

WANG

**WANG INTEGRATED
IMAGE SYSTEMS**

COMPANY PROPRIETARY STATEMENT

This document is the property of Wang Laboratories, Inc. All information contained herein is considered Company Proprietary, and its use is restricted solely to assisting you in servicing Wang products. Neither this document nor its contents may be disclosed, copied, revealed, or used in whole or in part for any other purpose without the prior written permission of Wang Laboratories, Inc. This document must be returned upon request of Wang Laboratories, Inc.

Technical Publications

Customer Service

Product Maintenance Manual

741-1801

COMPANY CONFIDENTIAL

PREFACE

This document is the Illustrated Product Maintenance Manual (PMM) for Wang Integrated Image Systems (WIIS). The manual is organized in accordance with Customer Engineering Technical Documentation's approved PMM outline. The scope of this manual reflects the type of maintenance philosophy selected for WIIS.

The purpose of this manual is to provide the Wang-trained Customer Engineer (CE) with sufficient instructions to operate, troubleshoot, and repair WIIS. The manual will be updated on a regular schedule or as necessary. Such updates will be published either as Publication Update Bulletins (PUBs) or as full revisions.

First Edition (November, 1987)

Use of the material in this document is authorized only for the purpose stated in the Preface, above.

Copyright 1987 by Wang Laboratories, Inc.

TABLE OF CONTENTS

SECTION 1

INTRODUCTION

	<u>Page</u>
1.1 SCOPE AND PURPOSE	1-1
1.2 ORGANIZATION AND LAYOUT	1-2
1.3 RELATED DOCUMENTATION	1-3
1.3.1 Small WIIS	1-3
1.3.2 Large WIIS	1-4

SECTION 2

IDENTIFICATION

	<u>Page</u>
2.1 SMALL WIIS MAJOR ASSEMBLIES	
2.1.1 VS-5/VS-6 Computer System	2-1
2.1.2 4250IMG Image-Capable Workstation	2-2
2.1.3 VS DP/WP Workstations	2-3
2.1.4 Thermal Printer	2-4
2.1.5 Laser Imaging Systems	2-5
2.1.6 Standalone Optical Disk Drive (WIIS-2278V-1)	2-6
2.1.7 Scanner and Optional Document Feeder (WIIS-INPUT-02)	2-7
2.1.8 Small Data Storage Cabinet	2-8
2.2 LARGE WIIS MAJOR ASSEMBLIES	2-9

TABLE OF CONTENTS

SECTION 3 CONTROLS AND INDICATORS

	<u>Page</u>
3.1 SMALL WIIS PERIPHERALS	3-1
3.2 LARGE WIIS PERIPHERALS	3-2

SECTION 4 OPERATION

	<u>Page</u>
4.1 SMALL WIIS	4-1
4.1.1 Power-Up Procedure	4-1
4.1.2 WIIS Image System Shutdown	4-2
4.1.3 VS-5/VS-6 System Power Down Procedure	4-3
4.1.4 Emergency System Power-Down Procedure	4-4
4.2 LARGE WIIS	4-5
4.2.1 Power-Up Procedure	4-5
4.2.2 Power-Down Procedure	4-6

TABLE OF CONTENTS

SECTION 5 PREVENTIVE MAINTENANCE

	<u>Page</u>
5.1 SMALL WIIS	5-1
5.2 LARGE WIIS	5-2

SECTION 6 TROUBLESHOOTING

	<u>Page</u>
6.1 SMALL WIIS	6-1
6.1.1 Tools and Equipment	6-1
6.1.2 Troubleshooting Flowchart	6-2
6.1.3 Optical Disk Exerciser	6-3
6.2 LARGE WIIS	6-10

TABLE OF CONTENTS

SECTION 7

REPAIR

	<u>Page</u>
7.1 SMALL WIIS	7-1
7.2 LARGE WIIS	7-2

SECTION 8

ADJUSTMENTS

	<u>Page</u>
8.1 SMALL WIIS	8-1
8.2 LARGE WIIS	8-2

TABLE OF CONTENTS

SECTION 9

UNPACKING AND SETUP

	<u>Page</u>
9.1	INSTALLATION SITE CHECK 9-1
9.2	TOOLS, EQUIPMENT, AND DOCUMENTATION 9-2
9.3	UNPACKING PROCEDURES 9-3
9.4	SMALL WIIS INSTALLATION 9-4
9.4.1	Switch and Jumper Settings 9-4
9.4.2	Overall System Connection 9-5
9.4.3	Small Data Storage Cabinet Connection 9-6
9.4.4	Optical Disk Drive Connection 9-7
9.4.5	VS DP/WP Workstation Connection 9-9
9.4.6	LIS-12/LIS-24 Laser Imaging System Connection 9-10
9.4.7	LCS-15 Laser Composition System Connection 9-14
9.4.8	VS-6 to 4250IMG WS Connection 9-15
9.4.9	Thermal Printer Connection 9-17
9.4.10	12-Inch Imaging WS Connection 9-18
9.4.11	16-Inch Imaging WS Connection 9-20
9.4.12	Scanner Connection 9-21
9.4.13	Initial Power-Up and Voltage Check 9-22
9.4.14	Preliminary Software Installation 9-23
9.4.15	VSOS Software Installation 9-24
9.4.16	PACE Software Installation 9-32
9.4.17	WIIS Software Installation 9-39
9.5	LARGE WIIS INSTALLATION 9-46

