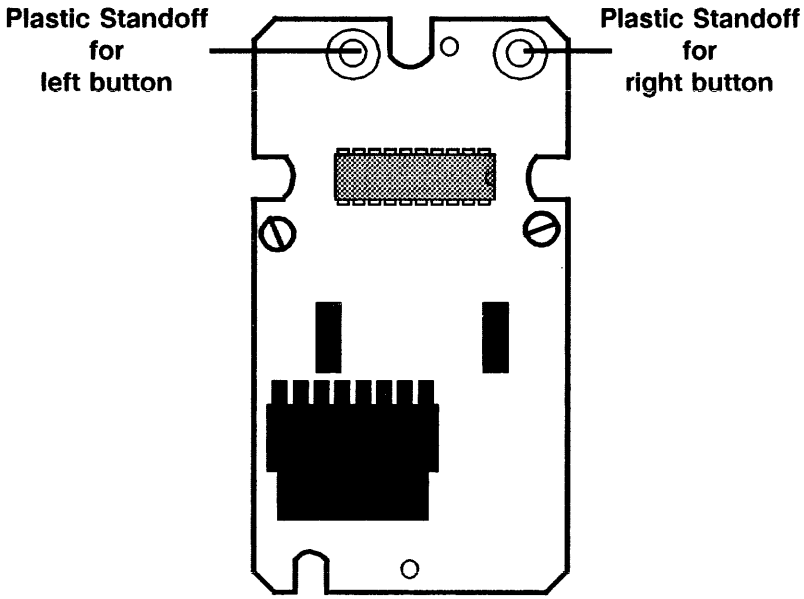
If you take a little care and consideration during PWB handling, you may avoid unnecessary repairs and/or replacement of components. Customer Satisfaction, Xerox resources, and your time will all be positively affected if ESD failures are reduced.

Tip 5 Optical Mouse Button Fix

There is a high failure rate with 18K00160 Optical Mouse Buttons. The buttons travel too deep inside the mouse cover and break.

Use two Plastic Standoffs (14P80522) to save the expense of a service call, the cost of a new mouse (18K00190) and most of all, the customer's frustration with an inoperable workstation.

The following fix is simple and takes only a few minutes to complete. Loosen the two screws and remove the mouse cover. Use either two-sided foam tape or RTV and position the plastic standoffs as shown.



Optical Mouse Button Fix

Installation

6.1 Hardware Installation Overview

The Xerox 6085 Professional Computer System consists of four basic components: the processor, the display, the keyboard, and the optical mouse. Several optional components are also available for the 6085. These are: the floppy disk drive; the cartridge tape drive; the PC Option (PCO) - a personal computer emulation PWB; the Memory Expansion Board (MEB) - a memory expansion PWB; the Documenter package, which includes a Laser Printer Option PWB (LPO) and a 4045 Laser CP; and the Scanner/Printer Option (SPO) - a PWB with a port for the 7650 Pro Imager Scanner.

If your customer did not receive the four basic components, any optional components that were ordered, the software, or the customer documentation, have your customer call their Marketing Representative.

Each system component is individually packaged. The items contained in each shipping box are:

- Processor: the processor, the power cord, and instructions for unpacking the unit.
- Display: the display
- Keyboard: the keyboard
- Mouse: the optical mouse, two optical mouse pads, and one mechanical mouse pad.
- Floppy Disk Drive: the floppy disk drive, a set of four (4) clips, and the floppy disk drive cable.
- Cartridge Tape Drive: the cartridge tape drive, a set of four (4) clips, and the cartridge tape drive cable.
- Memory Expansion Board: the MEB PWB.
- PC Option: the PCO PWB.
- Documenter: See section 6.17 for a list of the items included with this option.
- Scanner/Printer Option: the SPO PWB. (See the 7650 Pro Imager service manual for a list of other components used with this option.)

NOTE: The 6085 Commercial Widebody processor has a removable rigid disk drive that is packaged separately.

6.2 Electrical Requirements

Voltage:

115V United States/Canada
230V Rank Xerox

6.3 Safety Requirements

The Xerox 6085 Professional Computer System has been designed and tested to meet rigid safety requirements. These include safety agency (UL and CSA) examination, approval, and compliance to established environmental and safety standards. Attention to the following notes will ensure the continued safe operation and performance of the system.

- Always connect the system to a properly grounded power source receptacle.

WARNING

Improper connection of the grounding conductor may result in electrical shock.

- Never use a ground adapter plug to connect the system to a power source receptacle that does not have a ground connection terminal.
- Never attempt any maintenance functions that are not specifically called out in the 6085 PCS Service Manual.
- Never remove any covers or guards that are fastened with screws, except when directly instructed to do so by the 6085 PCS Service Manual. Always follow the instructions exactly as they are written.
- Never override or "cheat" electrical or mechanical interlock devices.
- Always exercise care when moving the system. Perform REP 4.26, if possible, before you move the processor.
- Never operate the system if unusual noises or odors are noticed. Disconnect the power cord from the power source receptacle.
- Never operate the system with the Removable Rigid Drive Compartment in the open position.

6.4 Unpacking the Basic System Components

The following instructions tell you how to unpack and install the basic 6085 system components and the floppy disk drive. Follow the written instructions and refer to the illustrations.

6.4.1 Unpacking the Processor Unit

1. Open the box marked "6085 Processor Unit" by tearing the perforations and removing the top portion of the box.
2. Fold down the foam packing insert at the front of the processor.
3. Stand at the front of the processor and grip the handle located at the base of the front cover.
4. Carefully slide the processor half-way off the carton base (Figure 5).

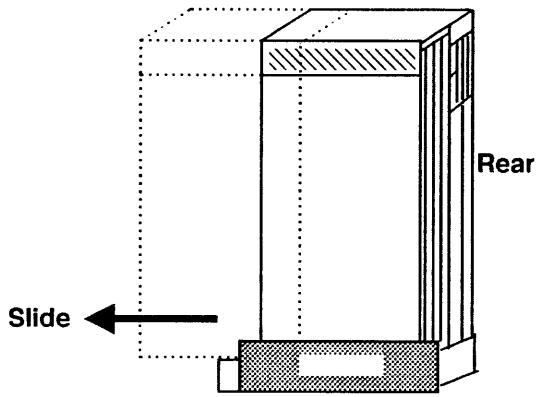


Figure 5. Sliding the Processor Off of the Carton Base

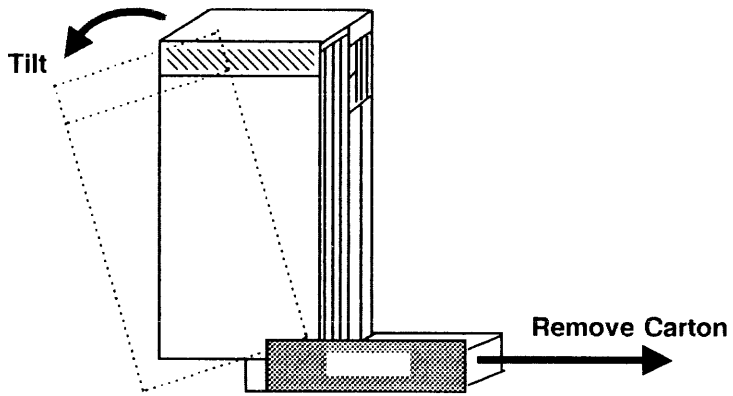


Figure 6. Removing the Carton Base

5. Tilt the front of the processor downward until the bottom edge touches the floor (Figure 6).
6. Tilt the processor a bit more and, while holding the processor at that angle, carefully pull the carton base out from under the processor (Figure 6).

6.4.2 Unpacking the Removable Rigid Drive

NOTE: The 6085 Commercial Widebody rigid disk drive is packaged separately from the processor. Install it only after the processor is in position (see section 6.6).

NOTE: The rigid disk drive for a Commercial Widebody processor is shipped in a separate box.

1. Unpack the box marked "Rigid Disk Drive." (Figure 7)
2. Check the label on the rigid disk drive to ensure that it is the size your customer ordered. If it is the size ordered, unpack the remaining system components. If it is not the size ordered, do not unpack the remaining system components; have your customer contact their Marketing Representative.

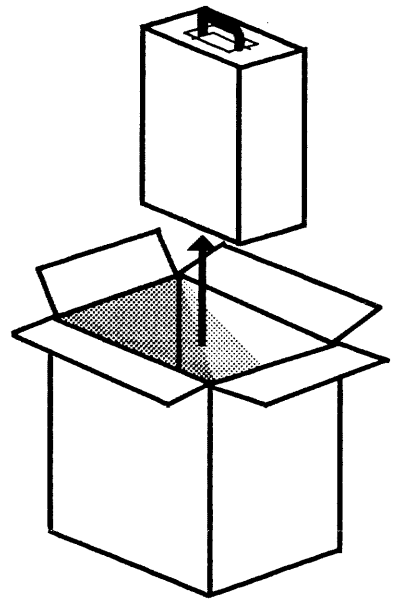


Figure 7. Unpacking the Removable Rigid Drive

6.4.3 Unpacking the Display

1. Unpack the box marked "Display." (Figure 8)

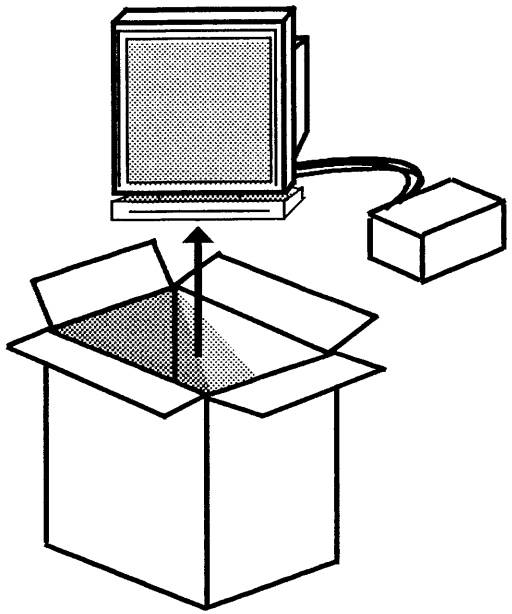


Figure 8. Unpacking the Display

NOTE: To unpack the display without lifting it, place the box on its side (so that the display is resting on the foam packing material) and slide the foam and the display out of the box together.

6.4.4 Unpacking the Keyboard

1. Unpack the box marked "Keyboard." (Figure 9)

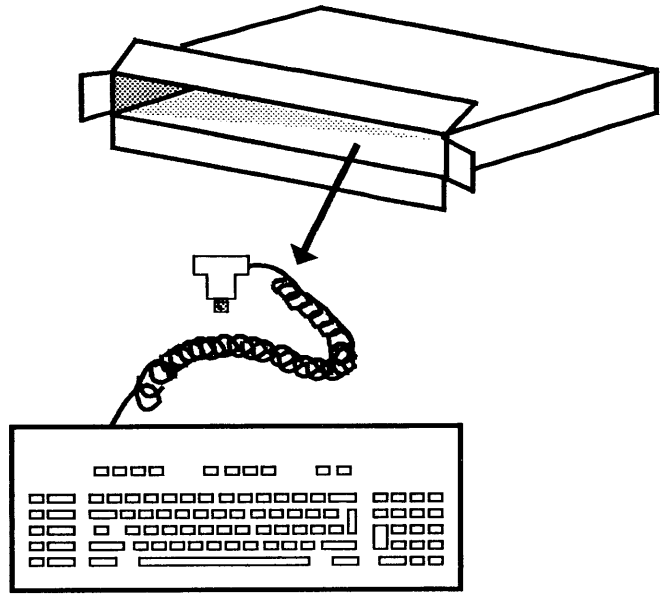


Figure 9. Unpacking the Keyboard

6.4.5 Unpacking the Mouse

1. Unpack the box marked "Mouse."

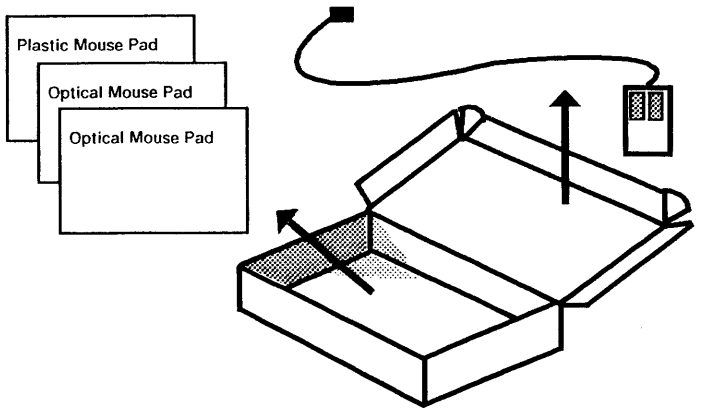


Figure 10. Unpacking the Mouse

6.5 Unpacking the Optional Components

6.5.1 Unpacking the Floppy Disk Drive

1. Unpack the box marked "Floppy Disk Drive." (Figure 11)

NOTE: A set of four (4) clips are also included in this box.

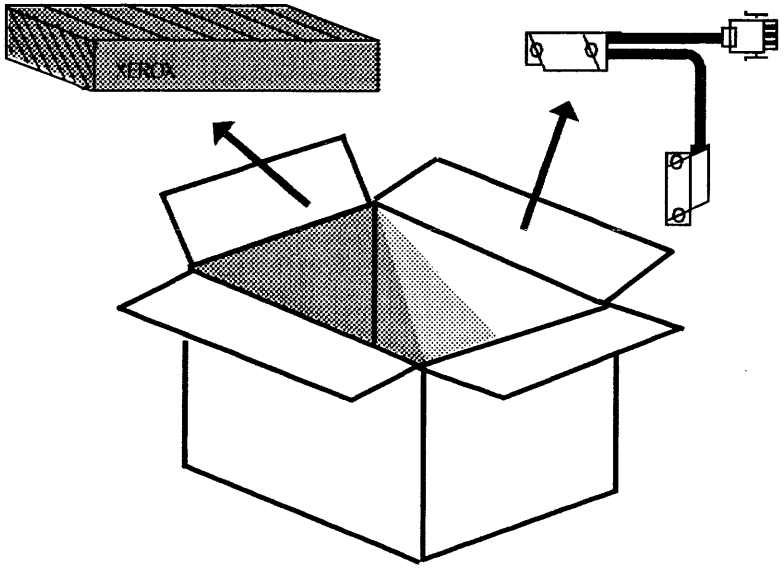


Figure 11. Unpacking the Floppy Disk Drive

6.5.2 Unpacking the Cartridge Tape Drive

1. Unpack the box marked "Cartridge Tape Drive." (Figure 12)

NOTE: A set of four (4) clips are also included in this box.

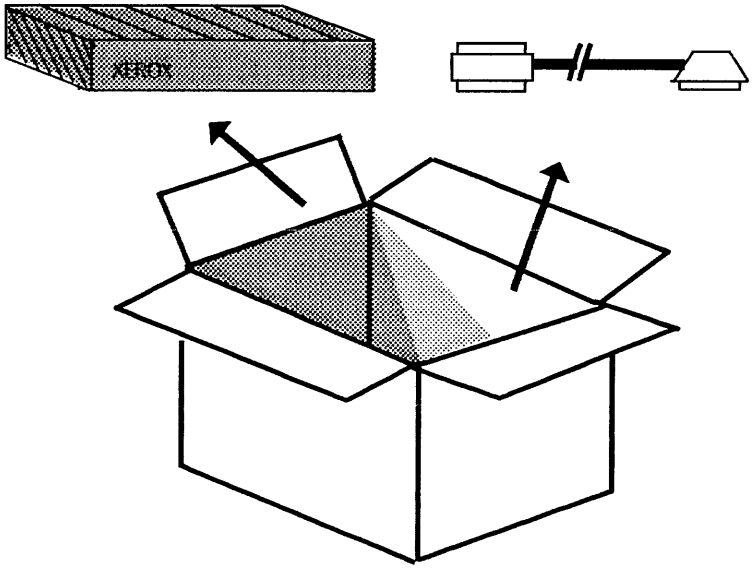


Figure 12. Unpacking the Cartridge Tape Drive

6.6 Positioning the System Components

1. Place the processor next to the table designated for the workstation and within eight feet of a wall outlet (Figure 13).
2. Place the other components on the table.

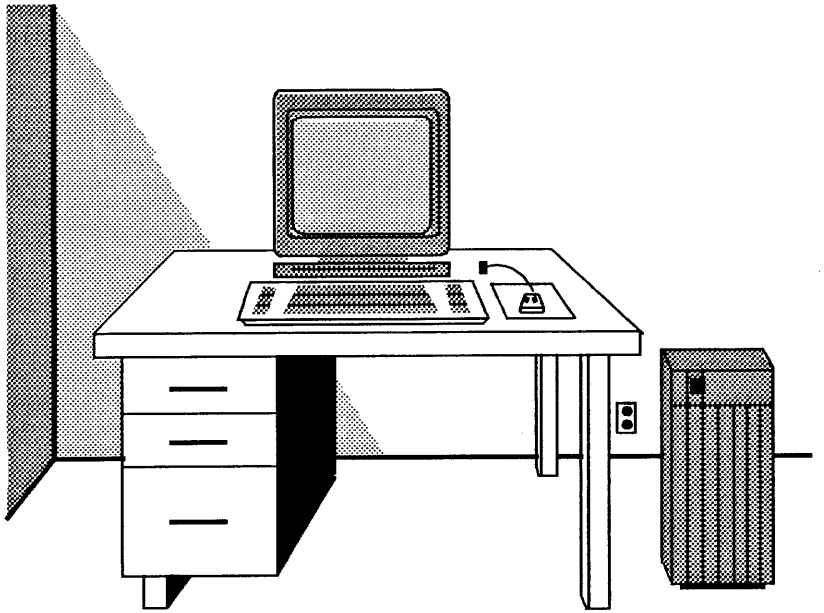


Figure 13. Positioning the System Components

6.7 Hardware Installation

6.7.1 Installing the Removable Rigid Disk

1. Face the left side of the rigid disk. Ensure that the keyway corresponds to the size of the rigid disk drive (Figure 14). If the keyway corresponds to the size of the rigid disk drive, go to step 2. If the keyway does not correspond to the size of the rigid disk drive, perform the steps below:
   a. Loosen the two securing screws near the bottom of the drive.
   b. Slide the keyway to match the correct size of the rigid disk drive.
   c. Tighten the two screws.
2. Pull open the rigid disk drive compartment at the front of the processor unit.

NOTE: The 6085 Commercial Widebody rigid disk drive compartment has a mechanical key that corresponds to the size of the rigid disk drive. If the Removable Rigid Drive does not easily fit into the removable rigid drive compartment, check the mechanical key slot. Refer to procedure 4.33 to position the mechanical key.

3. Grasp the rigid disk handle and slide the drive into the compartment lowering the RRD Orientation Cavity onto the Orientation Guide.
4. Close the rigid disk drive compartment.

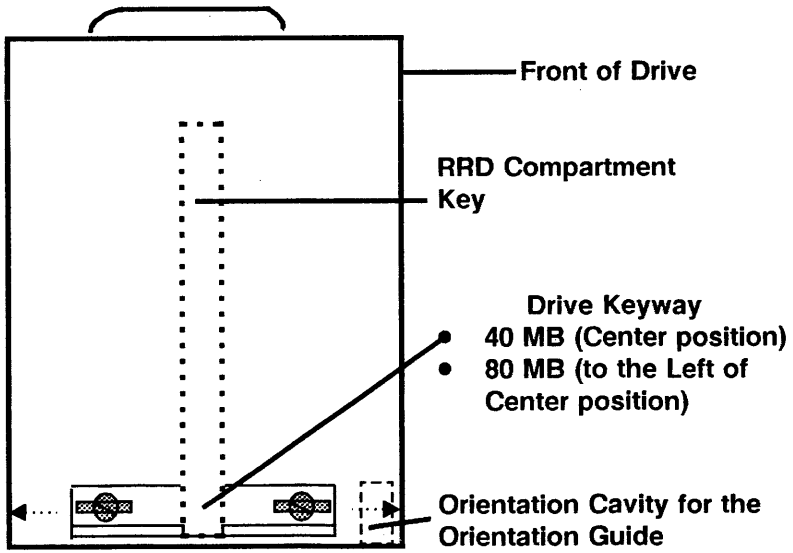


Figure 14. Keyway (Left Side of RRD)

6.7.2 Connecting the Mouse to the Keyboard

1. Attach the mouse cable to the keyboard (Figure 15). Make sure that the plug is pushed fully into the socket and that the back of the connector is flush with the keyboard.

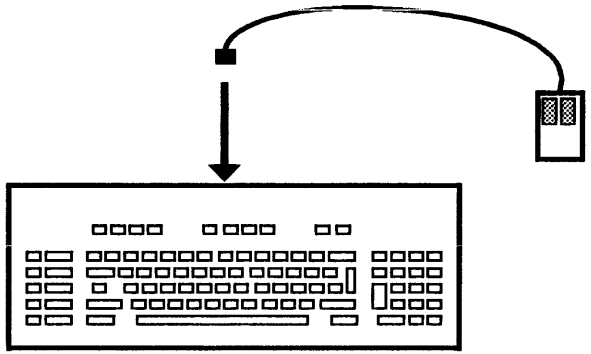


Figure 15. Connecting the Mouse Cable to the Keyboard

2. Turn the keyboard over.

CAUTION

Using sharp instruments to force the cable into the channel can damage the cable. The clips on the keyboard do not flex.

3. Press the mouse cable into the channel on the underside of the keyboard (Figure 16).

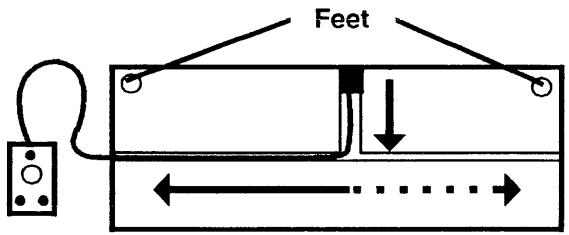


Figure 16. Bottom View of Keyboard

NOTE: In Figure 16 the mouse cable has been installed for use on the right hand side of the keyboard.

4. Extend the keyboard feet by turning them clockwise. (Figure 16.)
5. Turn the keyboard face up.

6.7.3 Connecting the Keyboard to the Display

1. Attach the keyboard cable to the display at the right side of the pedestal (Figure 17).

NOTE: Make sure that the notch side of the connector plug is up before attempting to plug in the keyboard.

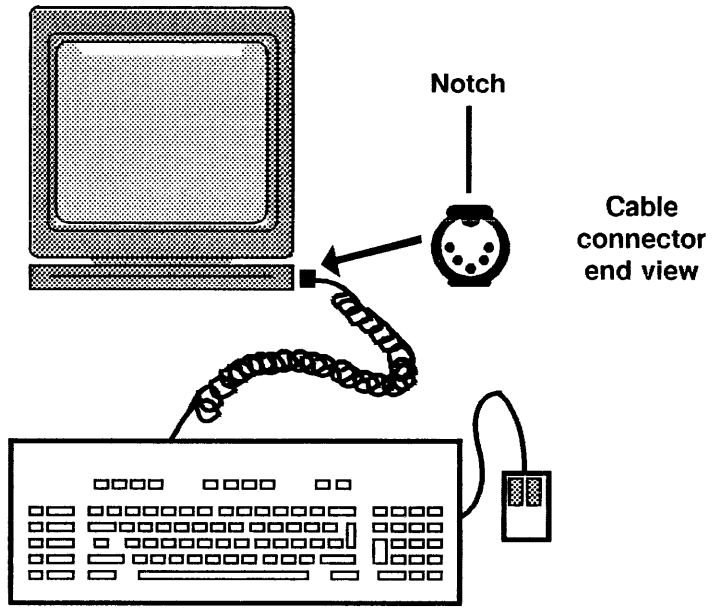


Figure 17. Keyboard and Display

6.7.4 Installing the Optional PWBs

CAUTION

To maintain FCC certification, particular attention needs to be paid to the condition of the finger stock used on the Class B processors. The finger stock is necessary, as it is the means to contain the high frequency emissions of the processor. This is very important for the Class B processors. A loss of any fingers can result in emissions and non-compliance.

1. Follow the procedures in the kit instructions that accompany the optional PWBs.

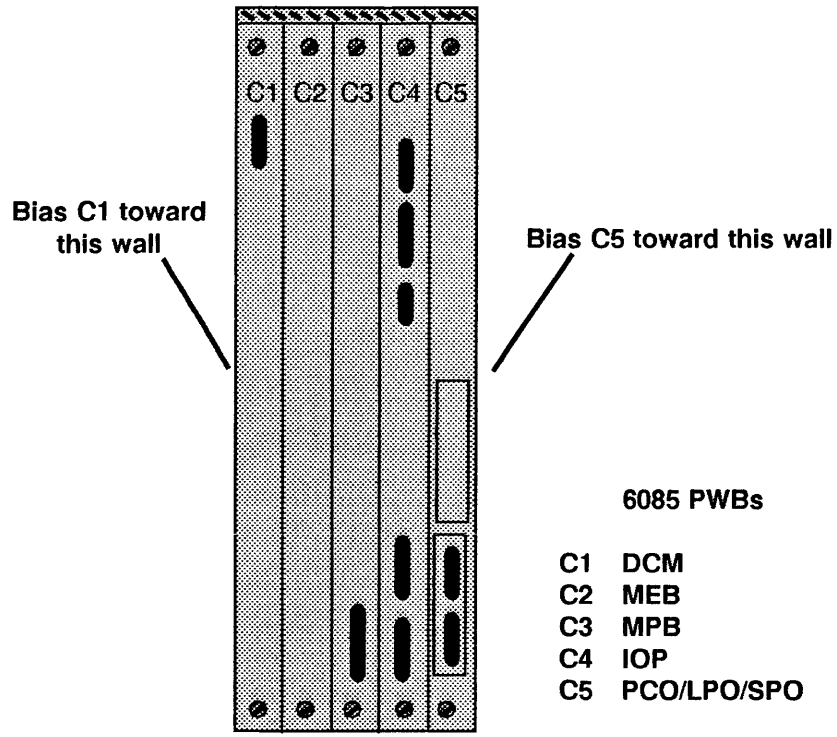


Figure 18. PWB Locations on the Processor

NOTE: Install the MEB PWB in Slot C2 and the PCO/LPO/SPO PWB in Slot C5.

NOTE: If installing the PWBs is difficult, lower the rear door and loosen the thumbscrews of the C1 and C5 PWBs. Bias the C1 PWB toward its adjacent wall and tighten the thumbscrews. Bias the C5 PWB toward its adjacent wall and tighten the thumbscrews so most of the inward pressure generated from these PWBs is alleviated. The C2, C3, and C4 PWBs can alternately be removed and replaced.

6.7.5 Installing Optional Drives

Use 6.7.5.1 to install a floppy disk drive. Use 6.7.5.2 to install a cartridge tape drive and a floppy disk drive.

6.7.5.1 Installing an Optional Floppy Disk Drive

If you plan to set the floppy disk drive assembly on top of the processor unit, perform steps 1 and 2. Otherwise, go to step 3.

1. Carefully turn the drive over and insert the tops of the "M" shaped clips into the bottom of the unit as shown in Figure 19.

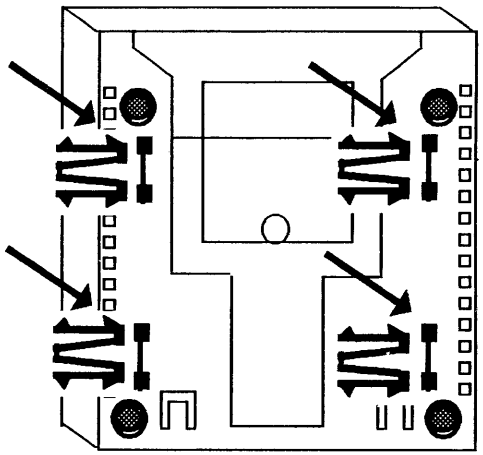


Figure 19. Bottom View of the Drive Assembly

2. Place the drive on top of the processor unit.

   a. Align the four clips on the bottom of the drive to the four corresponding slots on top of the processor unit (Figure 20).
   b. Press down on the drive until the clips snap into place.

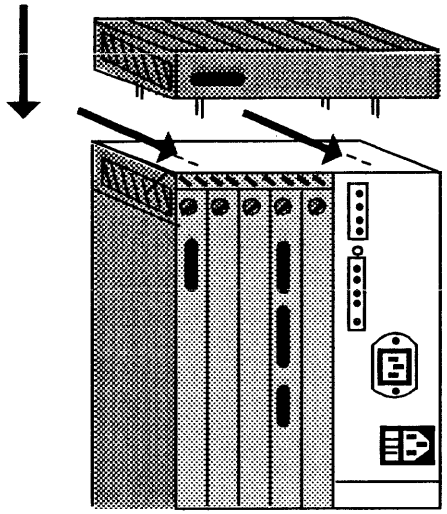


Figure 20. Placing the Optional Drive on the Processor Unit

3. Connect the floppy drive cable to the Floppy Drive, the Processor Unit, and the IOP PWB (slot C4). Tighten the thumbscrews finger tight (Figure 21).

NOTE: You will have to open the rear cover to attach the cable to the processor unit. Refer to step 2 of Procedure 6.7.6, Connecting the Cables to the Processor Unit.

NOTE: This is an example of a thumbscrew.

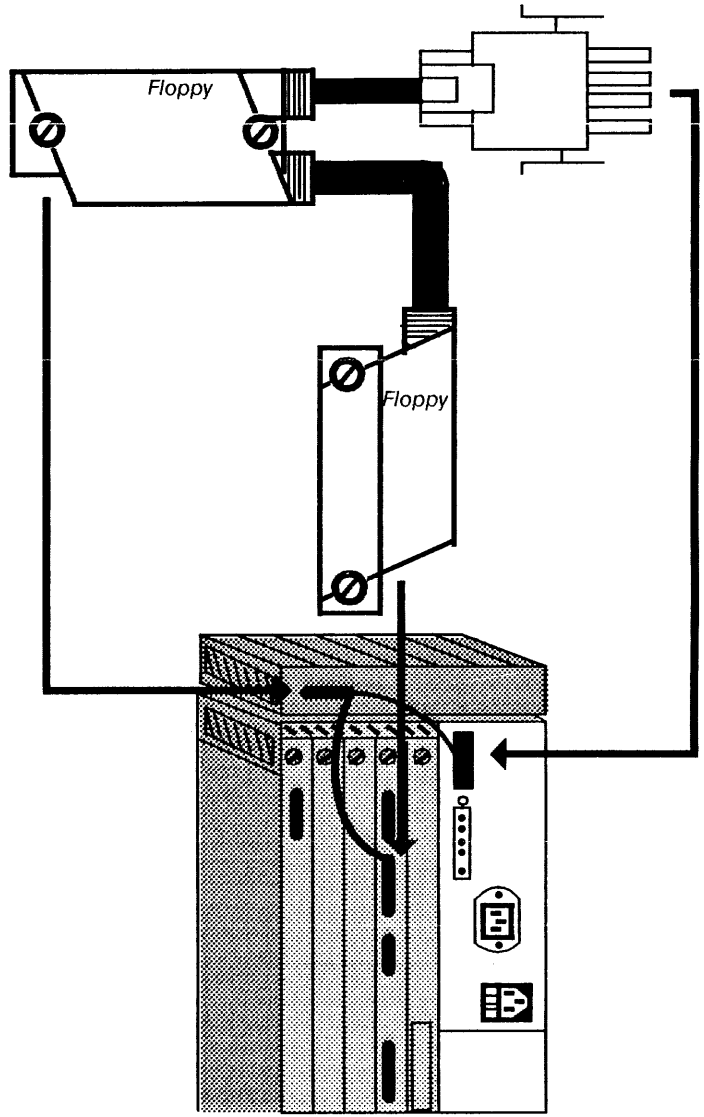
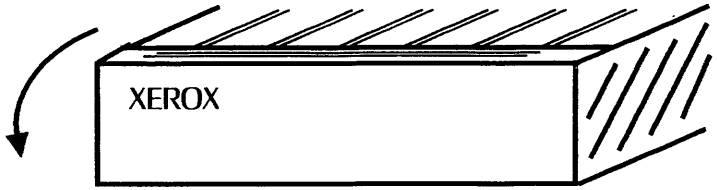
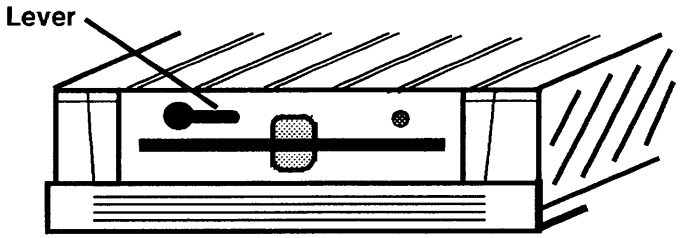


Figure 21. Connecting the Floppy Drive Cable to the Floppy Drive, the Power Supply, and the IOP PWB

4. Flip the front cover of the drive down, then slide it back (Figure 22A). Move the lever to the horizontal position. Remove the cardboard shipping insert from the floppy disk drive.



Floppy Disk Drive
front view



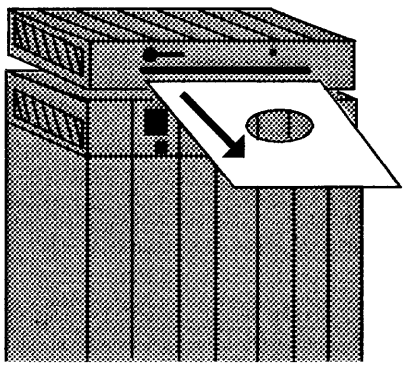
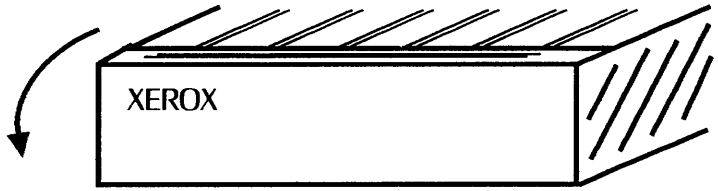


Figure 22A. Removing the Floppy Drive Shipping Disk

5. Retain the shipping disk. Your customer will need it for moving the floppy disk drive assembly.

6.7.5.2 Installing a Cartridge Tape Drive and a Floppy Disk Drive

1. Carefully turn over the cartridge tape drive and insert the tops of the "M" shaped clips into the bottom of the unit as shown in Figure 19.
2. Place the drive on top of the processor unit.
   a. Align the four clips on the bottom of the drive to the four corresponding slots on top of the processor unit (Figure 20).
   b. Press down on the drive until the clips snap into place.
3. Place the floppy disk drive assembly (without the mounting clips) on a table.
4. Flip the front cover of the optional drive down, then slide it back. **Cartridge Tape Drive** (Figure 22B): Push in the plastic shipping insert to release and remove it from the tape drive. **Floppy Disk Drive** (Figure 22A): Move the lever to the horizontal position. Remove the cardboard shipping insert from inside the floppy disk drive.



Cartridge Tape Drive
front view

Figure 22B. Removing the Cartridge Tape Drive Shipping Insert

5. Retain the shipping inserts. Your customer will need them when moving the optional drive assemblies.
6. Replace the Boot PROMs in the IOP PWB (4.13) using the Cartridge Tape Drive Boot PROM Kit.

7. Connect the optional drive cables (Figure 22C).

   a. Connect the cartridge tape drive cable to both the floppy disk drive and the cartridge tape drive.
   b. Connect the floppy disk drive cable to the IOP PWB and the cartridge tape drive cable. Tighten the thumbscrews that secure the cable.

      NOTE: Use either the standard length Class B Floppy Drive Cable (152K17270) or the optional six foot Class B Floppy Drive Cable (9R88786) with the Class B cartridge tape drive assembly.

   c. Connect the floppy disk drive power cord to the power supply.

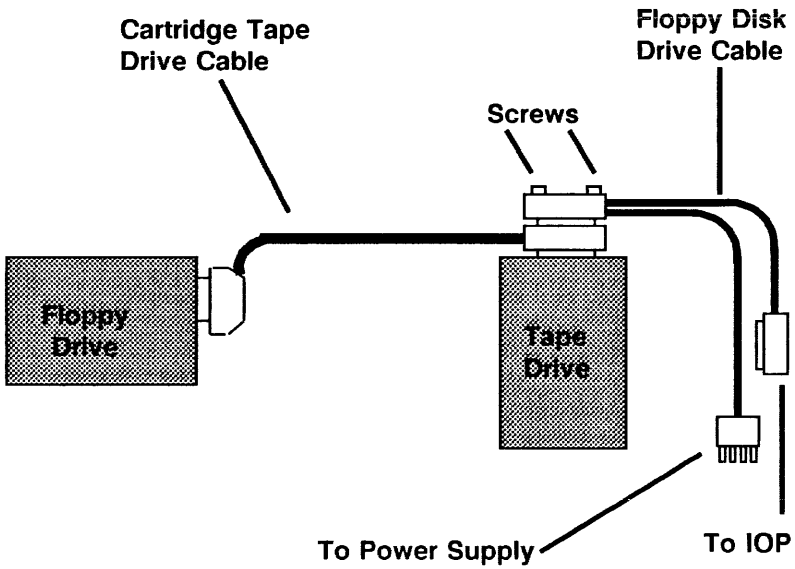


Figure 22C. Connecting the Optional Drive Cables

6.7.6 Connecting the Cables to the Processor

1. Uncoil the three cables (the display cable, the keyboard cable, and the display power cord) from the rear of the display (Figure 23).

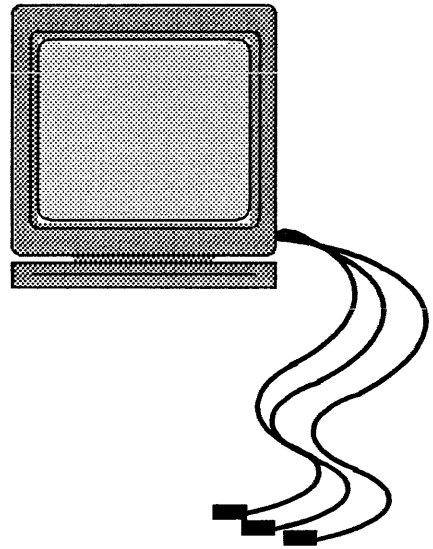


Figure 23. Uncoiling the Three Cables Attached to the Display

2. Open the processor unit rear cover by squeezing the latches and swinging it down.

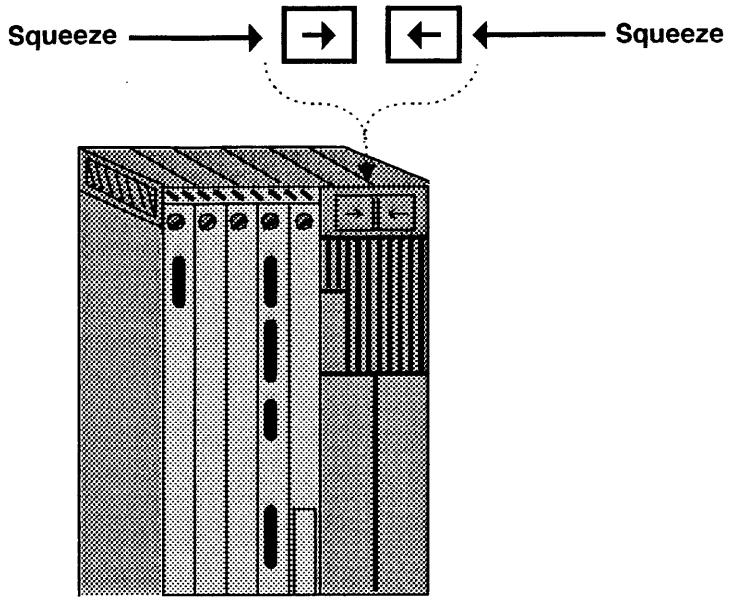


Figure 24. Opening the Processor Unit Rear Cover

3. Connect the cables to the processor unit C1 and C4 PWBs and tighten the thumbscrews finger tight (Figure 25).

NOTE: The cable connectors and the sockets on the C1 and C4 PWBs are labeled. Match each cable connector with the appropriate PWB socket.

Display, RS232C Port and Ethernet Connectors

a. Tighten the display cable and the RS232C Port cables.
b. Connect the Ethernet drop cable, and slide the metal piece of the connector to lock the drop cable in place.

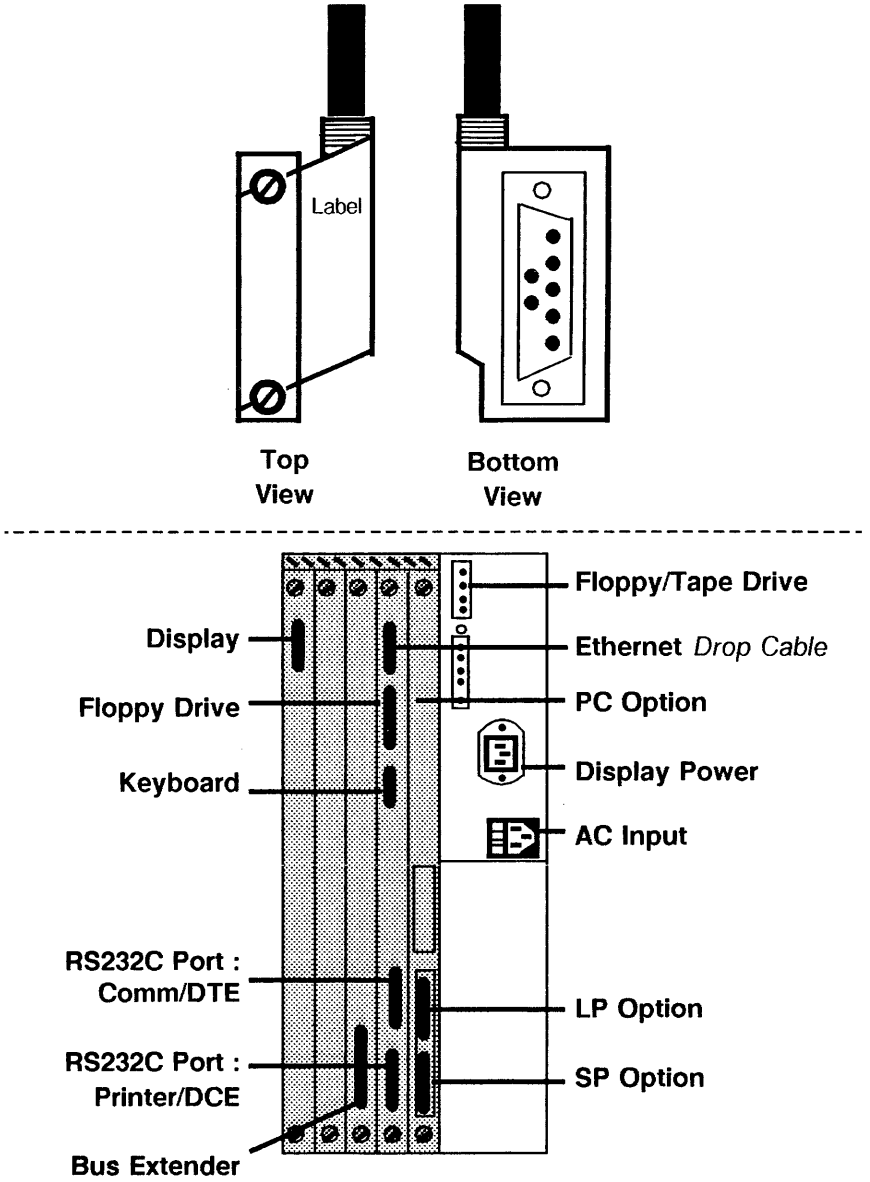


Figure 25. Connector Locations on Processor Unit PWBs

NOTE: The illustrations in Figures 26 and 27 do not accurately depict the location of the rear cover.

4. Route plug end of the display power cord through the cutout in the rear cover and connect it to the processor unit (Figure 26).

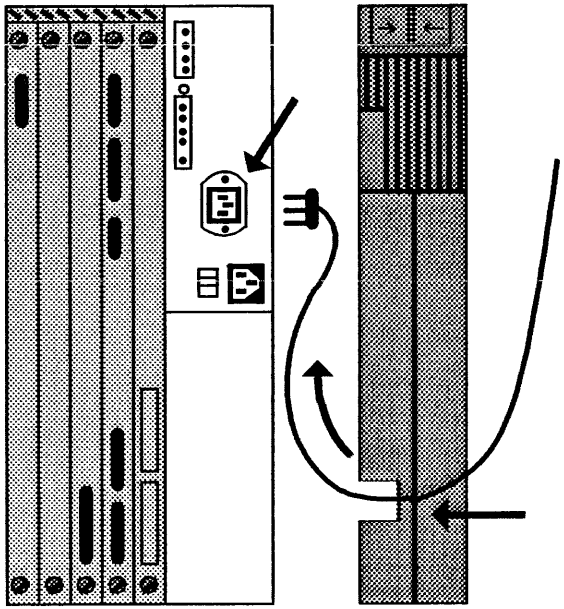


Figure 26. Connecting the Display Power Cord to the Processor Unit

5. Connect the power cord (packaged with the processor unit) to the processor unit and route it through the cutout in the rear cover (Figure 27).

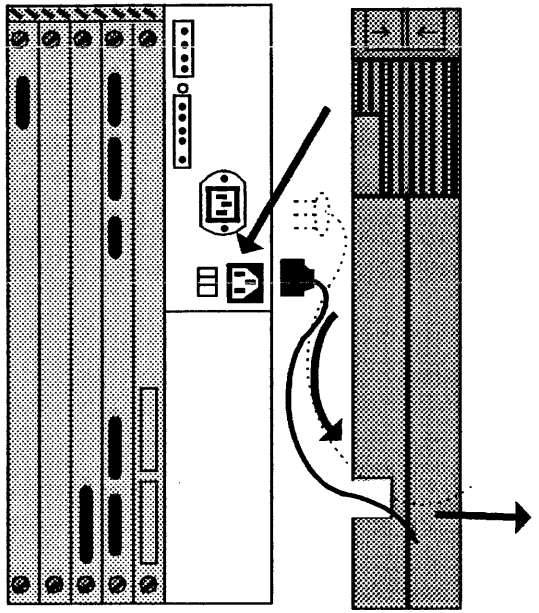


Figure 27. Connecting the Power Cord to the Processor Unit

6. Locate the voltage switch to the left of the power cord plug. Ensure that the voltage switch is set to the appropriate voltage (US 115V).