TABLE OF CONTENTS

SECTION 10

FUNCTIONAL DESCRIPTION

	<u>Page</u>
10.1 SMALL WIIS	10-1
10.1.1 System Overview	10-1
10.1.2 System Block Diagram	10-3
10.1.3 VS-5/VS-6 Computer System	10-4
10.1.4 4250IMG Image Capable Workstation	10-5
10.1.5 VS Standard Workstation	10-7
10.1.6 WIIS-INPUT-02 Document Scanner	10-8
10.1.7 Thermal Printer	10-9
10.1.8 LIS-12 and LIS-24 Image-Capable Printers	10-10
10.1.9 LCS-15 Laser Composition System	10-11
10.1.10 Standalone Magnetic Disk Drive(s)	10-12
10.1.11 WIIS-2278V-1 Standalone Optical Disk Drive	10-13

SECTION 11

SPECIFICATIONS

	<u>Page</u>
11.1 SMALL WIIS	11-1
11.1.1 Hardware Specifications	11-1
11.1.2 Software Specifications	11-2
11.2 LARGE WIIS	11-3

TABLE OF CONTENTS

SECTION 12 ILLUSTRATED PARTS

	<u>Page</u>
12.1 SMALL WIIS	12-1
12.1.1 4250IMG Workstation	12-2
12.1.2 System Cables	12-3
12.2 LARGE WIIS	12-5

SECTION

1

INTRODUCTION

SECTION 1 CONTENTS

SECTION 1 INTRODUCTION

	<u>Page</u>
1.1 SCOPE AND PURPOSE	1-1
1.2 ORGANIZATION AND LAYOUT	1-2
1.3 RELATED DOCUMENTATION	1-3
1.3.1 Small WIIS	1-3
1.3.2 Large WIIS	1-4

1.1 Scope and Purpose

The scope and purpose of this Illustrated Manual (IM) is to provide Wang Customer Engineers with the information necessary to install, troubleshoot, and repair Wang Integrated Image Systems (WIIS) in the field. Familiarity with the Wang VS and APC Product Lines, and familiarity with optical disk and microfilm data storage and retrieval systems is recommended for effective use of this IM.

WIIS are integrated office information systems based on Wang VS hardware and Wang Professional Application Creation Environment (PACE) software. Information captured in image form can include typed text, handwritten forms, printed documents annotated with text and drawings, line drawings, and photographs. Image storage on a WIIS configuration can be optical disk based, microfilm based, magnetic disk based, or a combination of these.

This IM describes two WIIS: Small and Large. Small WIIS are based on a VS-5/VS-6 and support only dedicated optical disk drives connected directly through the Small Computer Systems Interface (SCSI) port. Internal magnetic disk drives connected to the VS-5/VS-6 through the SCSI port are used to store the indexing data bases. Small WIIS also include an image-capable workstation, standard workstation, and an image-capable printer, all interfaced to the VS-5/VS-6 via the Local Communications Option (LCO). The image-capable

workstation interfaces to a document scanner and thermal printer.

Large WIIS are based on larger VS Systems (VS-65 through VS-7310) and function on a much bigger scale. Large WIIS provide all of the features of small WIIS. In addition, they offer greater image handling capability through the use of microfilm storage and retrieval units (SAR's) and jukeboxes interfaced to the VS via an image transfer controller (ITC). The jukebox is an optical disk handling system which supports up to five optical disk drives.

◆ END

1.2 Organization and Layout

This IM is a systems level document for both Small WIIS and Large WIIS. Typical WIIS consist of a number of individual peripherals operating under control of WIIS software. These peripherals include: imaging workstations, standard workstations, laser imaging printers, thermal printers, magnetic disk drives, microfilm SAR's, and optical disk drives.

Only those features of each peripheral which make its operation unique to WIIS are detailed in this IM. Standard operating criteria for each peripheral are found in the individual product maintenance manual (PMM) for that device and are not repeated here.

This IM is divided into twelve sections numbered 1 through 12. Each section describes a separate WIIS maintenance-related function and is arranged to minimize cross-referencing to other sections.

All procedures in this IM that require the use of support documentation for their completion list those documents as prerequisites. In addition, all items (tools, test equipment, etc.) required to complete a maintenance function are listed at the beginning of the procedure.

All or most of the information pertaining to a specific task is presented on a single sheet (frame) or on sequentially numbered multi-frames. Each frame, in turn, contains illustrations, numbered steps, and/or text describing

the logical sequence of events required to complete that task.

All frames except the last of a multi-frame procedure have a '◆ NEXT' designation in the lower-right area which indicates that additional information follows on the next frame. The last frame of each procedure is identified as such by the '● END' designation. Referencing to frames in another procedure or section is done parenthetically by means of an arrow followed by the section number (◆X.X.X.).

Steps within a frame are sequentially numbered around various illustrations. Each section is preceded by the section number and a section table of contents. The sections, and corresponding frames are arranged in numerical order from left-to-right and top-to-bottom on the individual microfiche cards.

● END

1.3 Related Documentation

1.3.1 Small WIIS

<i>DOCUMENT</i>	<i>PART NUMBER</i>
VS5/VS6 PMM	742-1705
LIS-12 PMM	742-1478
LIS-24 PMM	742-1670
LCS15 Manual (OEM)	742-1775
LPS-12	742-1107
4230A Workstation PMM	742-1709
2110A Terminal PMM	742-1740
APC PMM Character/Graphics/IBM Emulation Board (CGI) 12" & 16" Monitor Controller Scanner PCB	742-1676
Full-Page Monitor (1640) PMM	742-1800
Half-Page Monitor, PIC Addendum, PC PMM	742-1190
LCO, PC PMM	742-1190
SC4000 Scanner Manual (OEM)	742-XXXX
Thermal Printer Manual (OEM)	742-1335
Optical Disk Manual (OEM)	742-XXXX
Small Data Storage Cabinet	742-1674
Customer Site Planning Guide	742-5978

● END

1.3 Related Documentation

1.3.2 Large WIIS

(TO BE SUPPLIED)