7. Close the rear cover of the processor (Figure 28).

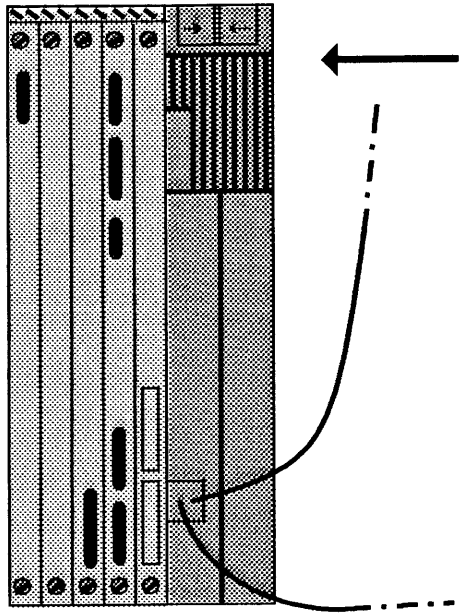


Figure 28. Closing the Processor Unit Rear Cover

6.8 Securing the Cables

1. Unscrew the cable retaining clamp thumbscrew and swing the clamp away from the processor (Figure 29).

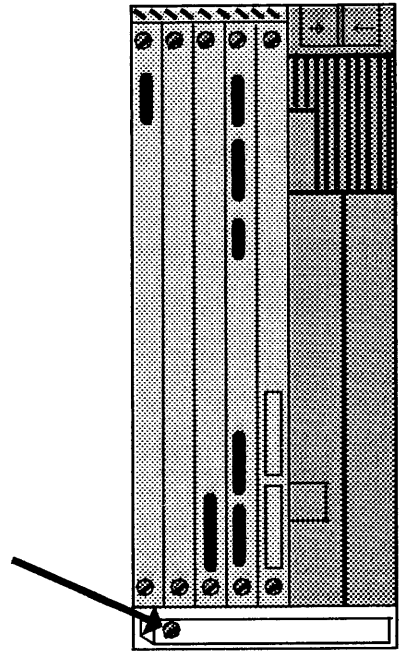


Figure 29. The Processor Unit Cable Retaining Clamp

2. Place all the cables beneath the cable retaining clamp (Figure 30).

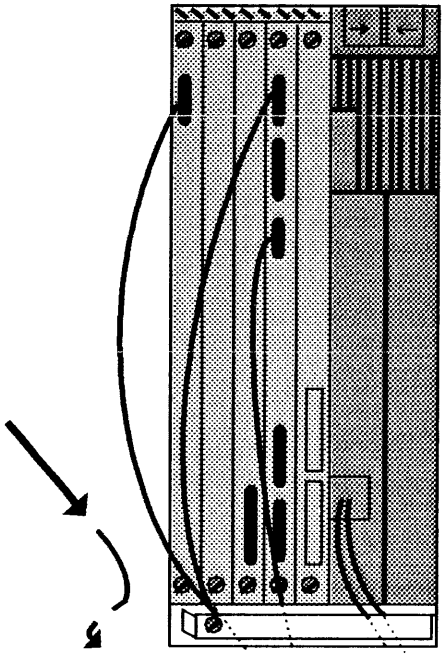


Figure 30. Placing the Cables Beneath the Cable Retaining Clamp

3. Screw the cable retaining clamp back onto the processor unit (Figure 31).

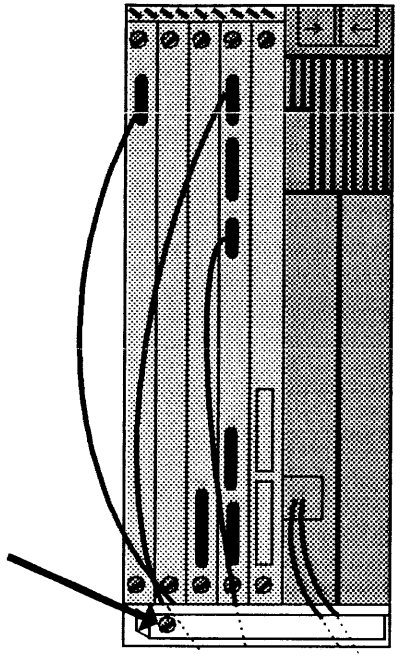


Figure 31. Securing the Cable Retaining Clamp

6.9 Powering Up the System

1. Insert the end of the power cord into the wall outlet (Figure 32).

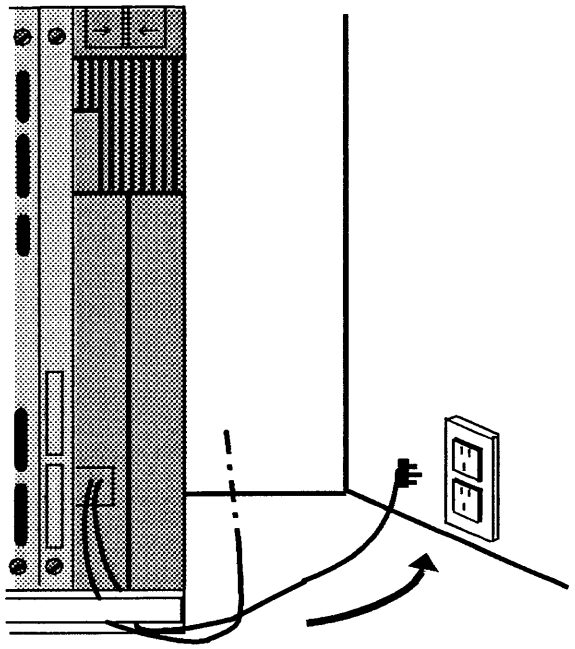


Figure 32. Inserting the Power Cord Into the Wall Outlet

2. Switch ON the processor power. The screen should illuminate (Figure 33).

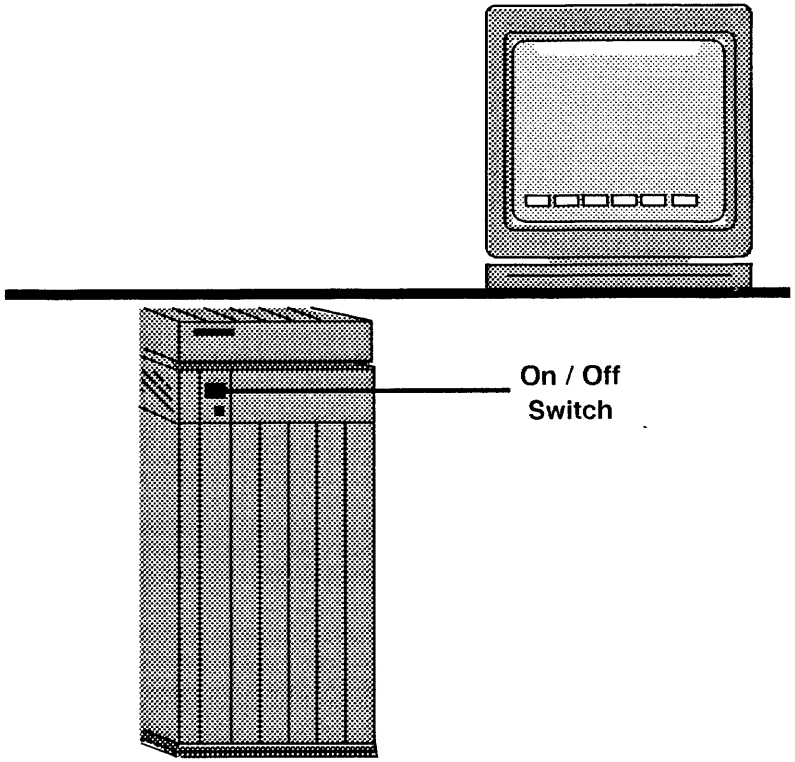


Figure 33. Switching On the Processor Unit Power

3. Swivel the display and tilt the screen for easy viewing. To adjust the screen intensity, turn the brightness control knob, located behind the screen on the right side (Figure 34).

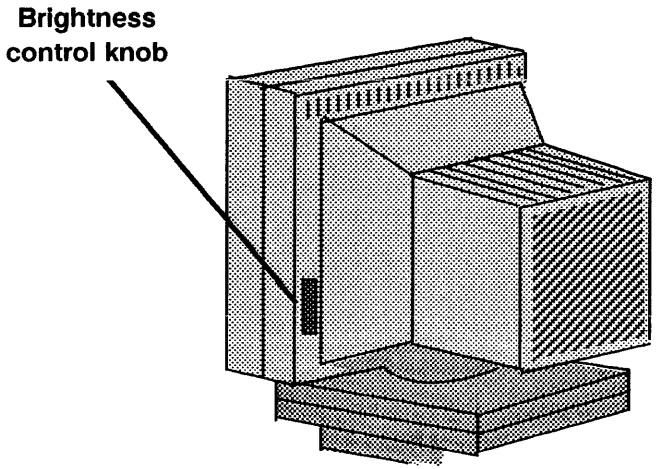


Figure 34. Adjusting the Brightness Control Knob

6.10 System Configuration Utility

After hardware is installed, a description of the particular 6085 system configuration must be recorded on its processor unit (for use by the software). You must set the System Configuration whenever you install a new system, upgrade a component, install a rigid disk, install new options, or install additional memory.

To access this utility, perform steps 1-5.

1. Switch on the processor.
2. Load the 6085 System Configuration Utility. If the system has a Floppy Disk Drive, insert the Off-Line Diagnostics System Bootfile Disk into the floppy disk drive and press Function Key **<F2>**, then follow the displayed instructions for inserting the next disk. For systems without a Floppy Drive, press the Ethernet Boot Function Key **<F3>** and select Off-Line Diagnostics when the Network Executive menu appears.

NOTE: If the processor will not boot or if the boot device cannot be accessed, press the B Reset button while pressing the ***<F9>*** *function key. Some machines may run slowly until the configuration has been properly stored and the processor switched OFF and then back ON.*

3. Type the number corresponding to "Normal User," and press **<Return>**.
4. Type the number corresponding to "System Configuration Utility," and press **<Return>**.
5. Type the number corresponding to "Show Configuration," and press **<Return>**.

Initial Configuration Data: All 6085s are shipped with preset system configuration data in the processor unit. This initial (or preset) configuration assumes the following options:

```
    1 - Return To The Previous Menu
Enter selection choice: 1
= = = = = = = = = = = = = = = = = = = = = = = = = = = =

= = = = = = = = = = = = = = = = = = = = = = = = = = = =
                CURRENT CONFIGURATION
    Keyboard:                U.S.
    Rigid Disk Drive:        10 MB-Model 1 (See NOTE below)
    Memory:                  1.1 MB
    Floppy Disk Drive:       360 KB
    Network Connection:      Yes
    PC Option:               No
    Universal Option:        Not Present
    Automatic Diagnostics:   No
    Virtual Memory Size:     Twenty-three bits
```

Initial Configuration Data

NOTE: 6085 PCS - The configuration is preset to reflect the rigid disk drive shipped as part of the system. Do not change or set this option unless you upgrade or change the rigid disk. 6085 Commercial Widebody - The configuration must be set to reflect the removable rigid disk drive that will be used with the system.

NOTE: If the displayed configuration matches the actual configuration of the system, go on to Procedure 6.11, Running Diagnostics. If the displayed configuration does not match the actual configuration of the system, perform steps 6-19.

6. Type the number corresponding to "Return to the Previous Menu," and press **<Return>**.
7. Type the number corresponding to "Set Configuration," and press **<Return>**.
8. Type the number corresponding to the type of keyboard, and press **<Return>**.
9. Type the number corresponding to the type of rigid disk and press **<Return>**.

NOTE: The size/model label is normally printed on the rigid disk cover assembly. If the drive is an earlier model that is not properly marked, remove it (4.10) to view the manufacturer's name plate. Mark a blank label and place it on the rigid disk cover assembly for future reference. The following cross-reference should be used:

Drive	Size	Model
Seagate ST212	10Mb Rigid Disk	Model 1
Seagate ST213	10Mb Rigid Disk	Model 2
Tandon TM703	20Mb Rigid Disk	Model 1 or A*
Tandon TM702	20Mb Rigid Disk	Model 2 or B*
Seagate ST4026	20Mb Rigid Disk	Model 2 or B*
Quantum Q530	20Mb Rigid Disk	Model 3 or C*
Seagate ST225	20Mb Rigid Disk	Model 4 or D*
Quantum Q540	40Mb Rigid Disk	Model 1
Micropolis 1303	40Mb Rigid Disk	Model 2
Seagate ST4051	40MB Rigid Disk	Model 3 or C*
Seagate ST251	40MB Rigid Disk	Model 4 or D*
Micropolis 1325	80Mb Rigid Disk	Model 1

* = Expanded Capacity Model (T20MB or T40MB).

10. Type the number corresponding to the installed memory size (e.g., *1.1 MB)* and press **<Return>**.

NOTE: The memory size for a 6085 without an MEB PWB is 1.1MB. If the MEB PWB is present, enter the correct memory size using the following list:

MEB Matrix Letter	Rows of ICs	Total Memory Size
none	one	1.6 MB
A	two	2.1 MB
B	three	2.6 MB
C	four	3.2 MB
D	five	3.7 MB

11. Type the number corresponding to the Floppy Drive (e.g., *360 KB)* you have and press **<Return>**.
12. Type **<Y>** or **<N>** if you have the Cartridge Tape Option or not.
13. Type **<Y>** or **<N>** if you are connected to an Ethernet network or not.
14. Type **<Y>** or **<N>** if you have the PC (Personal Computer) Option or not.
15. Type the number corresponding to the Universal Option you have (e.g., *LP Option, SP Option*) and press **<Return>**.

16. Type the number corresponding to the number of bits needed for virtual memory (e.g., *Twenty-three bits* - see the note below) and press **<Return>**.

NOTE: Twenty-three bits of virtual memory should be selected for processors running VP 1.1 or higher, and for processors with PCO or LPO. Twenty-four bits of virtual memory should be selected for processors with SPO. (22 bits = 8MB of virtual memory, 23 bits = 16MB of virtual memory, 24 bits = 32MB of virtual memory.)

17. Type **<N>** to Automatic Diagnostics.
18. Type **<Y>** to "*Do you want your workstation reconfigured with the options you have selected?*"
19. Type **<Y>** to the confirmation prompt.
20. Type **<Y>** to "*Is this disk formatted?*"
21. Press **<any key>** to return to the System Configuration Utility options.

6.11 Running Diagnostics

1. Run the Long Boot Diagnostics.
   a. Press the B Reset button.
   b. If the system has a Floppy Disk Drive, insert the Boot Diagnostics Disk into the floppy disk drive and press the **<F6>** function key twice rapidly. For systems without a floppy drive, press the **<F7>** function key twice rapidly.

*NOTE: You cannot run Boot Diagnostics from the rigid disk (**<F5>**) until Basic Workstation Software has been loaded.*

NOTE: In June 1987, Manufacturing began installing VP Basic Workstation Software (BWS) on all processors and spares coming off the line. Processors and spares that have the BWS software loaded are labeled "VP X.X installed" outside the box and in the plastic pouch of the Rigid Disk Drive containing the Bad Page Table.

NOTE: Long Boot Diagnostics take approximately 18 minutes to run. If diagnostics run successfully, the softkeys return to the screen.

2. Run Rigid Disk Utilities.
   a. Remove the OEM vendor and/or manufacturing error log from the plastic pocket on the rigid disk drive.
   b. Press the B Reset button.
   c. Load Offline Diagnostics from Floppy or Ethernet. **Floppy:** insert the Offline Diagnostics System Bootfile Disk into the floppy disk drive, press Function Key **<F2>**, then follow the displayed instructions for inserting the next disk. **Ethernet:** press the **<F3>** Function Key.
   d. Type the number corresponding to "Technical Support," and press **<Return>**. Type the password **rexifsn** and press **<Return>**.
   e. Type the number corresponding to "Formatter, Scavenger and Bad Page Utility" and press **<Return>**.
   f. Type **<Y>** to "*Is this disk formatted?*"
   g. If the system requires time to be set, perform RAP 5.
   h. Type the number corresponding to "Bad Page Utilities" and press **<Return>**.
   i. Type the number corresponding to "Display Bad Page Table" and press **<Return>**.
   j. Compare the hard copy error log with the bad page table. If they are the same, proceed to step 3. If they are not the same, perform "Manual Entry of Bad Pages."

3. Run Rigid Disk Diagnostics.

   a. Press **<STOP>** until you are prompted with the following message: *"Test data will be deleted upon exit. Is this OK? N."*
   b. Type **<Y>** and press **<STOP>** until the "Class of User" menu appears.
   c. Type the number corresponding to "Technical Support," and press **<Return>**. Type the password **rexifsn** and press **<Return>**.
   d. Type the number corresponding to "Rigid Disk Tests," and press **<Return>**.
   e. Type the number corresponding to "Confidence Test" and press **<Return>**.
   f. Type **<3>** for the Total Pass Count and press **<Return>**. Confidence Test passed.

      Y N

      | If the failure code was 1, 2, or 3, replace the IOP PWB (PL 5.1) and return to step 1. If it was any other number or a fault message, go to RAP 9.

   g. Continue with Procedure 6.12, Installation Checklist.

6.12 Installation Checklist

1. Verify the Installation Checklist:

   ☐ Are all the PWBs properly secured?

   ☐ Are all the cables properly connected?

   ☐ Has the shipping insert been removed from the Optional Disk Drive (Cartridge Tape / Floppy Disk)?

   ☐ Have you adjusted the Display's brightness control knob?

   ☐ Have you run the System Configuration Utility?

   ☐ Have you run Boot Diagnostics?

   ☐ Have you compared the OEM vendor and/or manufacturing error log with the Bad Page Table?

   ☐ Have you run the rigid disk confidence test?

2. The screen illuminates.

   Y N

   | Go to RAP 11.

NOTE: If you are installing a new "Documenter" system (6085 and 4045 Laser CP), the 6085 has been configured and the software has been loaded. Go to 6.17, 4045 Laser CP Installation.

NOTE: If you are installing a 7650 Pro Imager, refer to the 7650 Pro Imager service manual.

3. Boot the system by pressing **<F1>**.

*NOTE: The configuration must be set to reflect the removable rigid disk that will be used with the system. If a black screen is encountered from an **<F1>** boot, the rigid disk is not set in the SCU.*

*NOTE: During startup time, the following cursor codes may appear for an extended period of time: **[7600], [7700],** and **[7800]**. After approximately 15 minutes, the bouncing keyboard appears on the screen, indicating that VP Software has been installed and successfully started.*

If a **[7511]** code, a **[7600]**, **[7700]**, or **[7800]** and **[9999]** series of codes appear, refer to the appropriate procedures for Software Installation (6.14 or 6.15).

6.13 Types of Workstations

There are three types of 6085 workstations: Network, Remote, and Standalone. In order to ensure correct installation procedures are used, workstation types must be determined before software installation is attempted.

The following is a brief description of the three workstation types and the recommended software installation procedures to be followed. Before installing software, determine the type of workstation you have, and the software installation procedures you will use.

6.13.1 Network Workstations

Network workstations are connected directly to the Ethernet network via a drop cable and transceiver.

Both ViewPoint and VP Applications software can be installed either from floppy disks or through network installation.

Consult with the System Administrator to confirm network installation is available, and request the location of the "Installation Drawer."

6.13.2 Remote Workstations

Remote workstations (with RS232C interfaces) can communicate with a network via a modem and communication lines.

ViewPoint software must be installed from floppy disks. VP Applications software, however, may be installed either from floppy disks or through network installation.

Consult with the System Administrator to confirm network installation is available, and request the location of the "Installation Drawer."

6.13.3 Standalone Workstations

Standalone workstations are not connected to the network in any way.

Both ViewPoint and VP Applications software must be installed from floppy disks.

6.14 Software Installation From Floppy

Perform this procedure to install Xerox ViewPoint software from floppy disks. These instructions apply to Network, Remote, and Standalone 6085 workstations.

CAUTION

The following installation procedure destroys all desktops resident on the workstation. Therefore, all data files (and any emulated rigid disk information if the 6085 has a PCO) must be stored on floppy disks or in a file drawer prior to software installation.

NOTE: It is recommended that new desktops be created after software installation. For this reason it is desirable to store data files on floppy disks or in file drawers rather than entire desktops on file servers.

1. Switch on the processor power, if necessary. Insert the floppy disk labeled "6085 Xerox ViewPoint Installer #1" in the floppy disk drive.
2. Press the B Reset button. A visual representation of the top row function keys (also called the boot softkeys) will appear at the bottom of the screen.
3. Press the **<F2>** function key within 30 seconds after the boot softkeys appear on the screen. After a brief time, you will be requested to "Insert floppy disk labeled 6085 ViewPoint Installer #2" in the floppy drive. A list of installation options appear.

NOTE: If you are installing software on a standalone or remote workstation, the message "Time is not set" appears. At this point, date and time must be set in order to proceed. Refer to RAP 5.

4. Insert the floppy disk labeled "6085 Xerox ViewPoint Installer #2" in the floppy drive and press **<Return>** to confirm the floppy disk is inserted.

Comment: If general information about installation is desired, type the number corresponding to the "HOW TO USE THE INSTALLER" option and press **<Return>**.

Partitioning prepares the workstation rigid disk to receive and store data. It divides space on the rigid disk into "logical volumes," each with a specific purpose. This step is used during initial installation, when new ViewPoint software is released, if you have a new workstation disk, or if error recovery procedures specifically state it is required.

5. Type the number corresponding to the "ViewPoint: 6085 Partition Workstation Disk" option and press **<Return>**. Additional options appear.

6. Type the number corresponding to the "Partition 6085 Workstation Disk" option and press **<Return>**. The following message appears:

   "WARNING - PARTITIONING DESTROYS ALL DESKTOPS AND OTHER DATA ON THE WORKSTATION DISK!!!

   Partition only if you are installing ViewPoint on a 6085 for the first time, have a new workstation disk, or if error recovery procedures indicate it is required. Store all desktop data on floppies or at a server before partitioning.

   Confirm? (Y/N):"

7. Type **<Y>** and press **<Return>** if all files have been stored on floppy disks or in file drawers. A second confirmation appears:

   "ALL DESKTOPS ON WORKSTATION WILL BE DESTROYED. Are you sure you wish to continue?
   Confirm? (Y/N):"

8. Type **<Y>** if all files have been stored on floppy disks or in file drawers.

NOTE: Partitioning may take several minutes. After partitioning is complete, the message "Disk partitioned" appears, followed by additional options.

9. Type the number corresponding to the "Return to MAIN MENU" option and press **<Return>**. The installation options appear.

ViewPoint and other required software is copied to the rigid disk of the workstation being installed. This step is used during initial install, and when new ViewPoint software is released.

10. Type the number corresponding to the "ViewPoint: 6085 Install ViewPoint Software on Workstation (From Floppies)" option and press **<Return>**. Additional options appear.

11. Type the number for the option that corresponds to the type of workstation (network, remote, or standalone) for which software is being installed. Refer to Procedure 6.13 for a description of the types of workstations. Only one type of workstation can be selected.

    - If software is being installed for a **Network Workstation** (directly connected to the network), type the number corresponding to the "Install NETWORK 6085 WORKSTATION with ViewPoint, VP NetCom, and VP Document Editor" option.
    - If software is being installed for a **Remote Workstation** (connected to a network via a modem and communication lines), type the number corresponding to the "Install REMOTE COMMUNICATING WORKSTATION with ViewPoint, VP RemoteCom, and VP Document Editor" option.
    - If software is being installed for a **Standalone Workstation** (no connection to a network), type the number corresponding to the "Install STANDALONE WORKSTATION with ViewPoint, VP Standalone, and VP Document Editor" option.

12. Press **<Return>**. A confirmation message appears.

13. Type **<Y>** and press **<Return>** to confirm that you are ready to proceed.

14. Follow the prompts and insert the floppy disks as requested by the system. The system will prompt you for the floppy disks in the appropriate order.

Comment: After installation of ViewPoint, VP NetCom, RemoteCom or Standalone and VP Document Editor is completed, additional options appear.

15. Type the number corresponding to the "Start 6085 System" option and press **<Return>**.

16. Remove the last floppy disk from the floppy disk drive. Type **<Y>** and press **<Return>** to confirm that you are ready to proceed.

17. Press the **<F1>** function key when the boot softkeys appear at the bottom of the screen.

NOTE: If you are installing software on a standalone or remote workstation, the message "Time is not set" appears. At this point, date and time must be set in order to proceed. Refer to RAP 5.