◆ END

SECTION

2

IDENTIFICATION

SECTION 2 CONTENTS

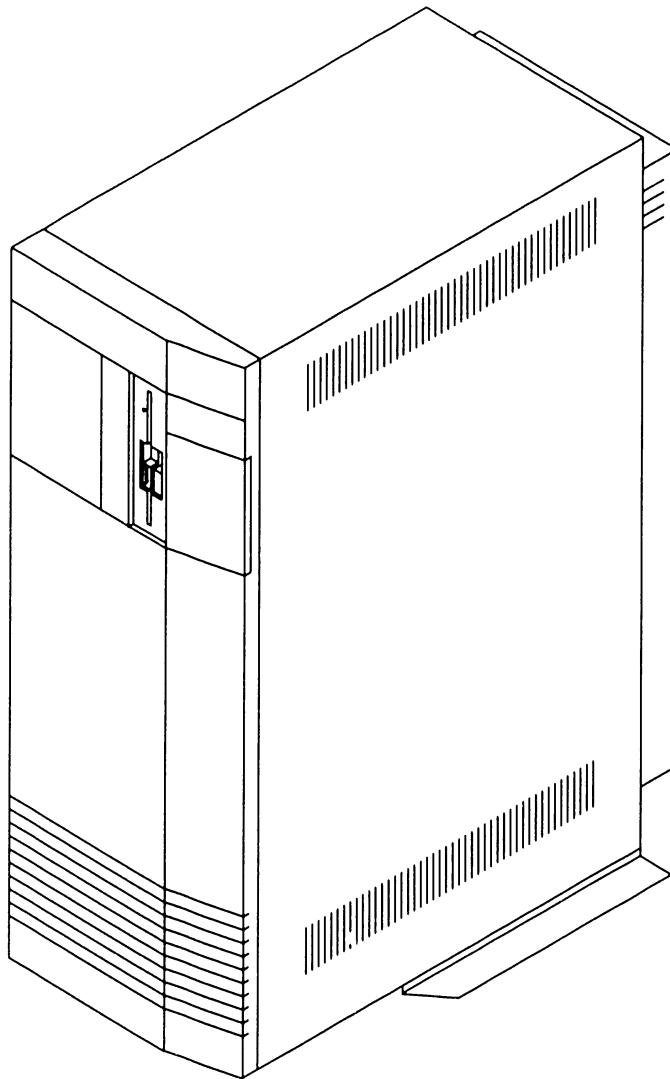
SECTION 2 IDENTIFICATION

	<u>Page</u>
2.1 SMALL WIIS MAJOR ASSEMBLIES	
2.1.1 VS-5/VS-6 Computer System	2-1
2.1.2 4250IMG Image-Capable Workstation	2-2
2.1.3 VS DP/WP Workstations	2-3
2.1.4 Thermal Printer	2-4
2.1.5 Laser Imaging Systems	2-5
2.1.6 Standalone Optical Disk Drive (WIIS-2278V-1)	2-6
2.1.7 Scanner and Optional Document Feeder (WIIS-INPUT-02)	2-7
2.1.8 Small Data Storage Cabinet	2-8
2.2 LARGE WIIS MAJOR ASSEMBLIES	2-9

2.1 Small WIS Major Assemblies

IDENTIFICATION

2.1.1 VS-5/VS-6 Computer System

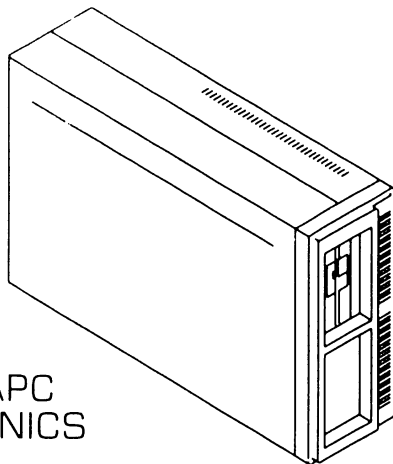


● END

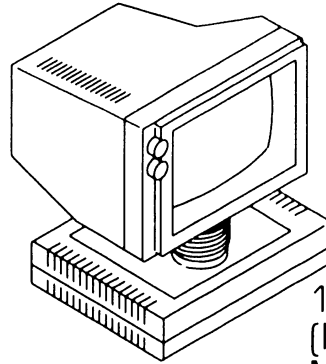
2.1 Small WIS Major Assemblies

IDENTIFICATION

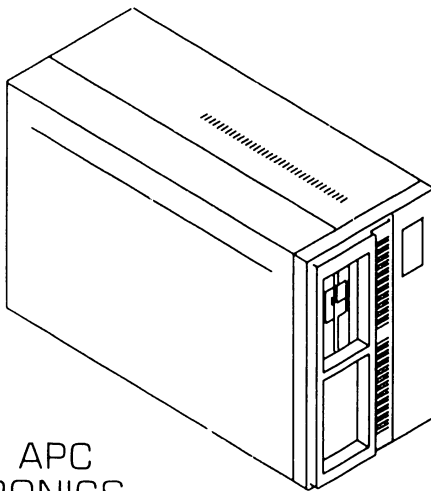
2.1.2 4250IMG Image-Capable Workstation



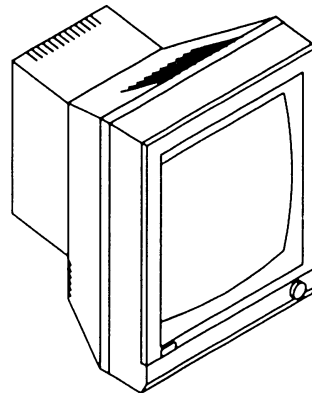
5-SLOT APC
ELECTRONICS
UNIT



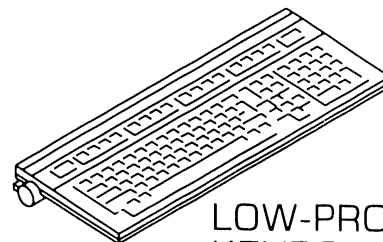
12-INCH
(HALF-PAGE)
MONOCHROME
MONITOR
(100 DOTS/INCH)