18. Press **<I>** and **<V>** simultaneously for 1 second when the **[7504]** code appears. During startup time, the following cursor codes may appear for an extended period of time: **[7600]**, **[7700]**, and**[7800]**. After approximately 15 minutes the bouncing keyboard appears on the screen, indicating that ViewPoint software has been installed and successfully started.

    - If the bouncing keyboard appears on the screen, continue with step 19.
    - If the bouncing keyboard does not appear, continue with the steps below.

*NOTE: If a **[7500]** code appears, file check is running properly. Upon completion, the system automatically starts up and the bouncing keyboard appears.*

If a **[7511]** code appears, the file check boot file is not loaded. To install and run the File Check software, complete the following steps:

a. Insert the floppy disk labeled "6085 Xerox ViewPoint: Installer #1" and boot the workstation by pressing the **<F2>** function key on the keyboard.
b. Type the number corresponding to the "ViewPoint: 6085 Special Installation and Error Recovery Commands" option and press **<Return>**.
c. Type the number corresponding to the "Install File Check" option and press **<Return>**.
d. Insert the floppy disk labeled "6085 Xerox ViewPoint: File Check" when prompted by the system. A message appears indicating that the installation of file check is complete.
e. Type the number corresponding to the "Run File Check" option and press **<Return>**. A message appears indicating that file check should not be started unless Xerox ViewPoint has been previously installed and startup has been attempted.

NOTE: If Xerox ViewPoint has not been previously installed and startup attempted, install Xerox ViewPoint using the procedure described in this section.

f. Type **<Y>** to confirm. A second confirmation is required.
g. Type **<Y>** for the second confirmation. The **[7500]** code appears indicating that file check is properly running. Upon completion the system automatically starts up and the bouncing keyboard appears.

19. The system is now ready to install VP Series applications and font software. Your customer can refer to the VP Series Reference Library for complete procedures on loading applications and font software.

NOTE: During initial installation, installed software is available for use for 72 hours. Within this time period all software options must be enabled using the software options tool. If software options are not enabled within the allotted time, they will no longer be available for use. The 72 hour grace period is provided to allow customers to enable software options at their convenience. Optional software installed at a later date does not have the 72 hour grace period.

20. Installation procedures are not complete until software is enabled. Your customer can refer to the sub-tab titled "Software Options Tool" in the VP Series Reference Library for complete procedures on enabling software options.

6.14.1 8K Control Store Microcode Software Installation

Perform this procedure to reinstall the ViewPoint Basic Workstation microcode from floppy disk after the Control Store Upgrade Kit is installed. You must use the System Configuration Utility to reconfigure the EEPROM to indicate 8K Control Store memory prior to the reinstallation of the system microcode.

1. Obtain the customer's floppy disks or cartridge tape for ViewPoint 2.0 software.
2. Ensure the processor power is on. Insert the floppy disk labeled "6085 Xerox ViewPoint Installer #1" into the floppy disk drive.
3. Press the B Reset button.
4. Press the **<F2>** function key after the softkeys appear on the screen.
5. When requested, insert the floppy disk labeled "6085 Xerox ViewPoint Installer #2" into the floppy drive and press **<Return>**.
6. Type the number corresponding to "ViewPoint: 6085 Special Installation and Error Recovery Command" from the main installer menu and press **<Return>**.
7. Type the number corresponding to "Install ViewPoint Basic Workstation Microcode Only on 6085 Workstation" and press **<Return>**. Follow the prompts on the workstation screen and load the correct floppy disk or cartridge tape when requested.
8. When the message "Installation of ViewPoint Basic Workstation microcode files is complete" appears, press the B Reset button to reboot the 6085.
9. Press the **<F1>** function key when the softkeys appear on the screen.

6.15 Software Installation From the Network

Perform this procedure to install Xerox ViewPoint software from the network. These instructions apply to Network 6085 workstations only. You cannot load Remote and Standalone 6085 workstations with this procedure.

CAUTION

The following installation procedure destroys all desktops resident on the workstation. Therefore, all data files (and any emulated rigid disk information if the 6085 has a PCO) must be stored on floppy disks or in a file drawer prior to software installation.

NOTE: It is recommended that new desktops be created after software installation. For this reason it is desirable to store data files on floppy disks or in file drawers rather than entire desktops on file servers.

Verify with the System Administrator that the Boot Service is installed and running before attempting to install software over the network.

1. Switch on the processor power, if necessary.
2. Press the B Reset button. A visual representation of the top row function keys (also called boot softkeys) will appear at the bottom of the screen.
3. Press the **<F3>** function key on the keyboard when the boot softkeys appear on the screen.

   A series of numbers, called cursor codes, begin to cycle in the upper left hand corner of the screen. After a brief time, a list of options appear.

NOTE: If the cursor codes are not displayed within 2 minutes, press the B Reset button again. If the cursor codes are still not displayed within 2 minutes contact the System Administrator.

4. Type the number corresponding to the "Installer" option and press **<Return>**. After a brief time, the "Logon please" message appears.
5. Ask the user to type his/her fully qualified name (user name:domain:organization) and press **<Return>**. The message "Password" appears.

NOTE: If a fully qualified name is not entered, the message "Domain and organization required for logon" will be displayed along with the available domain and organization options. Type the number corresponding to the appropriate domain and organization, and press ***<Return>****.*

6. Ask the user to type his/her password and press **<Return>**. After a brief time, the main menu is displayed.

NOTE: If the user does not know their fully qualified name (name:domain:organization), ask them to contact their System Administrator.

NOTE: Characters with accents cannot be used to log on during initial installation. If the user's name or password contains an accented character, ask the System Administrator to create an alias name and/or password without accented characters for use during installation.

Comment: *If general information about installation is desired, type the number corresponding to the "HOW TO USE THE INSTALLER" option and press* ***<Return>****.*

Partitioning prepares the workstation rigid disk to receive and store data. It divides space on the rigid disk into "logical volumes," each with a specific purpose. This step is used during initial installation, when there is a new workstation disk, or if error recovery procedures specifically state it is required.

7. Type the number corresponding to the "ViewPoint: 6085 Partition Workstation Disk" option and press **<Return>**. Additional options appear.
8. Type the number corresponding to the "Partition 6085 Workstation Disk" option and press **<Return>**. The following message appears:

   "WARNING - PARTITIONING DESTROYS ALL DESKTOPS AND OTHER DATA ON THE WORKSTATION DISK!!!

   Partition only if you are installing ViewPoint on a 6085 for the first time, have a new workstation disk, or if error recovery procedures indicate it is required. Store all desktop data on floppies or at a server before partitioning.

   Confirm? (Y/N):"
9. If all files have been stored on floppy disks or in file drawers, type **<Y>** and press **<Return>**. A second confirmation appears:

   "ALL DESKTOPS ON WORKSTATION WILL BE DESTROYED.

   Are you sure you wish to continue?
   Confirm? (Y/N):"
10. If all files have been stored on floppy disks or in file drawers, type **<Y>** and press **<Return>**.

NOTE: Partitioning may take several minutes. After partitioning is complete, the message "Disk partitioned" appears, followed by additional options.

ViewPoint and other required software is copied to the rigid disk of the workstation being installed. This step is used during initial installation, and when new ViewPoint software is released.

11. Type the number corresponding to the "Return to MAIN MENU" and press **<Return>**. Installation options appear.

12. Type the number corresponding to "ViewPoint: 6085 Install ViewPoint Software (From Net)" option and press **<Return>**. Additional options appear.

13. Type the number corresponding to the "Install NETWORK 6085 WORKSTATION with ViewPoint, VP NetCom, and VP Document Editor" option and press **<Return>**. A confirmation message appears.

14. Type **<Y>** and press **<Return>** to confirm that you are ready to proceed.

NOTE: Software installation takes approximately 20-30 minutes. Messages advising you that installation is continuing appear periodically. Additionally, a flashing "FTP" symbol will appear periodically. This indicates installation is proceeding normally.

15. Type the number corresponding to the "Start 6085 System" option and press **<Return>**.

16. Type **<Y>** and press **<Return>** to confirm that you are ready to proceed.

17. Press the **<F1>** function key when the boot softkeys appear on the screen.

18. Press **<I>** and **<V>** simultaneously for 1 second when the **[7504]** code appears. During startup time, the following cursor codes may appear for an extended period of time: **[7600]**, **[7700]**, and **[7800]**. After approximately 15 minutes, the bouncing keyboard will appear on the screen, indicating that ViewPoint software has been installed and successfully started.

    - If the bouncing keyboard appears on the screen, continue with step 19.
    - If the bouncing keyboard does not appear, continue with the steps below.

*NOTE: If a **[7500]** code appears, file check is running properly. Upon completion, the system automatically starts up and the bouncing keyboard appears.*

If a **[7511]** code appears, the file check boot file is not loaded. To install and run the File Check software, complete the following steps:

a. Press the B RESET button on the processor front panel.

b. Press the **<F3>** function key on the keyboard. The cursor codes will begin to cycle on the screen. After a brief time, the message "Logon please" appears.

c. Have the user type his/her fully qualified name (user name:domain:organization) and press **<Return>**. The message "Password" appears.

d. Have the user type his/her password and press **<Return>**.

NOTE: If the user does not know his or her fully qualified name, contact the System Administrator.

e. Type the number corresponding to the "ViewPoint: 6085 Special Installation and Error Recovery Commands" option and press **<Return>**.

f. Type the number corresponding to the "Install File Check" option and press **<Return>**. A message appears indicating that the installation of file check is complete.

g. Type the number corresponding to the "Run File Check" option and press **<Return>**. A message appears indicating that file check should not be started unless Xerox ViewPoint has been previously installed and startup has been attempted.

NOTE: If Xerox ViewPoint has not been previously installed and startup attempted, install Xerox ViewPoint using the procedure described in this section.

h. Type **<Y>** and press **<Return>** to confirm. A second confirmation is required.

i. Type **<Y>** and press **<Return>** for the second confirmation. The **[7500]** code appears indicating that file check is running properly. Upon completion, the system automatically starts up and the bouncing keyboard appears.

19. The system is now ready to install VP Series applications and font software. Your customer can refer to the VP Series Reference Library for complete procedures on loading applications and font software.

NOTE: During initial installation, installed software is available for use for 72 hours. Within this time period all software options must be enabled using the software options tool. If software options are not enabled within the allotted time, they will no longer be available for use. The 72 hour grace period is provided to allow customers to enable software options at their convenience. Optional software installed at a later date does not have the 72 hour grace period.

20. Installation procedures are not complete until software is enabled. Your customer can refer to the sub-tab titled "Software Options Tool" in the VP Series Reference Library for complete procedures on enabling software options.

6.16 Setting the Date and Time

When the floppy disk or system is booted, the message "Time Required" appears. This is followed by a prompt to set the Local Daylight Savings time requirement. At this point, date and time must be set in order to proceed with software installation. For further information on setting the date and time, refer to RAP 5.

6.16.1 Set Time Utility

The Set Time Utility is in the Scavenger Volume, and is deleted when File Check Software is loaded. The following describes how to reinstall the Set Time Utility on a standalone or remote workstation after running File Check.

1. Press the B Reset button. After the Boot Softkeys display, if the system has a Floppy Disk Drive, insert the floppy disk labeled "Installer #1" into the floppy disk drive, and press **<F2>** for Floppy Boot, then follow the displayed instructions for inserting the floppy labeled "Installer #2." For systems without a floppy drive, press **<F3>**, type your fully qualified name and press **<Return>** when the logon request appears.
2. When the Main Menu appears, type the number corresponding to the option labeled "ViewPoint: 6085 Special Installation and Error Recovery Commands" and press **<Return>**.
3. Type the number corresponding to the option labeled "Install Set Time Utility on Remote/ Standalone 6085 workstation" and press **<Return>**.
4. Insert the floppy disk labeled Set Time Utility and follow the displayed instructions for resetting the time.

6.17 4045 Laser CP Installation

1. Verify that all Safety Requirements (6.3) are met.
2. Locate the Installation Kit and verify the contents. If components are missing, have your customer call their Marketing Representative.

Part Number	Description	Quantity
6R139	Dry Imager	1
	Output Tray	1
73S1570	Power Cord (US/XCI Only)	1
152K9700	Printer Interface Cable	1
600P87278	4045 User Manual	1
600K87279	4045 Reference Manual	1

3. Check the 4045 for obvious physical damage.
4. Check that the 4045 is on a level surface.
5. Cut the tie wrap that secures the paper path access handle (located at the lower right front edge of the 4045).
6. Refer to the steps in the "Installing the 4045" section of the 4045 User Manual (600P87278) and perform the following actions:
   a. Install the output tray.

NOTE: Some 4045s are shipped with a piece of foam covering the fuser and the paper path. When you open the machine to install the output tray, check for and remove any loose shipping foam that may be present.

   b. Load the paper.
   c. Add the Dry imager (toner).

7. Connect the 4045 power cord to the wall outlet.

NOTE: Do not connect the interface cable between the 4045 Laser CP and the 6085 at this time.

8. Verify that the 4045 is operating properly and that it is Off-line.

NOTE: The 4045 Laser CP is Off-line when the red light located next to the Off-line button is ON.

   a. Switch on the 4045 power.
   b. The 4045 should go through self diagnostics (indicated by flashing lights on the display panel).
   c. A configuration sheet should be printed and the 4045 should go to a ready status.
   d. If the 4045 does not go to a ready status, check for any obvious problems. If you are unable to resolve the problem call for printer service or, if you are qualified, perform the appropriate service.
   e. If the 4045 has the copier option, follow the steps in the "Options and accessories" section of the 4045 User Manual (600P87278) and make a copy of an original. If the 4045 does not produce a copy, call for printer service or, if you are qualified, perform the appropriate service.

9. Switch off the 4045 power.

10. Verify that the LPO PWB is installed in the C5 slot of the 6085 (4.25) or the SPO PWB is installed in the C5 slot of the 6085 (4.28). Verify that the Laser Printer Option or Scanner/Printer Option is present in the System Configuration Utility (6.10).

NOTE: Perform the following changes to system configuration if the C5 PWB is a Scanner/Printer Option.

   a. Boot the Workstation Off-line Diagnostics.
   b. Logon at the Technical Support Level with the password **rexifsn**.
   c. Select "System Configuration Utility."
   d. Type the number corresponding to "Show modified EEPROM Contents (in HEX format) to be written," and press **<Return>**.
   e. The contents of WORD19 equal "1101."

      Y N

      | Go to step g.

   f. Type **<2>** and press **<Return>** to "Return To The Previous Menu." Go to step 11.
   g. Type the number corresponding to "Change Contents of EEPROM," and press **<Return>**.
   h. Type **<19>** and press **<Return>** to "Enter word number (1-64) in DECIMAL."
   i. Type **<1101>** and press **<Return>** to "Enter data to put in the EEPROM (in HEX)."
   j. Verify in the directory of EEPROM Contents that WORD19 has been changed to 1101.
   k. Type **<2>** and press **<Return>** to "Return to previous menu."
   l. Type **<17>** and press **<Return>** to "Write EEPROM."
   m. Type **<Y>** and press **<Return>** to indicate that the disk is formatted.
   n. Type **<1>** to "Confirm The Write EEPROM Selection."
   o. Type **<Y>** to answer "Booting will use new EEPROM values. Do you wish to continue?"
   p. Reboot the 6085 so that the changes take effect.

11. Switch off the 6085 system power.

12. Route the printer interface cable between the 6085 and the 4045. Place the cable along the walls, behind desk legs, etc., and away from damp surfaces or heat producing devices.

13. Attach the printer interface cable connector to the printer and latch its springs. (Figure 35).

14. Attach the other end of the printer interface cable to the C5 printer port on the processor and tighten the two screws to secure it. Place the cable, along with the other processor cables, beneath the cable retaining clamp and tighten the screw that secures the clamp. (Figure 35).

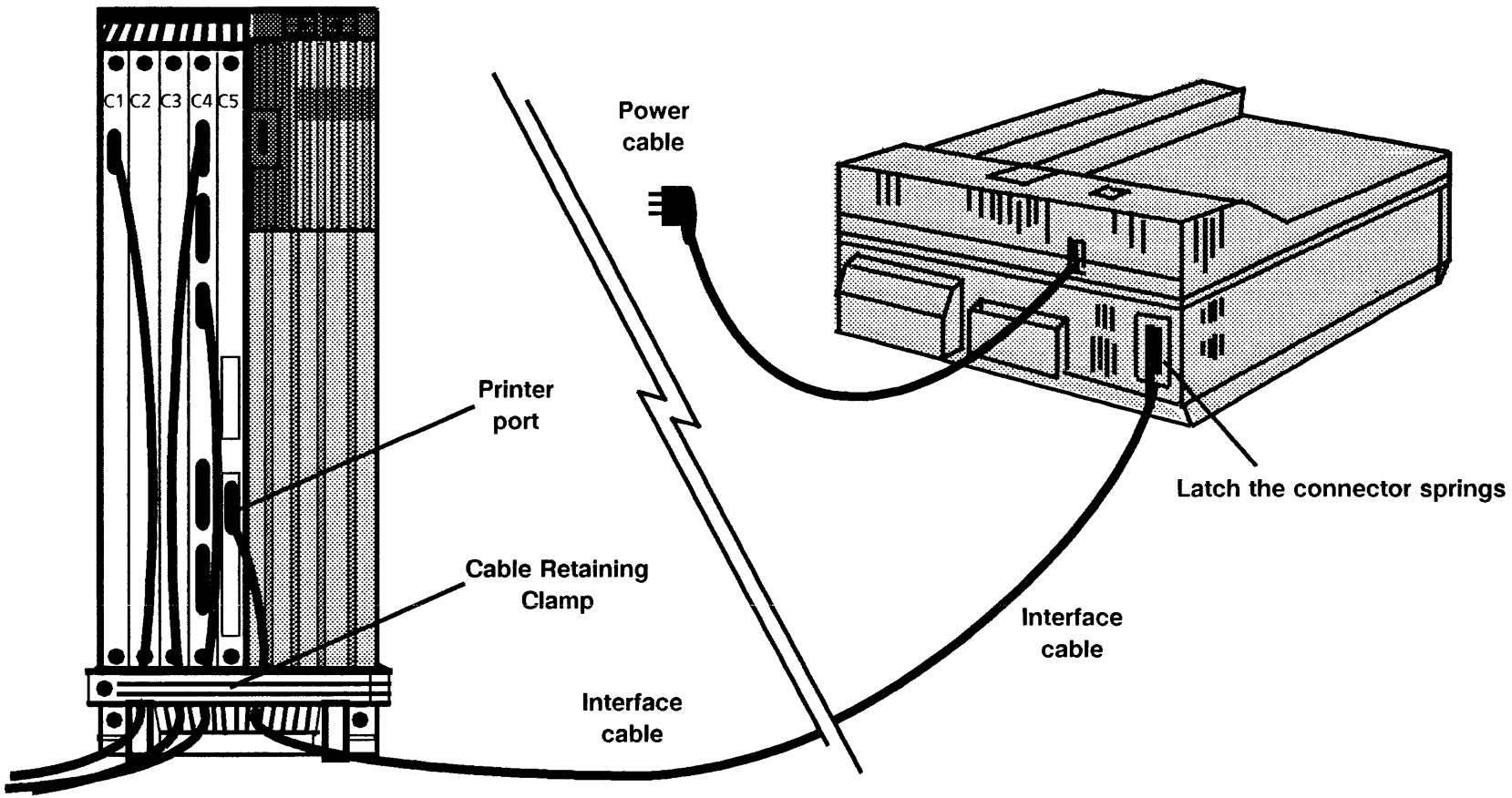
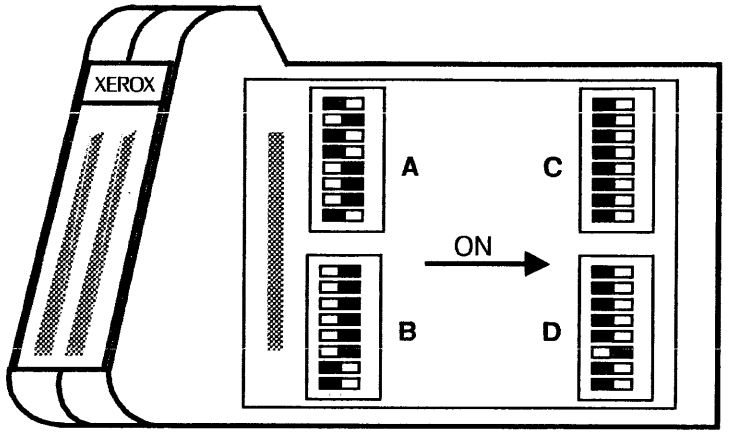


Figure 35. 4045 Laser CP Connection to the 6085 PCS

15. Check that the 4045 configuration switches are set to the standard configuration. (Figure 36).



1 = ▭■ = ON
0 = ■▭ = OFF

NOTE: These are the switch configuration settings for a Documenter with ViewPoint. If you are running other applications, the switch settings may be different.

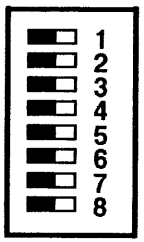


Figure 36. 4045 Standard Switch Configuration

NOTE: The configuration switches are on the Configuration Cartridge, which is located behind the hinged cover at the left of the 4045 Laser CP front panel. The Configuration Cartridge is always inserted into the far left slot.

NOTE: The critical switches for the correct operation of the 4045 Laser CP are the "Parallel" and the "Centronics" switches (A1 and D1) and the "US English" switches (B1, B2, B3, and B4). The A1 and D1 switches must both be switched to the OFF position, while B1 through B4 must be set to the ON position.

16. Switch on the 4045 power.

17. Switch on the 6085 system power.

18. This system has the LPO Option.

    Y N

    | Go to step 20.

19. Run the Boot Printer Byte and Word Test to verify communications between the 6085 and the 4045.

    a. Press the B Reset button and when the Softkeys appear, press **<F5>**.
    b. When the cursor box is at the top middle of the display, press **<STOP>**.
    c. With the cursor code at **[XX99]**, press **<F>** and then **<J>** to boot the Documenter test file.

*NOTE: It may take up to 1 minute for the Cursor Code to go to **[1D99]**.*

    d. With the Cursor Code at **[1D99]**, press **<S>** and then **<4>** to Specify the Printer Byte and Word Test option 4. Press **<Return>** to begin the test.
    e. A test pattern should be printed that resembles Figure 37. If the test pattern is not printed, go to Initial Actions.
    f. Go to step 21.

```
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijk
lmnopqrstuvwxyz6789ABCDEFGHIJKLMNOPQRSTU
This is the end of the line as you can see. 1111111111
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijk
lmnopqrstuvwxyz6789ABCDEFGHIJKLMNOPQRSTU
This is the end of the line as you can see. 2222222222
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijk
lmnopqrstuvwxyz6789ABCDEFGHIJKLMNOPQRSTU
This is the end of the line as you can see. 3333333333
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijk
lmnopqrstuvwxyz6789ABCDEFGHIJKLMNOPQRSTU
This is the end of the line as you can see. 4444444444
```

Figure 37. Boot Printer Byte and Word Test

20. Run the Print-Out on Printer Port Test to verify communications between the 6085 and the 4045.

    a. Press the B Reset button and when the Softkeys appear, press **<F5>**.
    b. When the cursor box is at the top middle of the display, press **<STOP>**.
    c. With the cursor code at **[XX99]**, press **<F>** and then **<O>** to boot the Documenter test file.

*NOTE: It may take up to 1 minute for the Cursor Code to go to **[1E99]**.*

    d. With the Cursor Code at **[1E99]**, press **<S>** and then **<2>** to Specify the Print-Out on Printer Port Test option 2. Press **<Return>** to begin the test.

    e. A test pattern should be printed that resembles Figure 37A. If the test pattern is not printed, go to Initial Actions.

ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijklmnopqrstuvwxyz6789
This is the end of the line as you can see. 1111111111
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijklmnopqrstuvwxyz6789
This is the end of the line as you can see. 2222222222
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijklmnopqrstuvwxyz6789
This is the end of the line as you can see. 3333333333
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijklmnopqrstuvwxyz6789
This is the end of the line as you can see. 4444444444
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijklmnopqrstuvwxyz6789
This is the end of the line as you can see. 5555555555
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijklmnopqrstuvwxyz6789
This is the end of the line as you can see. 6666666666
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijklmnopqrstuvwxyz6789
This is the end of the line as you can see. 7777777777
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijklmnopqrstuvwxyz6789
This is the end of the line as you can see. 8888888888
ABCDEFGHIJKLMNOPQRSTUVWXYZ12345abcdefghijklmnopqrstuvwxyz6789
This is the end of the line as you can see. 9999999999

Figure 37A. Print-Out on Printer Port Test

NOTE: If you have just installed the LPO or SPO PWB "Options Kit" and the 4045 Laser CP, and the 4045 Laser CP software has not been loaded, you will not be able to continue past this point. Inform the customer that they can now load the software and use their printer.

21. Ask the customer if they wish to change the 4045 configuration switches from the standard settings at this time.

22. Press the B Reset button.

23. When the Boot Softkeys are displayed, press **<F1>** to boot the software. The bouncing keyboard icon should appear in 12 to 15 minutes. If the bouncing keyboard does not appear, call for assistance.

The Documenter System - 24 Point Modern Font

Workstations delivered with the Documenter System are pre-configured. If a workstation is pre-configured with Required Fonts ONLY, your customer may report unsatisfactory results when attempting to print a document utilizing the 24 point Modern Font.

The Required Fonts contain the Xerox.Graphic.Newvec and Modern 6-18 point fonts. If a user attempts to print a document which contains the **Modern 24** point font, that font will print with jagged edges. The jagged appearance occurs due to magnification of one of the required fonts.

This problem does NOT occur when the entire Modern font family (point sizes 6-36) is loaded onto the workstation.

NOTE: Due to space constraints, 10MB workstations are pre-configured ONLY with the Required Fonts; therefore, the 24 point jagged edge problem will ALWAYS occur on a 10MB workstation configuration.

6.18 P12/P32 Printer Installation

The following are the steps to attach a P12/P32 printer to the 6085.

6.18.1 P12/P32 Printer Installation

1. Place the printer on a flat surface.
2. Check that the paper feed slots are free of obstructions.
3. Remove the adhesive strip securing the printer cover, the transparent protective sheet on the top of the cover and any cable ties that may be holding the AC power cord and carriage in place.
4. Open the top cover and feed the power cord through the rear of the printer. Do not pull it tight.
5. Press the power cord into the cutout provided in the lower rear cover.

6.18.2 Verify Printer Operations

1. Ensure that the printer power is off.
2. Refer to the P12CQI and P32CQI Matrix Printer Operators Guide for the insertion of paper and ribbon cartridge installation.
3. Set the printer attribute switches according to Table 7.
   a. Raise the printer top cover.
   b. Refer to Figure 38 for the switch location.
   c. Set the print attribute switches (located on top of the circuit boards under the top cover).
   d. Close the top cover.
4. Print a Self-Test Pattern.
   a. Press the FORM FEED button and switch on the printer power. This will cause the printer to continually print a character set with carriage returns and line feeds.
   b. Examine the printout for even, clear printing.
   c. If the printer fails to operate properly: 1) Ensure that the paper and ribbon are feeding properly; or, 2) Contact the Printer Service Representative.
   d. Press the ON LINE switch to stop the self-test print.

Table 7. Printer Attribute Switches

Switch #	Function	P32 Setting
S01	Disable Down Loading	On
S02	Character Set Selection	Off
S03	(IBM Character Set)	Off
S04		Off
S05	IBM Graphic Printer	On
S06	IBM Character Set 1	Off
S07	Must always be on	On
S08	Line Feed With Carriage Return	On
S09	Paper 11" Length	Off
S10	8 Lines Per Inch	On
S11 S12	Print Density - 10 Characters Per Inch	Off

NOTE: S05–S12 is numbered S1–S8 on the switch.

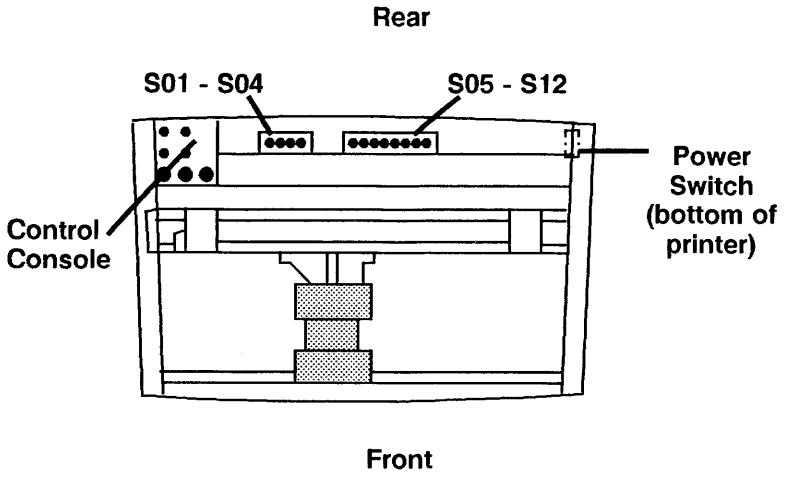


Figure 38. P32 Printer (Top View): Attribute Switch Locations

6.18.3 Quadram Microfazer Buffer Installation

NOTE: The power source for the Printer Buffer is an AC to DC Converter supplied with the buffer or the power is derived from the P12CQI/P32CQI Printer. For all local draft printer installations, set the Power Switch to PRINTER. Do not use the AC to DC Converter.

1. Check the internal jumpers on the Printer Buffer (Figure 39).
   a. Switch off the printer power.
   b. Remove the back cover of the Printer Buffer.
   c. Remove the printed circuit board from the chassis and position it component side up. The end with the ribbon cable should be on the right with "Microfazer" in the lower right corner. (Refer to Figure 39.)
   d. Locate the interface Baud Rate pins on the circuit board and place a jumper across the pair of side by side pins for the **9600** baud rate.
   e. Locate the Handshaking Pins (P1) chip on the circuit board. Place a jumper across the pair of side by side pins for the **RTS** and **TS**.
   f. Reinstall the back panel of the Printer Buffer.

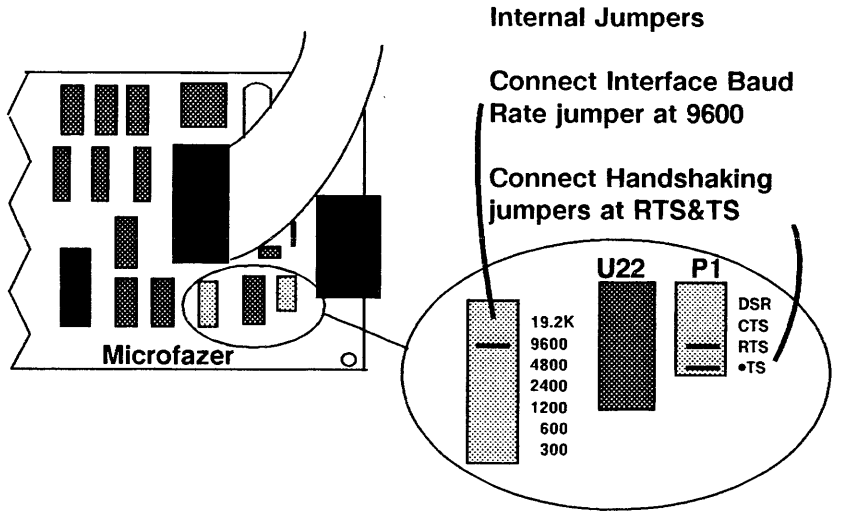


Figure 39. Microfazer Internal Jumpers

2. Connect the ribbon cable from the Printer Buffer to the rear of the P12CQI/P32CQI printer.
3. Switch on the P12CQI/P32CQI Printer power.

4. Initialize the Printer Buffer and clear the memory by pressing the Reset Button on the front of the Printer Buffer. The Ready LED and Copy LED indicators should be on. The Error LED indicator should be off.

5. Perform the Microfazer Printer Buffer Memory Test.

   a. Press and hold Reset.
   b. Press Pause/Copy
   c. Release Reset.
   d. Wait one second and release Pause/Copy.

   - The Status light will be off, indicating the Memory Test is being performed. The test takes 4 to 5 seconds.
   - The test will print the amount of memory in the Printer Buffer. (16K of memory prints out 16K on printer.)
   - If errors are encountered, the printout will contain an alpha character (D, A, or M), followed by one or more digits (0-7) indicating the faulty bit.

6. If there are errors, have the customer order a new Quadram Microfazer Buffer through the supplies system. (The Printer Buffer has a 90-day warranty and is customer installable.)

6.18.4 Verify Port Operation

1. Run the RS232C Loopback Test on the PRINTER DCE Port.

   a. Connect the Universal Loopback Tool using the 8000 Terminal Port board to the PRINTER DCE Port of the IOP PWB.
   b. From the Softkeys, load the Boot Diagnostics Floppy Disk and press **<F6>**. When the cursor box is in the center of the screen, press **<STOP>** to prepare the 6085 for test sequence entry.
   c. With the Cursor Code at [0F99], press **<F>** and then **<R>** to boot the RS232C test file.
   d. With the Cursor Code at [0F99], press **<S>** and then **<5>** for the DCE test. Press **<Return>** to begin test.
   e. If the test fails, replace the IOP PWB.
   f. If the test passes, install the RS232C cable on the PRINTER DCE Port of the IOP and connect the Loopback Tool on the end of the cable to verify the cable. Use the same test sequence as above for the IOP Port Test.
   g. If the test fails with the RS232C cable, replace the cable (152S24802).

6.18.5 6085 / Microfazer Buffer / P12CQI/P32CQI Connection

1. Connect one end of the RS232C cable to the PRINTER DCE Port of the IOP PWBA and the other end to the RS232C DATA INPUT of the Microfazer Printer Buffer.
2. Verify that the POWER SWITCH, on the Microfazer, is set to "PRINTER."
3. Connect the Parallel Flat Ribbon Cable from the Printer Buffer to the connector at the rear of the P12CQI/P32CQI Printer.
4. Refer to Figure 40 for proper connection.

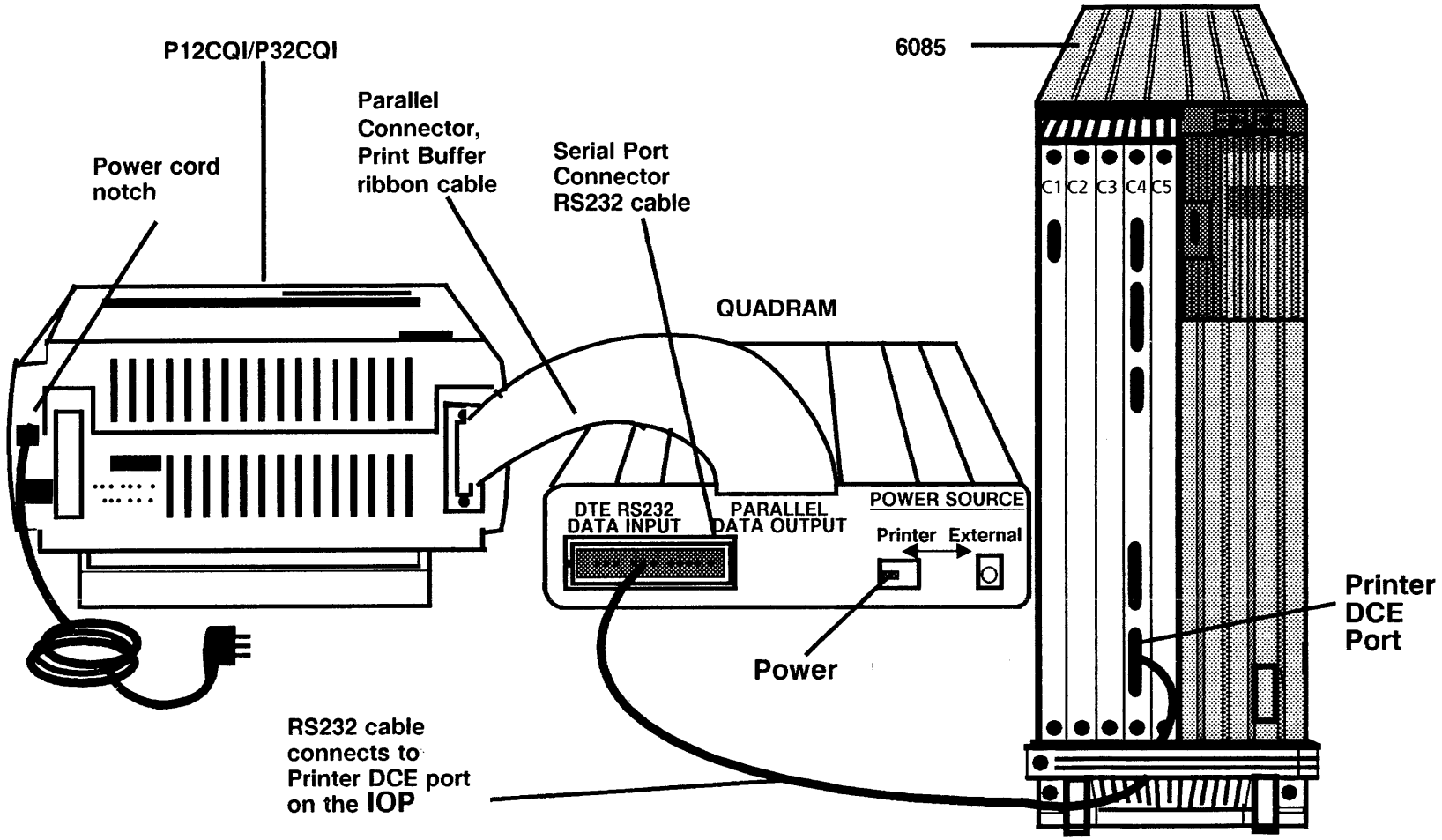


Figure 40. P12/P32 Connections

6.18.6 Final System Checkout

Boot Diagnostics EI Tests are not available to verify the total system configuration. To evaluate the system, have the customer or Xerox Systems Analyst logon and send a document to the local draft printer icon.

Troubleshooting

1. Ask the customer to send a document to the printer. The document printed.

   Y N

   | Go to step 3.

2. Verify the print quality. If needed, contact the P12CQI/P32CQI Service Representative or refer to the P12CQI/P32CQI Printer Service Activities Manual for repair.

3. Perform the Verify Port Operation. The port checks OK.

   Y N

   | Replace components as indicated.

4. Perform the Microfazer Printer Buffer Memory Test. The Printer Buffer checks OK.

   Y N

   | Ask the customer to replace the Printer Buffer by calling Xerox Supplies at (800) 822-2200.

5. Perform the Verify Printer Operations. The printer checks OK.

   Y N

   | Contact the P12CQI/P32CQI Service Rep or refer to the P12CQI/P32CQI Printer Service Activities Manual for repair.

6. Ask the System Administrator to check the software.

7. If the problem remains unresolved, call for assistance.

Principles of Operation

Introduction

The Principles of Operation include descriptions of all the standard and optional components of the 6085 Professional Computer System (PCS).

The 6085 PCS consists of the following assemblies and subassemblies:

- Processor
  - Power Supply
  - Backplane
  - IOP PWB
  - DCM PWB
  - MPB PWB
  - MEB PWB (Optional)
  - PCO PWB (Optional)
  - Option PWBs (LPO or SPO)
  - Rigid Disk Drive (Size Optional)
  - Cooling Fans
- Display
  - 15 inch B/W
  - 19 inch B/W (Optional)
- Keyboard
- Optical Mouse
- Floppy Drive (Optional)
- Ethernet Transceiver and Drop Cable (Optional)

Power Supply

The power cord plugs directly into the power supply. A multinational power supply is used in the 6085 that has the capability to run on 115VAC for the USO/XCI/FX market or 230VAC for the RX market. Voltage is selected with a switch located next to the power cord socket.

Other than the wires from the backplane to the fan assembly (from the backplane to the fan assembly and the interlock solenoid on the Commercial Widebody unit), there are no internal wire harnesses in the 6085. The power supply PWB plugs directly into the backplane, and from there DC voltages are distributed throughout the processor. The Floppy Disk Drive receives its power through a cord connected to the Power Supply, while the Keyboard receives power through the digital interface cable to the IOP PWB. The Display is the only component which receives AC power: the AC power is routed through the on/off switch and the line filter to an outlet on the processor power supply.

The DC voltage outputs from the power supply are: +5VDC, -5.2VDC, -12VDC, +12VDC. The power supply has overcurrent protection, which reduces both voltage and current to a minimal level when a short circuit in the load is detected. When the load returns to normal, the output voltage automatically recovers to its nominal value except in the case of the +5VDC. To reset the +5VDC, switch the AC power off for at least 10 seconds, then switch it on.

The power supply PWB generates a Power Normal signal. When all voltages are within range, the green Power Normal Indicator LED on the front of the processor is illuminated. If any of the voltages falls below 94% of its nominal value, the Power Normal Indicator LED goes off. The power supply also has one replaceable fuse.

Backplane

The backplane provides electrical interconnection for five PWB slots. There are two main buses used in the 6085 (the 80186 bus and the Mesa bus), plus memory address and control lines (Figure 41). The backplane also distributes the necessary clock and control signals to coordinate system operation.

IOP PWB

The Input/Output Processor (IOP) PWB is located in slot C4. The main functions of the IOP are to:

- control all the I/O devices associated with the 6085 workstation
- control the Mesa processor during power-up, initialization and booting
- write and read the Mesa processor control store
- provide the interface necessary for PC emulation and interrupt control
- provide the interface for optional devices that can be attached to the 6085

The IOP PWB contains the following circuitry:

- 80186 VLSI Microprocessor
- Rigid Disk Controller
- Floppy Disk Controller
- Keyboard/Mouse Controller
- Ethernet Controller
- RS232C Controller
- Bus Arbiter

- PC Emulation interface
- RAM (16K bytes)
- EPROM (16K bytes)
- EEPROM (128 bytes)

80186 VLSI Microprocessor

The 80186 is a 16-bit Very Large Scale Integrated (VLSI) microprocessor which provides a bus for data, I/O instructions, conditional branch instructions, and other control instructions. All 6085 I/O and memory devices, with the exception of the display controller, interface to the 80186 bus. This bus also extends, through buffers, to the Options slots, where additional peripheral controllers can be added.

The 80186 contains a Direct Memory Access (DMA) function that controls high speed data transfers between the floppy disk controller and main memory.

Rigid Disk Controller

The high speed Rigid Disk Controller provides the control circuitry for the drive and read/write logic. The controller also contains its own DMA function for access to main memory. It is designed to interface with any one of four $5\frac{1}{4}$ inch Rigid Disk Drive sizes: 10MB, 20MB, 40MB, or 80MB. The controller circuitry provides four important functions:

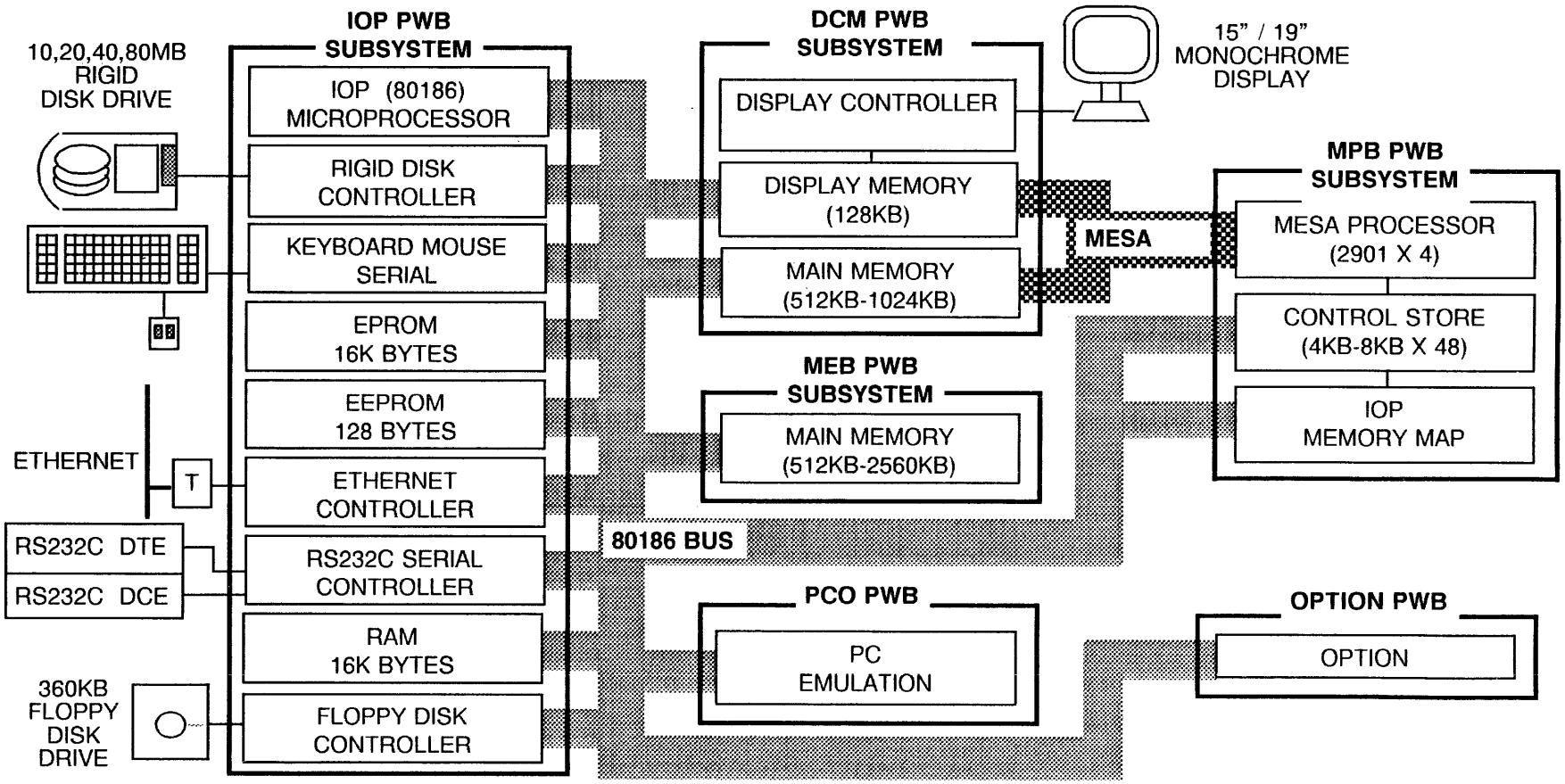


Figure 41. 6085 Bus Block Diagram

- Input Conditioning
- Output Conditioning
- Central Processor Interface
- Serializer/Deserializer

Floppy Disk Controller

The Floppy Disk Controller provides an interface between the I/O processor and the floppy disk drive. It translates IOP commands (such as format, read, and write) into the required control signals and sequences for floppy disk operation.

Keyboard/Mouse Controller

The Keyboard Controller is an asynchronous serial interface with a 9600 baud rate. The information transferred over the keyboard link contains both keyboard and mouse data.

Ethernet Controller

The Ethernet Controller provides an interface between the 6085 and the Ethernet through a drop cable and transceiver. All communication between the controller and the main memory occurs through the DMA function within the Ethernet controller.