8-SLOT APC
ELECTRONICS
UNIT



16-INCH
(FULL-PAGE)
MONOCHROME
MONITOR
(200 DOTS/INCH)



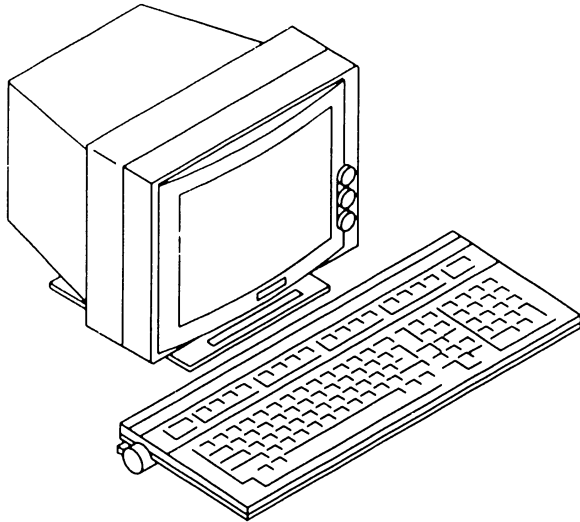
LOW-PROFILE
KEYBOARD
(101-KEY)

● END

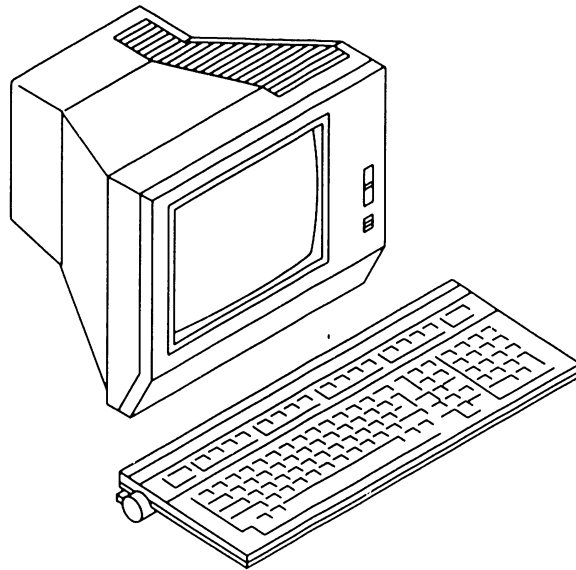
2.1 Small WIIS Major Assemblies

IDENTIFICATION

2.1.3 VS DP/WP Workstations



2110A WORKSTATION



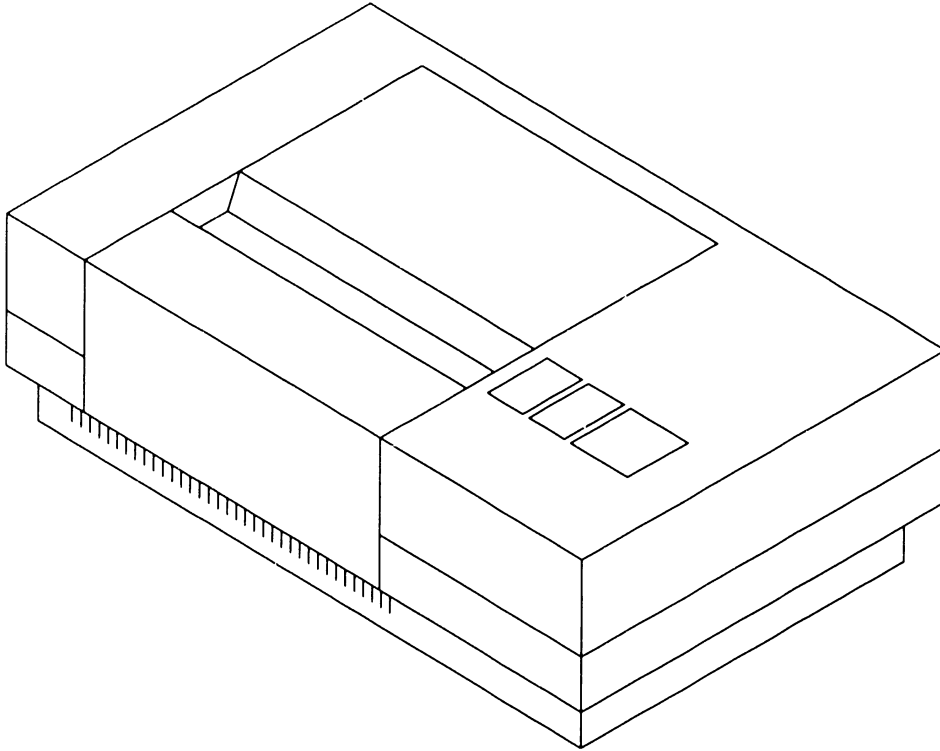
4230A WORKSTATION

● END

IDENTIFICATION

2.1 Small WIS Major Assemblies

2.1.4 Thermal Printer



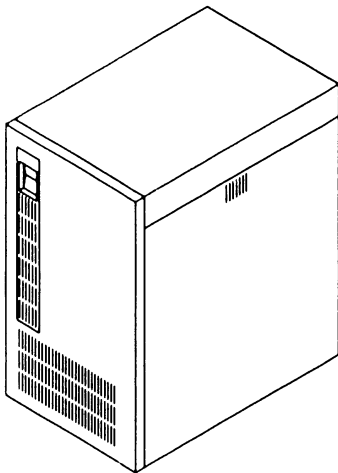
WANG THERMAL PRINTER
(200 DOTS/INCH)