The IOP can interrupt the ethernet controller and the ethernet controller can interrupt the IOP. The controller thus requests the I/O bus whenever it needs information from or has information for the IOP.

Ethernet Host Address PROM

The Host Address PROM contains a unique 48-bit identifier which provides network address recognition. The host address is used as the source address on packets which are sent out to the network and compared to the destination address on incoming packets.

RS232C Controller

The IOP PWB has two RS232C serial interface ports. Asynchronous and synchronous transfers are supported. One port is configured as a DCE port, supporting connections to devices such as local printers. The second port is configured as a DTE port, for use with common carrier communications devices such as modems. The ports are capable of operating at baud rates of 110 to 9600.

The receivers and drivers in the interface circuitry provide the necessary signal levels to meet the RS232C standards.

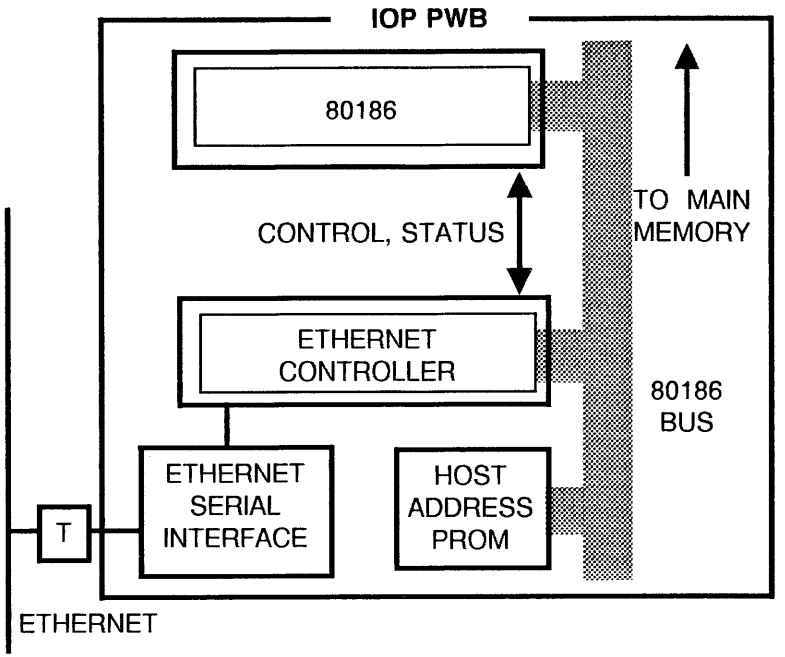


Figure 42. Ethernet Controller Block Diagram

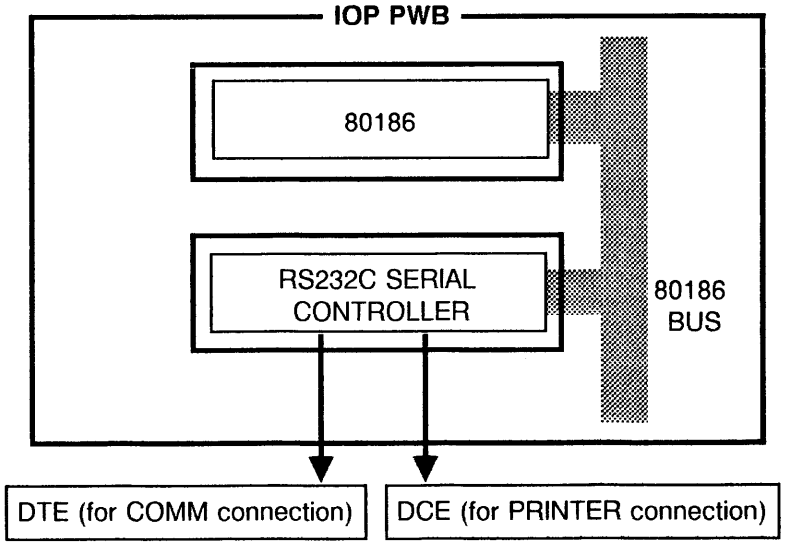


Figure 43. RS232C Block Diagram

Preboot and Boot PROMs

Preboot is the first program to run when the B Reset switch is pressed or the processor power is switched on. During preboot, the three red status indicator LEDs go through a specified on/off sequence. All of the red preboot indicators will be off at the successful completion of preboot. A preboot error is signalled by an audible tone; the status LEDs will indicate the troubleshooting entry point.

During preboot, the 80186 performs a self test for all operations that are crucial for the boot program to execute.

The next sequence in the boot process is the appearance of the boot softkeys on the display. The boot softkeys are displayed for 20 seconds, during which time it is possible to select diagnostic or non-diagnostic boot devices by pressing the appropriate function key. If no selection of an alternate boot device is made within the 20 second time period, the default boot device, as recorded in the system configuration, will be used for the remainder of the boot process. The softkey that represents the default boot device will be highlighted briefly as the 20 second period ends.

When the configurator has been set to run diagnostics and a non-diagnostic boot softkey is selected, the machine will load the short boot diagnostics from the selected boot device. If the configurator has not been set to run diagnostics, the system software will be loaded from the selected boot device. If any of the diagnostic softkeys are selected, a long boot will be executed regardless of the configurator setting.

The boot PROMs contain the instructions which are executed at the completion of preboot. These instructions perform the actual loading of other programs from the boot device. For example, when you select the Floppy softkey or boot from function switch 2, the instructions in the boot PROMs load the first set of tests from the floppy disk into the 16K RAM on the IOP PWB. After the first set of tests is completed, the process is automatically repeated until all the boot diagnostics have been run.

Also contained in the boot PROMs are the initial microcode instructions performed by the central processor. These instructions are loaded into the control store on the DCM PWB.

DCM PWB

The Display Control and Memory (DCM) PWB contains the display controller and the main memory. The main memory consists of display memory and system memory.

The display memory is contained in the first 512 Kbyte block of main memory and is part of the display controller. Presently, display memory uses only the first 128 Kbytes of that block. The display memory provides the "bitmap," which contains the data used to generate the video signal sent to the display. The active bitmap for the 15-inch monitor is 13 quadwords x 633 lines; for the 19-inch monitor, 17 quadwords x 861 lines. The total frame, visible and non-visible, is 736 lines x 1120 bits for the 15-inch monitor and 981 lines x 1120 bits for the 19-inch monitor.

Up to 1.0 Mbyte of system memory, in 512 Kbyte blocks, is also on the DCM PWB, beginning with address 512K through 1536K. Additional system memory is on the Memory Expansion Board (MEB).

When a memory cycle is granted, the memory controller is started. The memory controller multiplexes addresses, controls memory timing, delivers data, and starts the IOP arbiter when memory is again available. The memory controller also generates and checks byte parity.

MPB PWB

The Mesa Processor Board (MPB) PWB contains the high speed central processor and the circuitry required to support it. The central processor is made up of four 2901 LSI chips, each of which is a 4-bit processor; the four chips operate together to form the 16-bit central processor. The central processor receives the system clock generated on the IOP, and also generates an internal clock.

The Mesa processor, which supports the central processor, is a microprogrammed, 16-bit general purpose computer consisting of 160 standard chips. It accesses memory determined by the memory controller arbiter on the DCM PWB and has last priority (after memory refresh, display, and the IOP). Except for the I/O bus lines that load the control store of the Mesa processor, no direct data path exists between the Mesa processor and the I/O subsystem. They communicate data via the memory subsystem, and signal an interrupt via bi-directional lines. When the display is not demanding memory cycles, the Mesa processor can obtain at least every other memory cycle. A memory request is initiated by a Mesa bus transaction.

A memory cycle is 125 ns (nanoseconds). Cycles are enumerated in the order c1, c2, c3, and then c1 again. This sequence is never interrupted or altered. A microinstruction is decoded, executed, and completed in one cycle. Microinstruction execution is not pipelined over several cycles, except that while one instruction is being executed, its successor is being read from the control store. (The control store is composed of twenty-four 4K x 4-bit RAM chips arranged in two banks of twelve for a total of 4K x 48.)

A "click" is three successive cycles, and is the basic microcode time unit. The microcode transfers exactly one 16-bit memory word in a click, and the simplest and most frequently executed microinstructions complete in one click. Memory requests and I/O and map references are started in c1 and completed in c3, thus the effective memory cycle time is 375 ns.

MEB PWB

The Memory Expansion Board (MEB) PWB contains additional system memory for the 6085. It can be viewed as one memory unit which has five memory banks of 512 Kbytes each. The MEB works in conjunction with the DCM PWB, where the rest of the system memory is located.

PCO PWB

The PC Option (PCO) PWB uses a coprocessor identical to the IOP (i.e., an 80186). It shares the inner IOP system bus with the IOP and acts as a bus master when executing. Since all PCO I/O operations are trapped and serviced by the IOP, the PCO processor does not have direct control of the PCO I/O devices. In addition, there is Mesa microcode support for the PCO display emulation.

Options Slot

The general options slot provides a buffered IOP bus. This bus is not the internal systems bus, but a derived IOP bus, therefore, not all I/O system functions are available on the options bus. The Options Slot has a buffered address bus (16 bits) and a buffered data bus (16 bits).

LPO PWB

The Local Printer Option (LPO) PWB uses the general options slot. When a document is sent to the 4045 Laser CP, the 80186 processor breaks down the interpress master and generates band list or bitmap raster data for the image. The processor then initiates an I/O operation to move the compressed video data through the IOP DMA Controller to the LPO PWB. The LPO PWB in turn transfers the compressed video data, a byte at a time, via the parallel port to the 4045 Laser CP.

SPO PWB

The Scanner/Printer Option (SPO) PWB uses the general options slot. Two external ports are provided on the board: one is dedicated to the printing application and the other can be used to connect either a scanner or a printer. The function of the SPO PWB is to provide the appropriate handshake signals for each port. The SPO PWB provides a direct data transfer path between the peripherals attached to its ports and the IOP. A path is also provided, via the IOP, to the Mesa processor.

Rigid Disk Drive

The Rigid Disk Drive is the primary storage device in the 6085 Processor. The rigid disk subsystem has two main components:

- the disk drive, which provides storage of local files
- the rigid disk controller (RDC), which supports various disk operations. The RDC contains both its own DMA function and rigid FIFO, which transfer control, data, and status blocks between main memory and the rigid disk controller.

The 6085 Processor is configured with one of four rigid disk drive sizes: 10MB (megabyte), 20MB, 40MB or 80MB. The rigid disk drive is mounted immediately below the power supply.

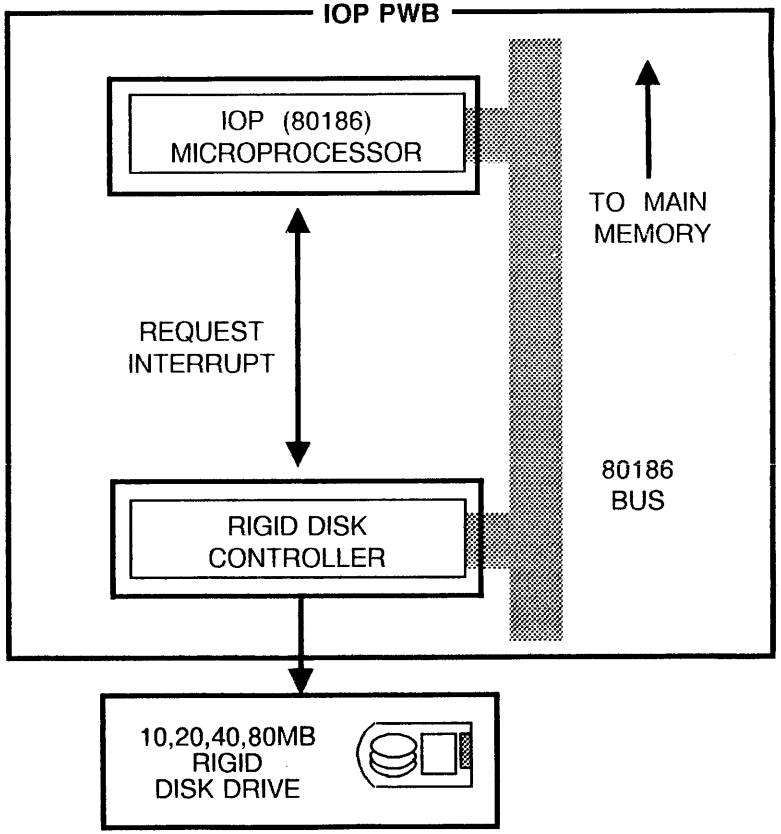


Figure 44. Rigid Disk Subsystem

Cooling Fans

The 6085 processor is cooled by three fans located under the card cage. These fans direct air flow from the air intake vents along the lower edges of the processor up through the card cage. The fans receive DC power from the power supply whenever the processor is switched on.

Display

The display operates on AC line voltage and gets its power from the power supply. The horizontal sync, vertical sync and video signals are supplied by the DCM PWB. There are two displays available for the 6085 PCS: 15-inch and 19-inch. The 6085 determines which display is connected by grounding a signal in the connector to the DCM PWB. The 19-inch display has a grounding pin in the connector while the 15-inch display does not.

Keyboard

Keyboard information is sent out in one byte codes unless there is mouse information, in which case a 3-byte code is used. The keyboard is asynchronous and operates at 9600 baud. During periods of no keyboard or mouse activity, the keyboard will send the mouse coordinates back to the workstation every 400-500 milliseconds. If no byte is received from the keyboard within a second, the processor will send a reset command to the keyboard.

The +5VDC needed to operate both the keyboard and the mouse is supplied by the IOP PWB through the keyboard cable.

Optical Mouse

The optical mouse is a device used to move the cursor on the display. The two buttons on the mouse are used by the system software to perform unique functions. The mouse operates on the +5VDC supply furnished by the processor through the keyboard cable.

The optical mouse has two sensors mounted on the underside that, when moved across the pattern of regularly spaced dots printed on the mouse pad, send signals indicating X, Y coordinate direction and speed of travel to the mouse controller located in the keyboard.

Ethernet Connector

The Ethernet connector provides a means of attaching the 6085 to a 50 ohm Ethernet cable through a drop cable and transceiver.

Floppy Disk Drive

The Floppy Disk Drive is a dual sided, dual density drive. Control signals from the Floppy Disk Controller circuitry on the IOP PWB are received through the interface cable. These control signals select the appropriate side of the disk, control the head stepper motor, control the head load solenoid, and select read or write modes. The data signals are the read or write data that is to be recorded or read from the Floppy Disk.

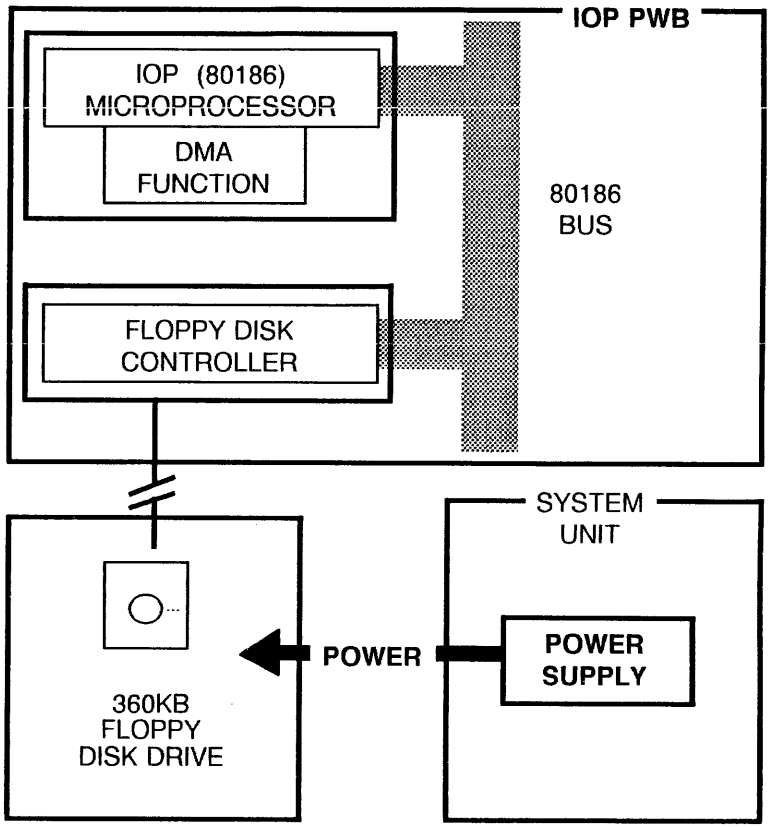


Figure 45. Floppy Disk Subsystem Block Diagram

The Floppy Disk Drive sends the following status information through the Floppy Disk Drive cable to the Floppy Disk Controller circuitry on the IOP PWB:

- Ready (Floppy Disk loaded and at speed)
- Index (Index hole sensed)
- Track 00 (Read/Write Head positioned on Track 00)
- Write Protect (Write protected disk loaded in the drive)

The DC voltages (+5VDC, +12VDC, and GND) are supplied by the power supply through the Floppy Disk Drive cable.

Section Contents

Plug/Jack Locationals

Plug/Jack Locational Drawings

Wirenets

Test Points

Plug/Jack Locationals

How to Use the Plug/Jack Locationals

Locate the desired Plug/Jack in the P/J Number column of the Connector Location Index. Note that the column is in alphabetical order. Then refer to the column labeled Figure/Item to identify the figure and item number to be used to locate the plug/jack.

Table 1. Processor Connector Location Index

P/J	Description	Figure/ Item
AC Input	Power Cord Socket to Power Supply	1/4
Backplane-J12	Backplane to Fan Assembly (6085 PCS) or Interlock Solenoid/Fan Assembly (Commercial Widebody)	1/8 2/4
Bus Extender	MPB PWB port	1/10
Comm DTE	IOP PWB RS232C Port	1/11
Display	DCM PWB display port	1/14
Display Power	Power Supply to the Display	1/3
Enet	IOPB PWB to the Transceiver	1/2
Fan Assembly Power-J1: Standard Processor	Fan Assembly to the Backplane	1/7
Floppy	IOPB PWB to the Floppy Drive	1/13
Floppy Drive Power-J2	Power Supply to the Floppy Drive	1/1
Key'bd	IOPB PWB to the Keyboard	1/12
Printer	Option PWB Port to 4045 Laser Printer	1/5

Table 1. Processor Connector Location Index

P/J	Description	Figure/ Item
Printer DCE	IOP PWB RS232C Port	1/9
Scanner	Option PWB Port to 7650 Pro Imager	1/6
RRD Connector	C7 Bracket Assembly to Removable Rigid Drive	2/1
Solenoid Assembly Power-J2	Backplane to the Solenoid Assembly (Commercial Widebody only)	2/2
Solenoid Assembly Power-J3	Backplane to the Solenoid Assembly (Commercial Widebody only)	2/3