● END

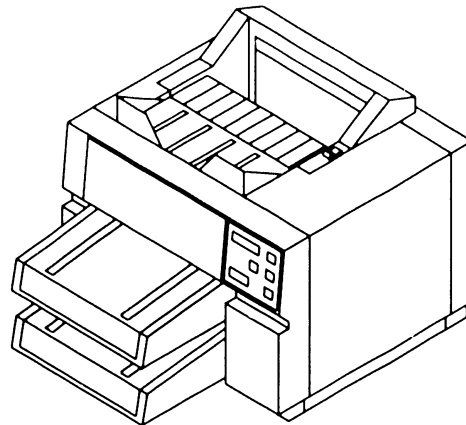
2.1 Small WIS Major Assemblies

IDENTIFICATION

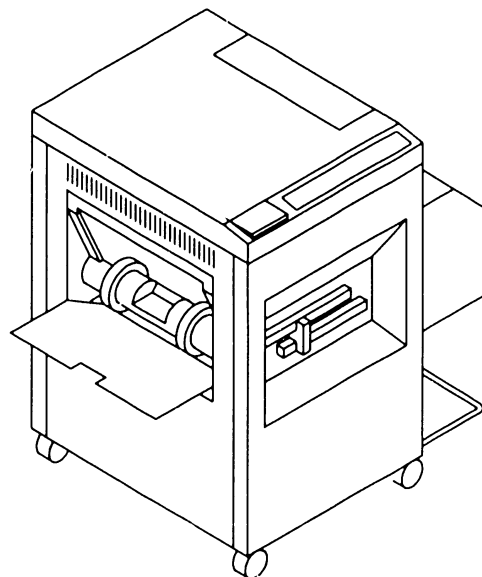
2.1.5 Laser Imaging Systems



LIS-12/LIS-24
(300 DOTS/INCH)



LCS-15
(300 DOTS/INCH)



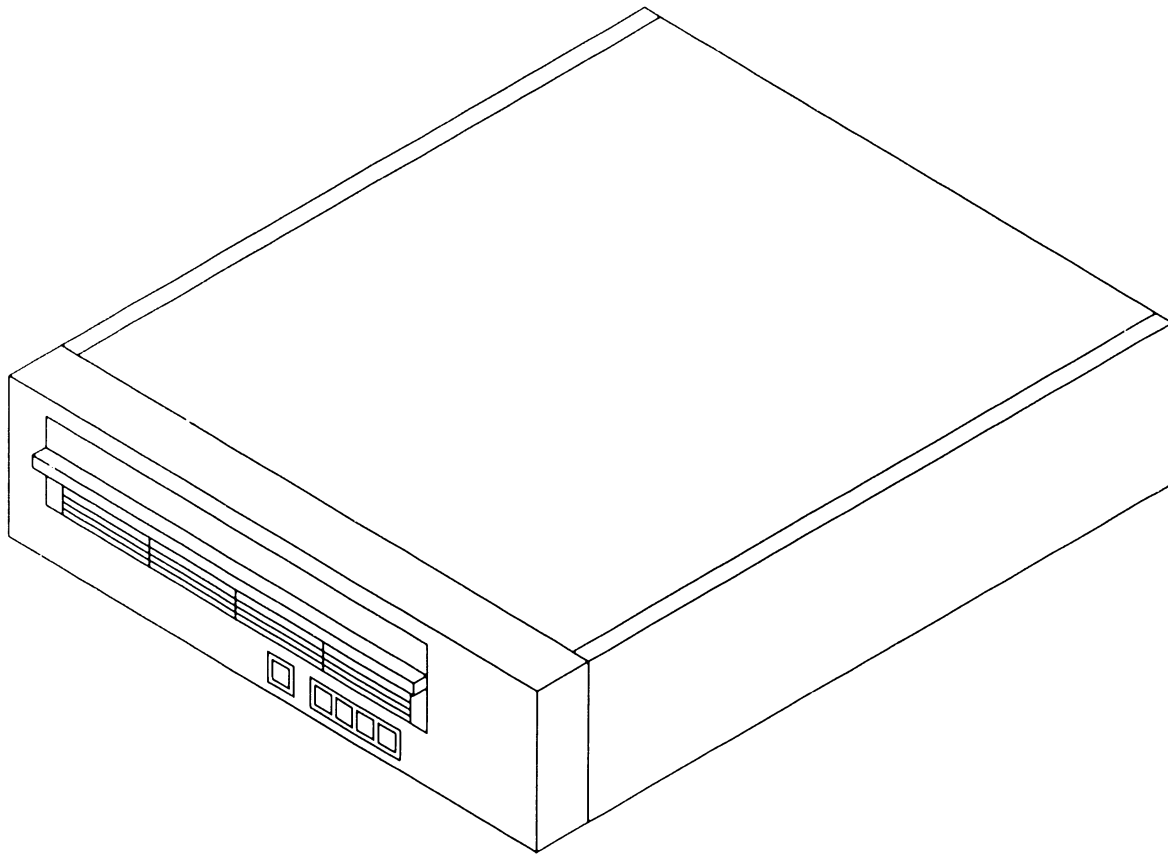
LPS-12/LPS-24
(P/O LIS-12/LIS-24)

● END

IDENTIFICATION

2.1 Small WIS Major Assemblies

2.1.6 Standalone Optical Disk Drive (WIS-2278V-1)

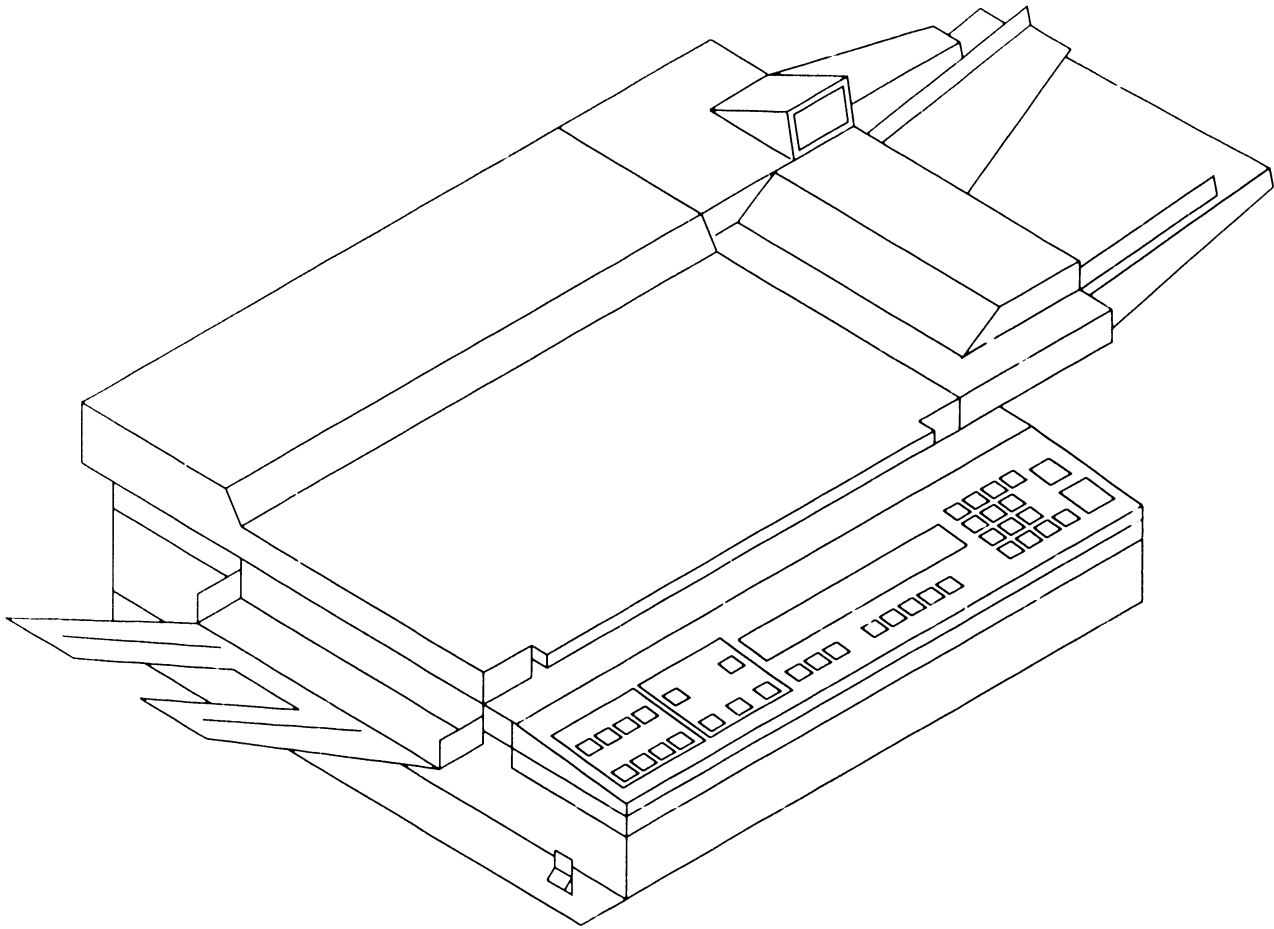


● END

IDENTIFICATION

2.1 Small WIIS Major Assemblies

2.1.7 Scanner and Optional Document Feeder (WIIS-INPUT-02)



● END

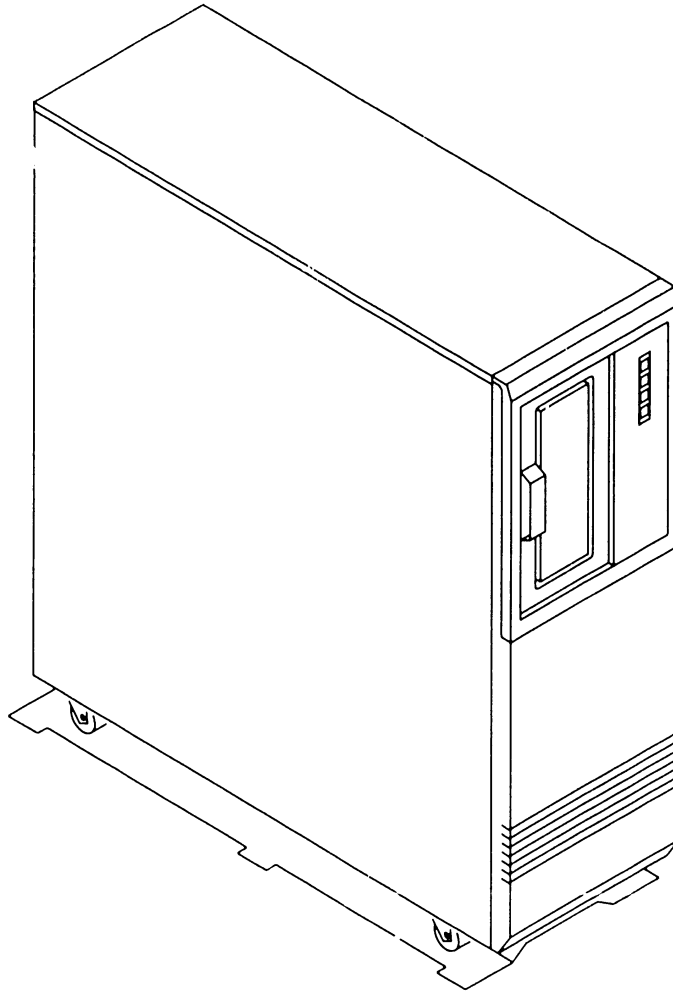
2.1 Small WIIS Major Assemblies

IDENTIFICATION

2.1.8 Small Data Storage Cabinet

NOTE

The Small Data Storage Cabinet is available as a Small WIIS option.