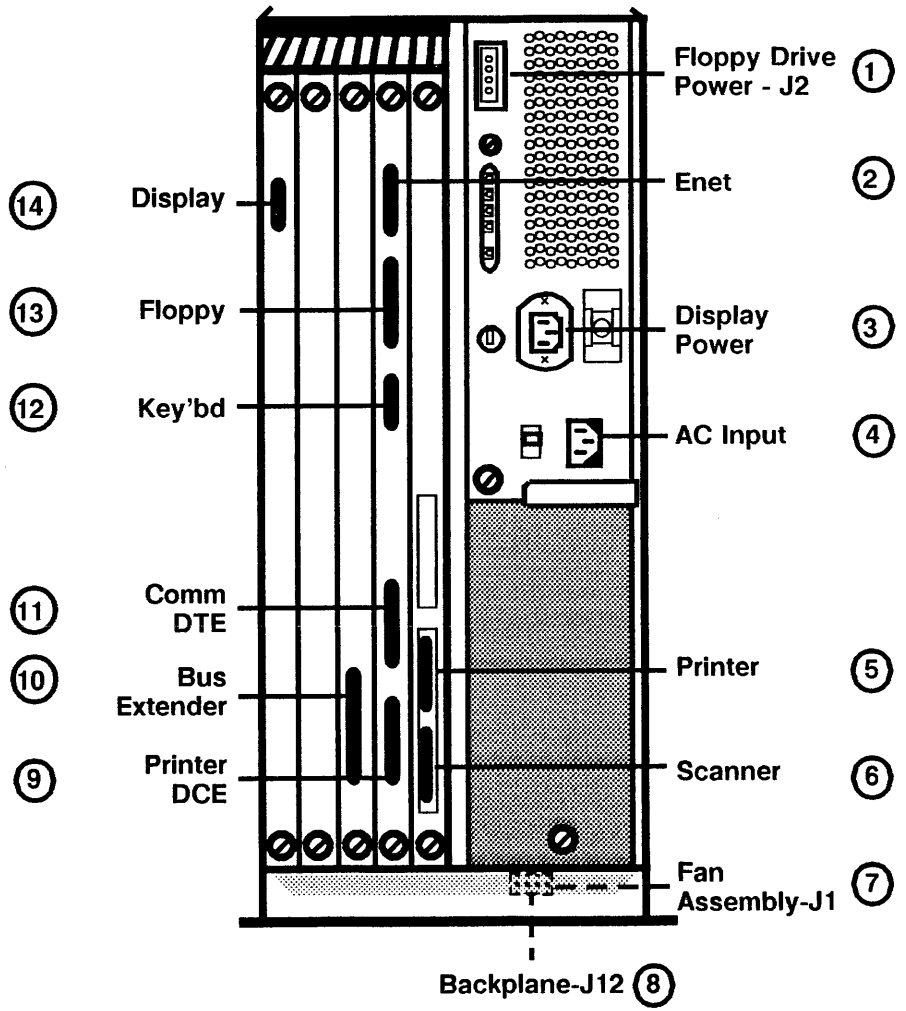


Figure 1. 6085 PCS (Rear) Plug/Jack Locations: Standard Processor

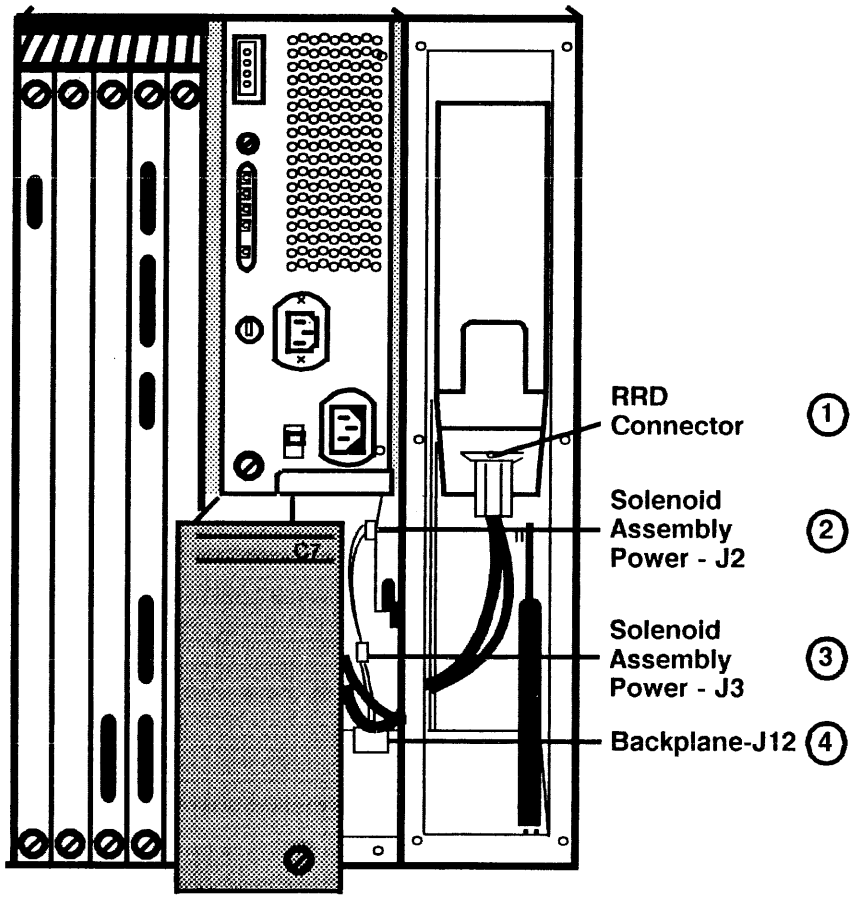


Figure 2. 6085 PCS (Rear) Plug/Jack Locations: Commercial Widebody

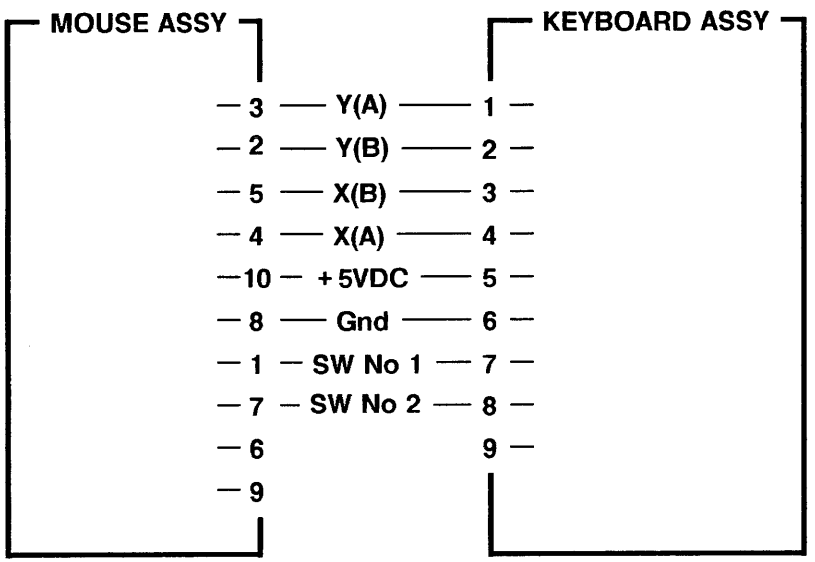


Figure 3. Mouse/Keyboard

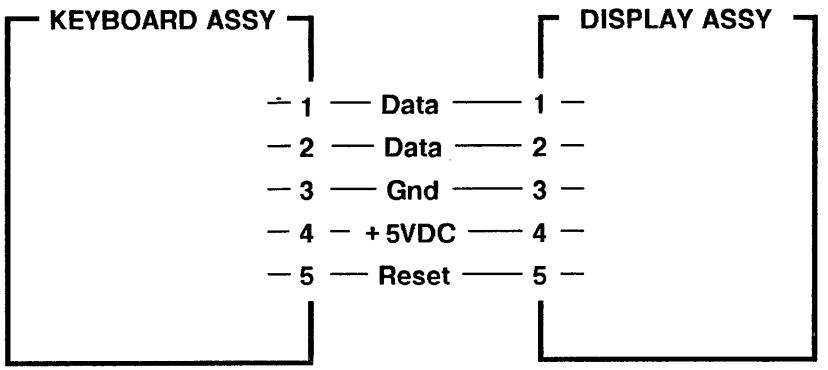


Figure 4. Keyboard/Display

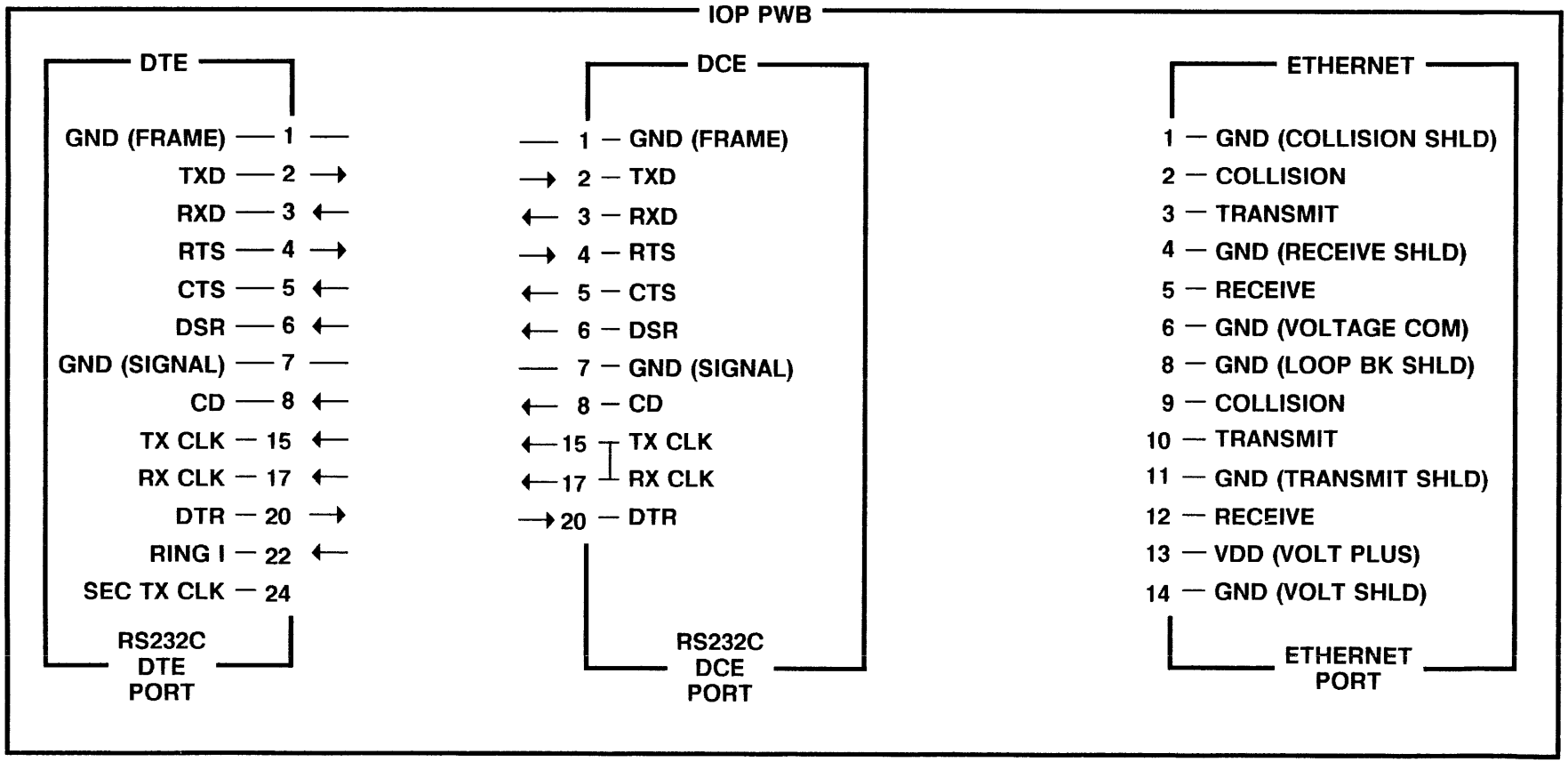


Figure 5. IOP PWB

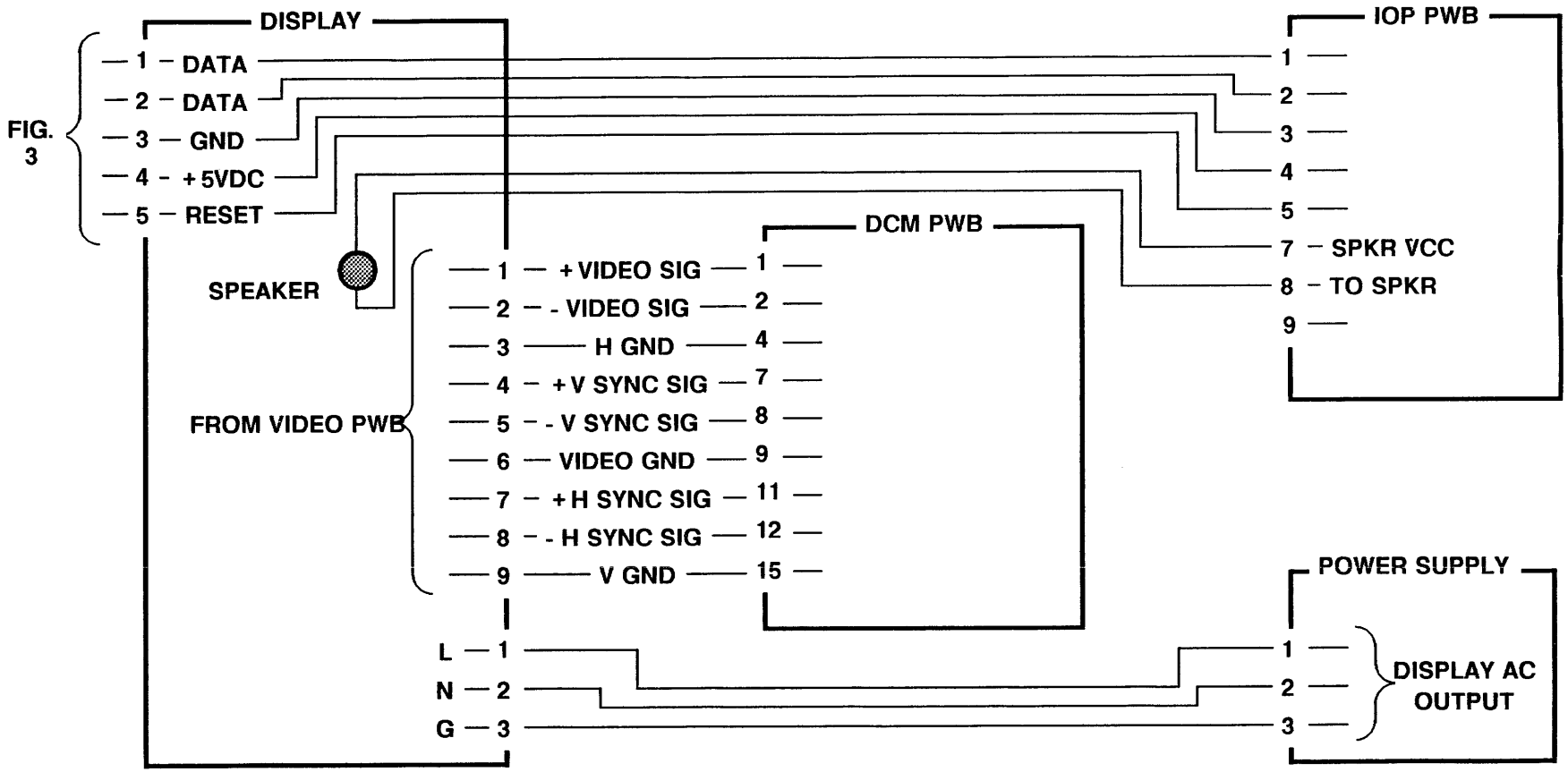


Figure 6. Display

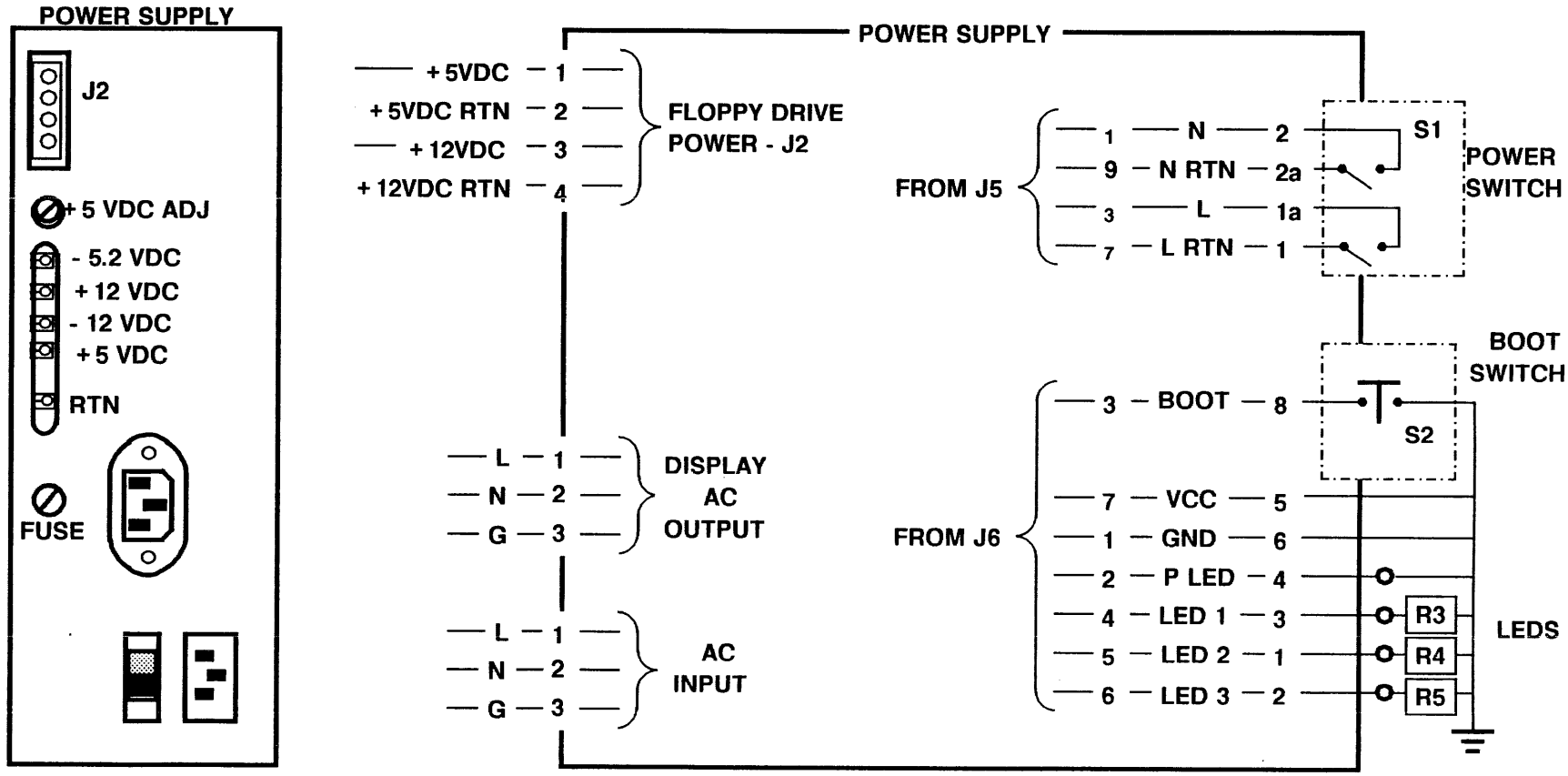


Figure 7. Power Supply

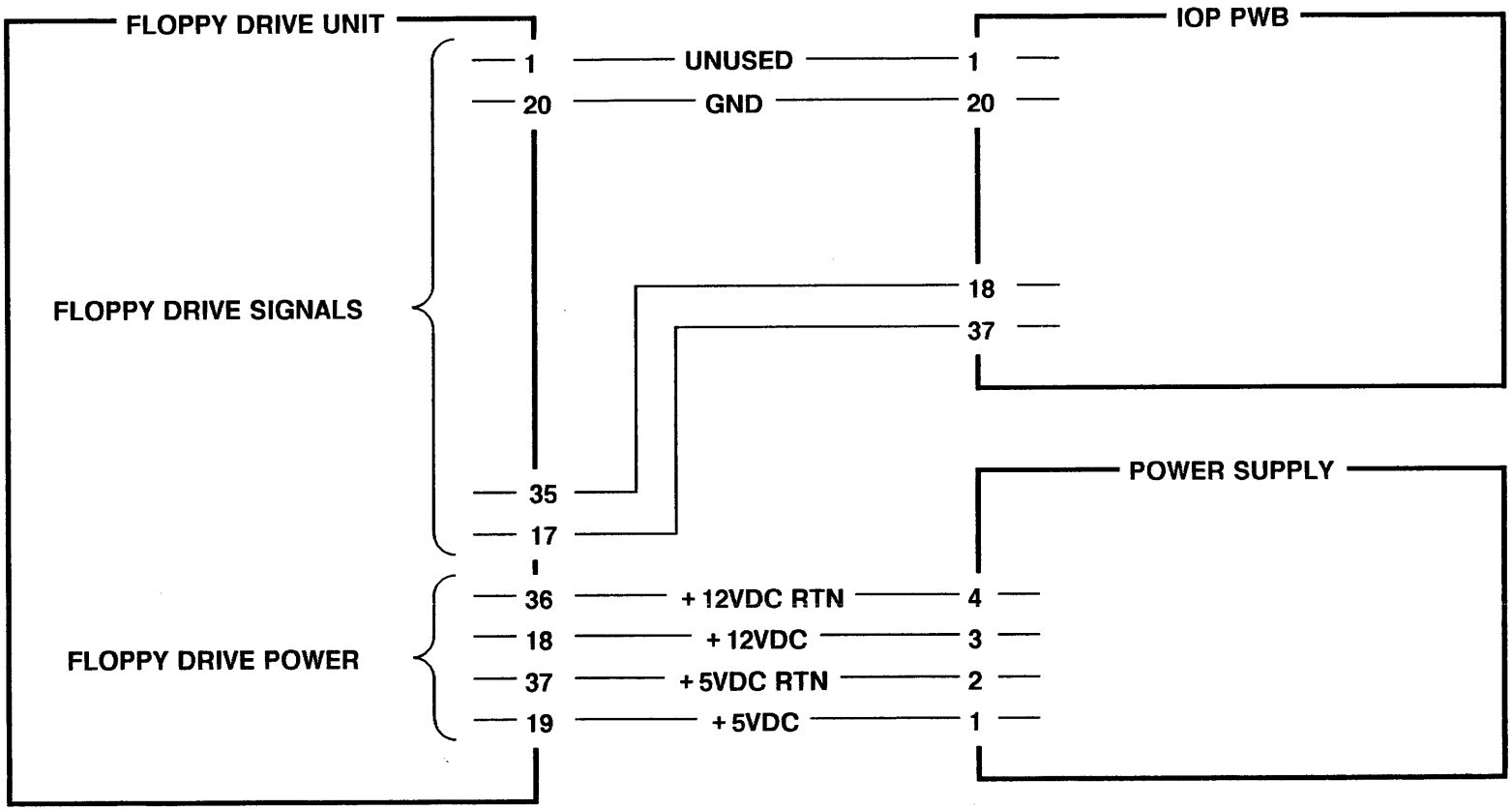


Figure 8. Floppy Drive

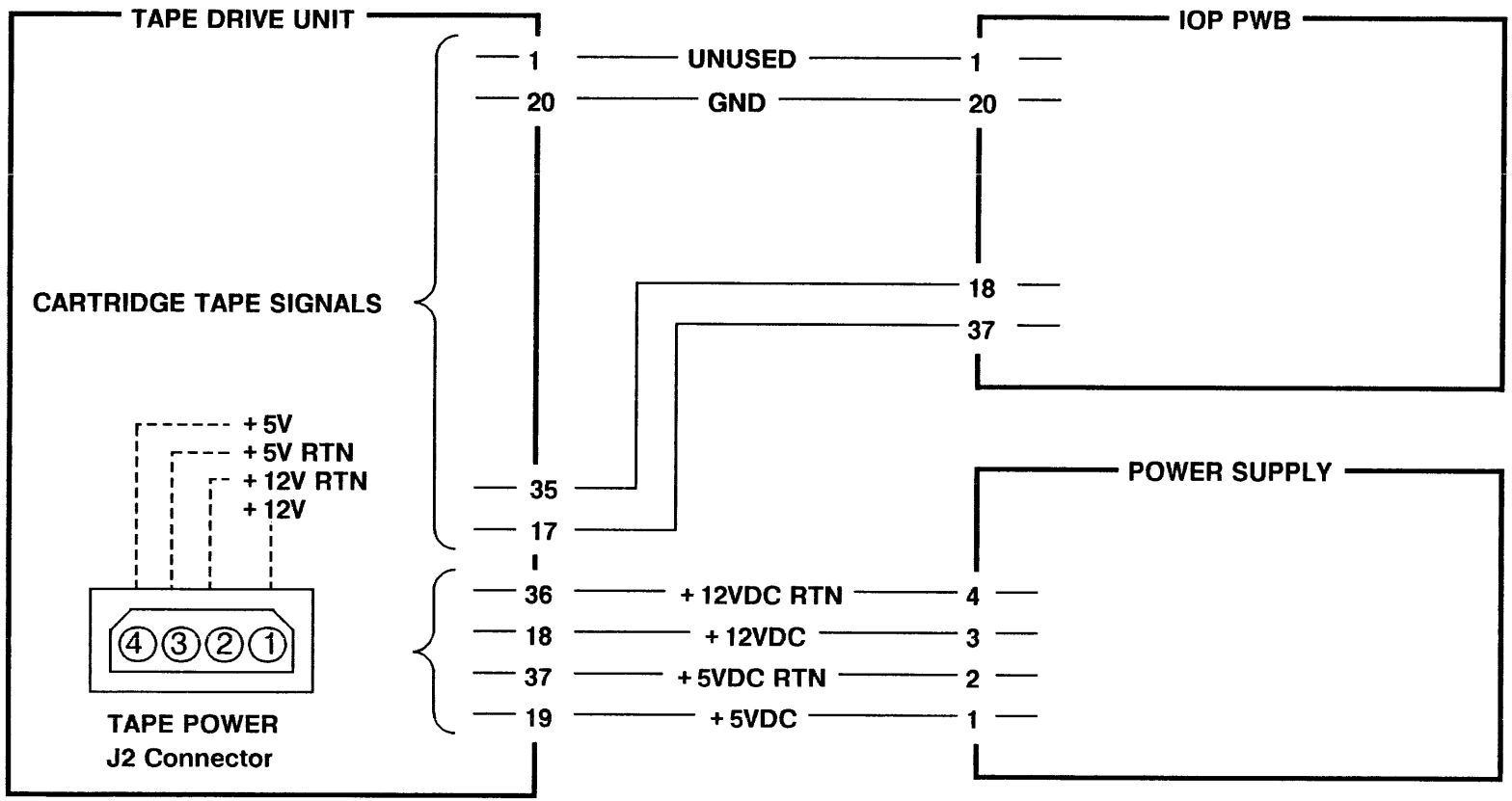


Figure 9. Cartridge Tape Drive

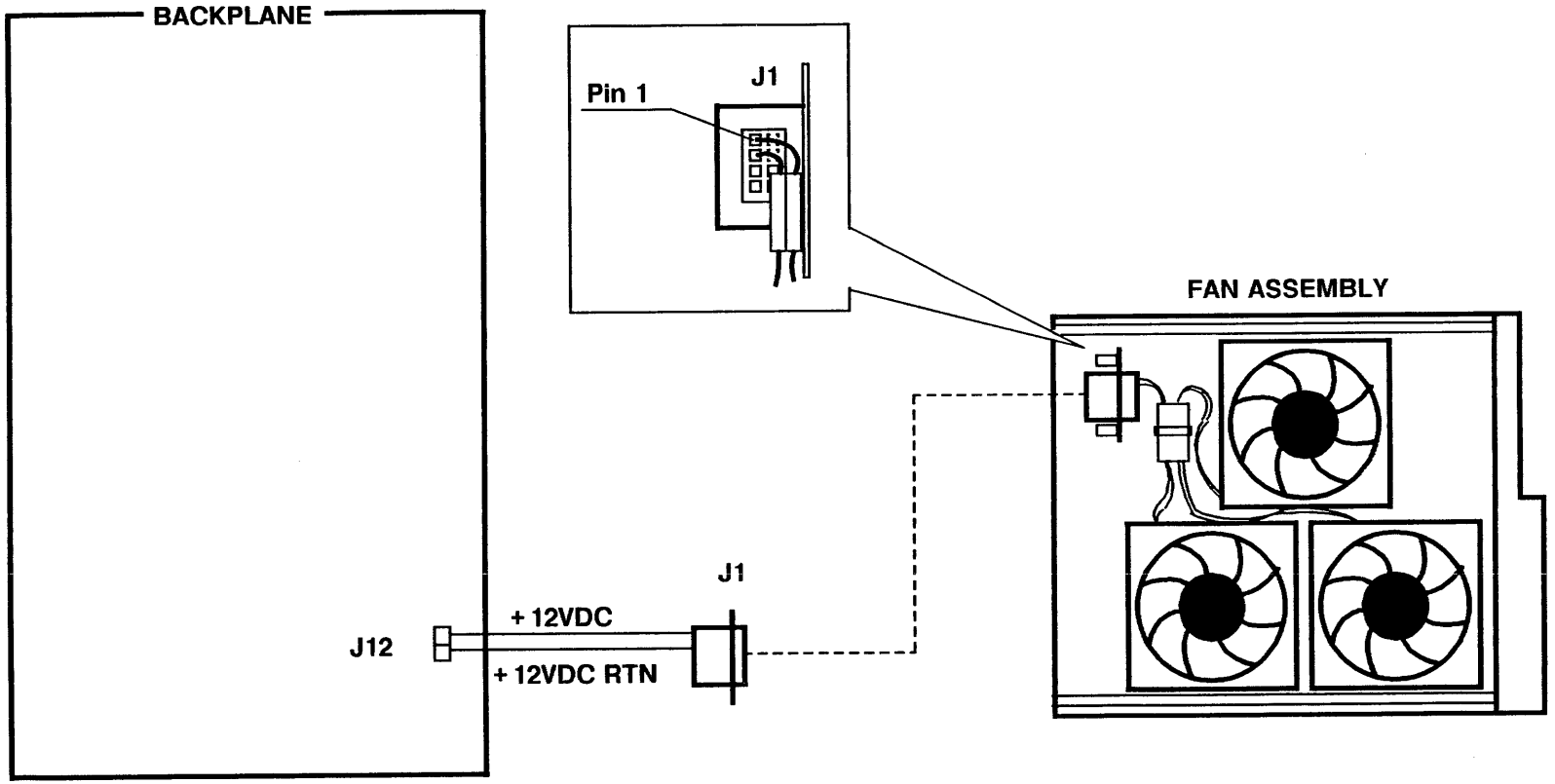


Figure 10. Fans - Standard Processor

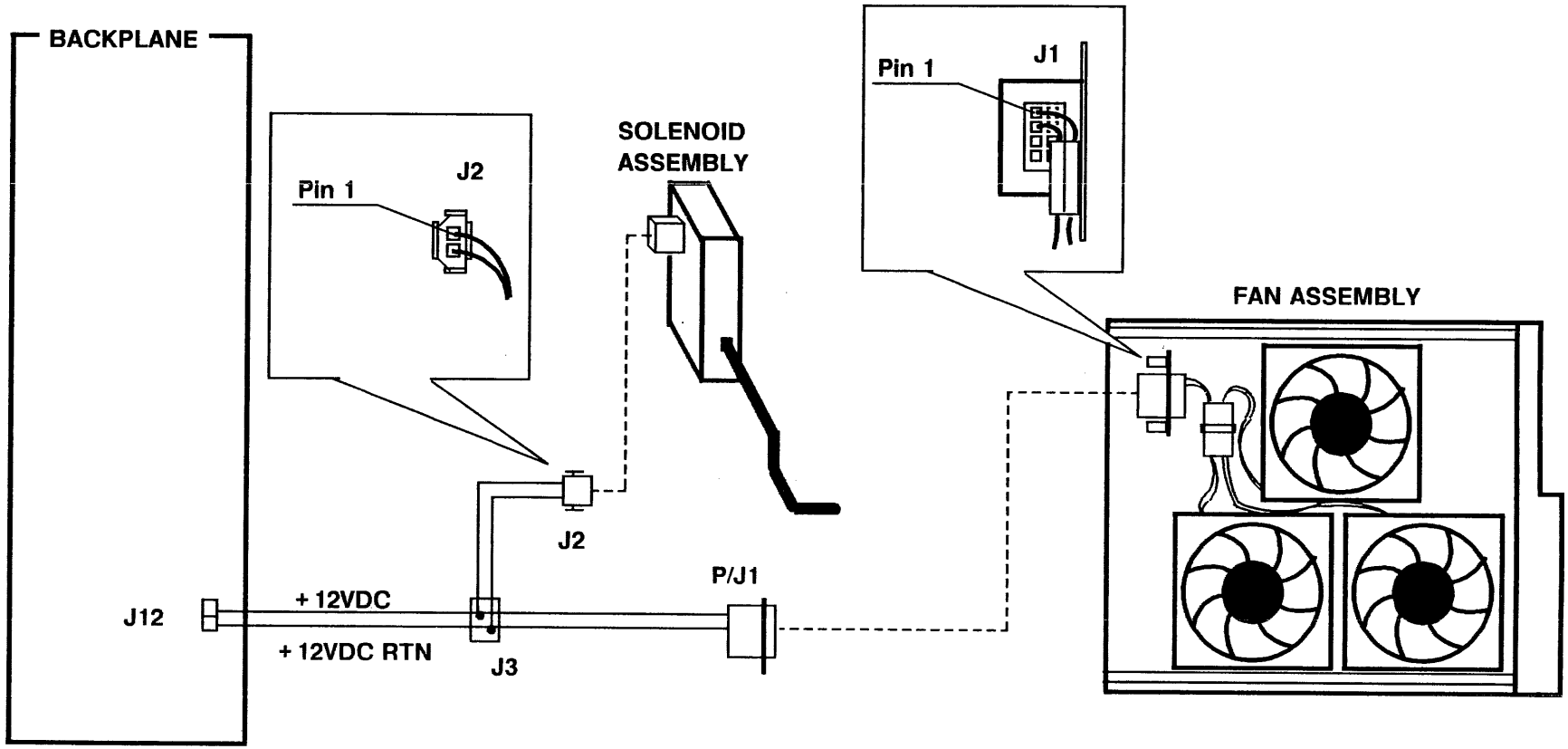