● END

2.2 Large WIIS Major Assemblies

IDENTIFICATION

(TO BE SUPPLIED)

● END

SECTION

3

CONTROLS AND

INDICATORS

SECTION 3 CONTENTS

SECTION 3 CONTROLS AND INDICATORS

	<u>Page</u>
3.1 SMALL WIIS PERIPHERALS	3-1
3.2 LARGE WIIS PERIPHERALS	3-2

3.1 CONTROLS AND INDICATORS

Small WIIS Peripherals

Information concerning operator controls, operator indicators, service controls, and service indicators for each peripheral of the Small WIIS is located in the related documentation for that peripheral (►1.3.1).

◆ END

3.2 CONTROLS AND INDICATORS

Large WIIS Peripherals

Information concerning operator controls, operator indicators, service controls, and service indicators for each peripheral of the Large WIIS is located in the related documentation for that peripheral (►1.3.2).

● END

SECTION

4

OPERATION

SECTION 4 CONTENTS

SECTION 4 OPERATION

	<u>Page</u>
4.1 SMALL WIIS	4-1
4.1.1 Power-Up Procedure	4-1
4.1.2 WIIS Image System Shutdown	4-2
4.1.3 VS-5/VS-6 System Power Down Procedure	4-3
4.1.4 Emergency System Power-Down Procedure	4-4
4.2 LARGE WIIS	4-5
4.2.1 Power-Up Procedure	4-5
4.2.2 Power-Down Procedure	4-6

4.1 Small WIIS

4.1.1 Power-Up Procedure

NOTE

The power-up procedure for each Small WIIS peripheral is found in the related manual for that peripheral (► 1.3.1)

- 1 Inform the System Administrator that the Small WIIS is to be powered up.
- 2 Power up all optical disk drives.
- 3 Power up WSO.
- 4 Power up small data storage cabinet.
- 5 Power up VS-5/VS-6.
- 6 Spin up NEC 150Mb system drive (volume).
- 7 At WSO, IPL from NEC 150Mb drive.
- 8 Power up system printer(s).
- 9 Power up scanner.
- 10 Power up all workstations.
- 11 Power up all remaining peripherals.

● END

4.1 Small WIIS

4.1.2 WIIS Image System Shutdown

Use this procedure to shut down only the WIIS image system without powering down the VS-5/VS-6.

- 1 Inform the System Administrator that the WIIS Image System is to be shut down.
- 2 Using @IOPER@ from the Image Operators Console:
 - a. Dismount all optical disk volumes.
 - b. Detach optical disk drives.
- 3 Inform all operators of shutdown.
- 4 From WANG VS IMAGE OPERATORS CONSOLE screen:
 - a. Press SYSTEM Options (PF14).
 - b. Press Shutdown IMAGE SYSTEM (PF5).

● END

4.1 Small WIIS

4.1.3 VS-5/VS-6 System Power Down Procedure

Use this procedure to power down the entire VS-5/VS-6 System.

NOTE

The power-down procedure for each Small WIIS peripheral is found in the related manual for that peripheral (►1.3.1)

- 1 Inform the System Administrator that the VS-5/VS-6 is to be powered down.
- 2 Shutdown the WIIS Image System (►4.1.2).
- 3 Power down optical drives.
- 4 Power down all workstations.
- 5 Power down scanner.
- 6 Power down all printers.
- 7 Spin down NEC system drive.
- 8 Power down SDS cabinet.
- 9 Power down WSO and the VS-5/VS-6 per instructions in section 4 of the VS-5/VS-6 manual (►1.3.1).

● END

4.1 Small WIIS

4.1.4 Emergency System Power-Down Procedure

NOTE

Pressing the VS-5/VS-6 Control Mode button (green) prevents any disk I/O command in process from being halted prior to completion and also prevents possible damage to any disk VTOC.

- 1 At the VS-5/VS-6, press the green Control Mode button.
- 2 a. If time permits, power-down the VS-5/VS-6 System (▶4.1.3).
b. If not, press the black DC Power button to disable dc power to the VS-5/VS-6.
- 3 Disconnect the VS-5/VS-6 ac power cord from outlet.
- 4 Disconnect all peripheral ac power cords from outlets.

● END

4.2 Large WIIS

4.2.1 Power-Up Procedure

(TO BE SUPPLIED)

● END

4.2 Large WIIS

4.2.2 Power-Down Procedure

(TO BE SUPPLIED)

● END

SECTION

5

**PREVENTIVE
MAINTENANCE**

SECTION 5 CONTENTS

SECTION 5 PREVENTIVE MAINTENANCE

	<u>Page</u>
5.1 SMALL WIIS	5-1
5.2 LARGE WIIS	5-2

5.1 PREVENTIVE MAINTENANCE

Small WIIS

System Maintenance

As a system, the small WIIS does not require any scheduled preventive maintenance other than running the Optical Disk Exerciser (▶6.1.3) and comparing the present error log with previous readings to determine if any optical or magnetic disk degradation or errors have occurred. The Optical Disk Exerciser should be run each time the CE performs a service call.