Figure 11. Fan and Interlock Solenoid - Commercial Widebody

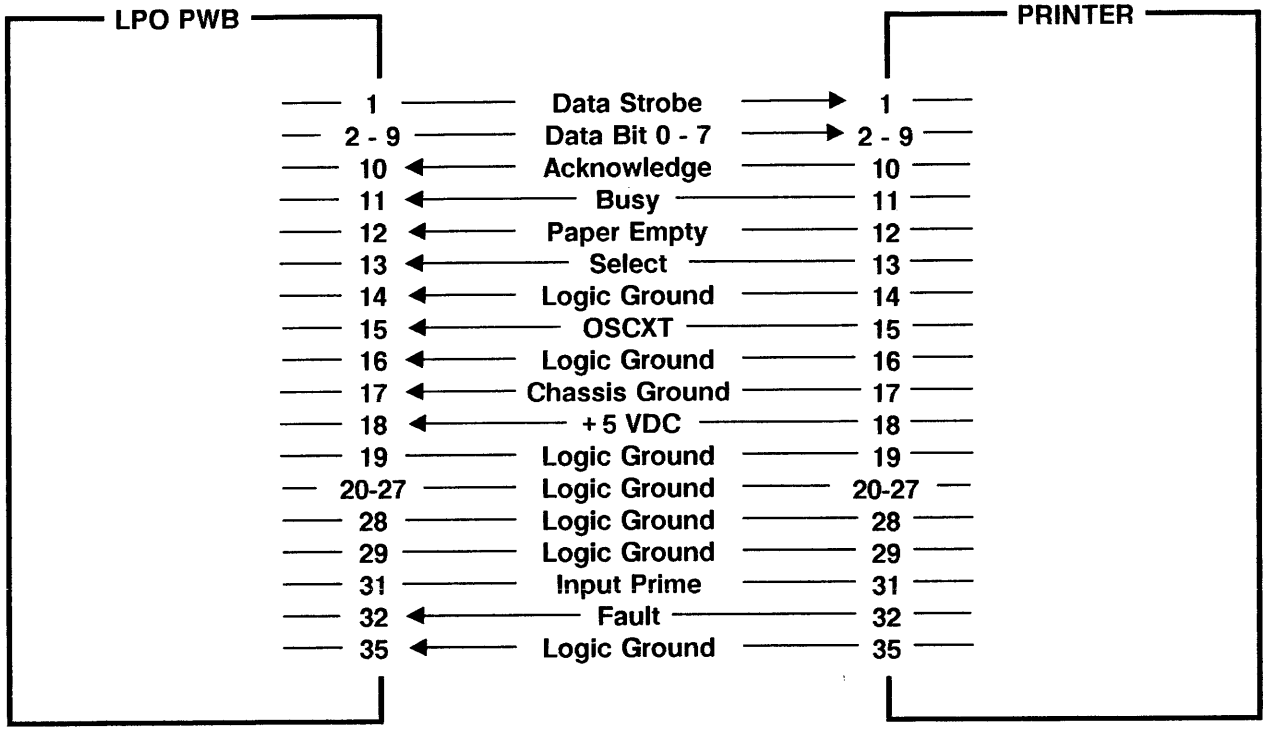


Figure 12. Printer Interface Cable

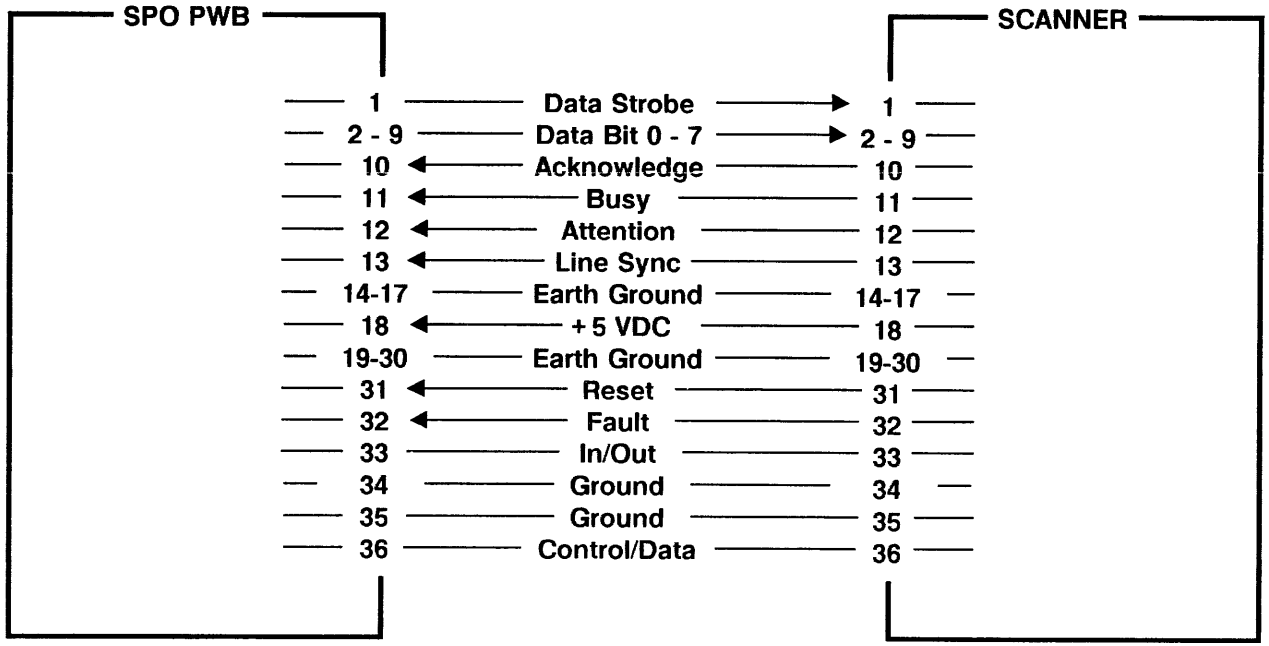


Figure 13. Scanner Interface Cable

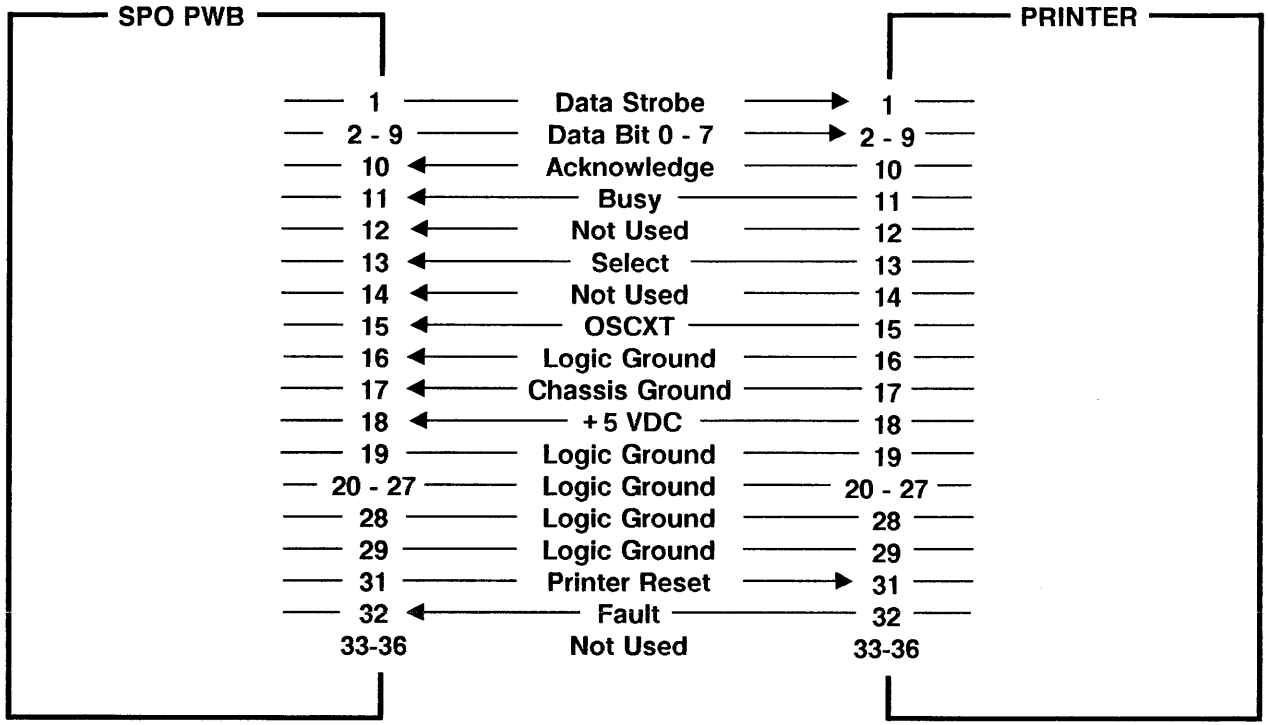


Figure 14. Printer Interface Cable

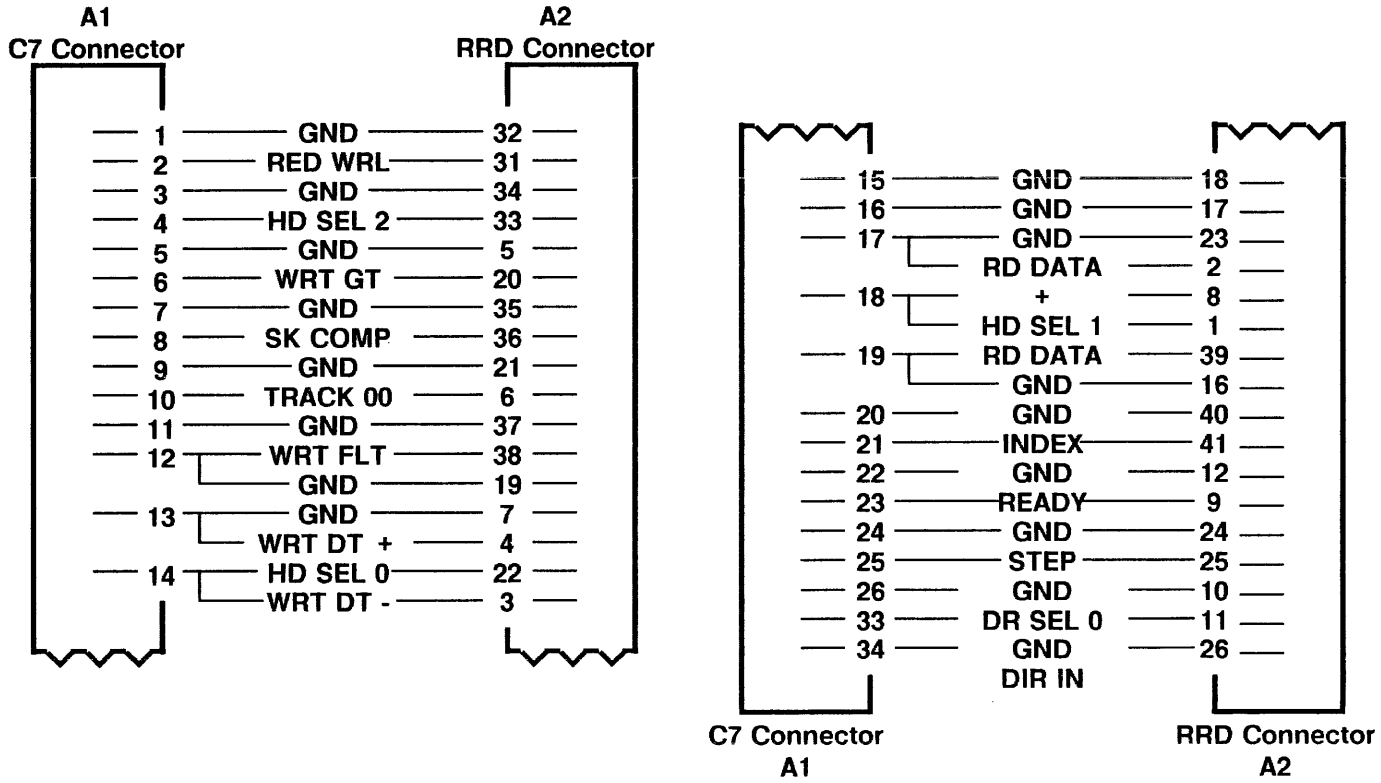


Figure 15. Removable Rigid Drive Cable

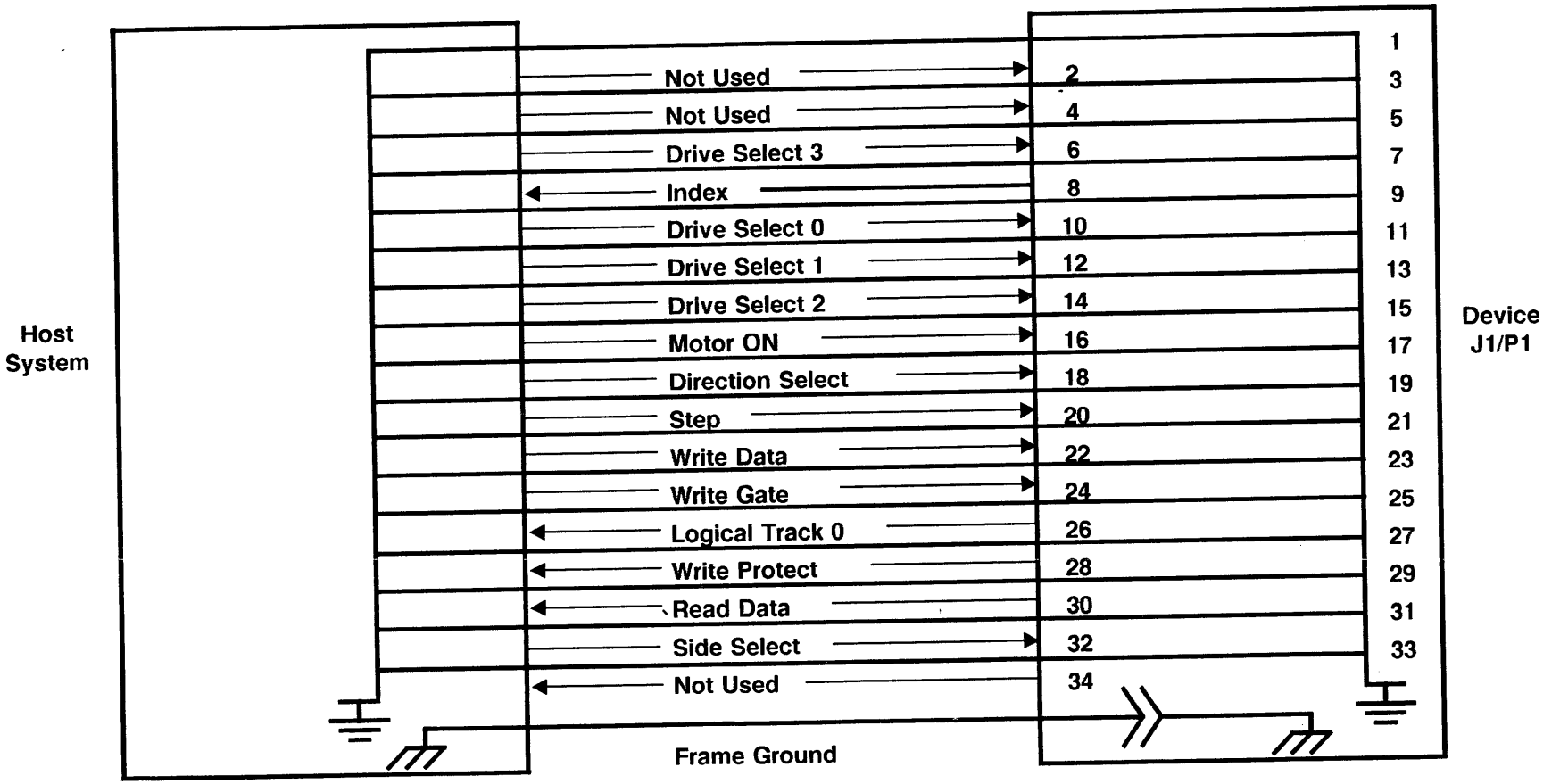


Figure 16. Cartridge Tape Drive Cable

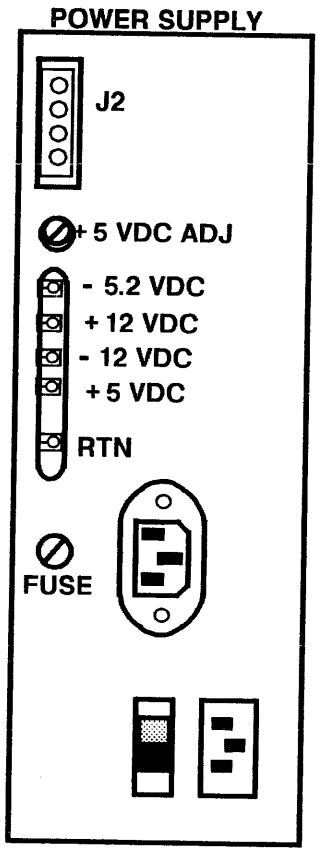


Figure 17. Power Supply Test Points

Table 2. Test Point Voltages

Test Point	Return	Voltage Range
+ 5 VDC	RTN	+ 5.15 to + 5.25 VDC
-5.2 VDC	RTN	-5.05 to -5.35 VDC
+ 12 VDC	RTN	+ 11.83 to + 12.57 VDC
-12 VDC	RTN	-11.64 to -12.36 VDC

8. Accessories/Options

This section does not apply to this product.

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