Peripheral Maintenance

Some individual peripherals comprising the Small WIIS do require preventive maintenance as specified in the related documentation for those peripherals (▶1.3.1). Of particular concern are the Optical Disk Drive and the Scanner/optional Automatic Document Feeder.

The Optical Disk Drive requires periodic inspection of the front panel air filter and the laser disk media for cleanliness from dust particles (▶1.3.1).

The Scanner requires periodic cleaning of the glass surface. The optional Document Feeder also requires some periodic cleaning (▶1.3.1).

● END

5.2 PREVENTIVE MAINTENANCE

Large WIIS

(TO BE SUPPLIED)

● END

SECTION

6

TROUBLESHOOTING

SECTION 6 CONTENTS

SECTION 6 TROUBLESHOOTING

	<u>Page</u>
6.1 SMALL WIIS	6-1
6.1.1 Tools and Equipment	6-1
6.1.2 Troubleshooting Flowchart	6-2
6.1.3 Optical Disk Exerciser	6-3
6.2 LARGE WIIS	6-10

6.1 Small WIIS

6.1.1 Tools and Equipment

Tools and equipment required to troubleshoot the small WIIS include a standard CE Tool Kit and a Fluke DVM (or equivalent).

NOTE

Additional tools and equipment may be required to troubleshoot certain WIIS peripherals (► 1.3.1).

◆ END

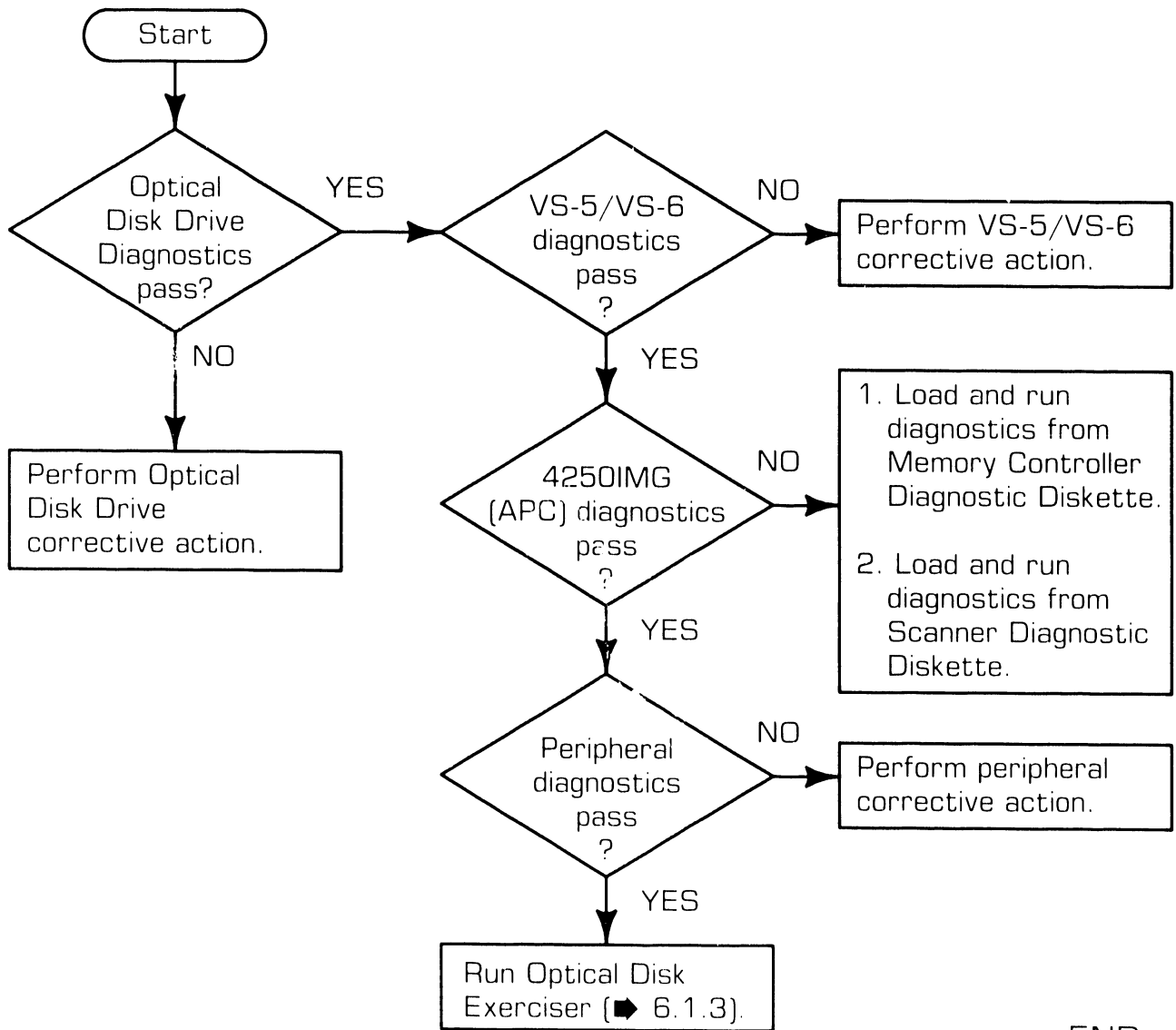
6.1 Small WIIS

TROUBLESHOOTING

6.1.2 Troubleshooting Flowchart

NOTE

Troubleshooting procedures for each Small WIIS peripheral are detailed in the related manual for that peripheral (► 1.3.1).



6.1 Small WIIS

6.1.3 Optical Disk Exerciser (Sheet 1 of 7)

Overview

The Optical Disk Exerciser (ODEXER) allows the CE or Analyst to check out various WIIS functions without noticeable interruption to system operation. This is accomplished by interfacing with the WIIS software so that the test display console appears to the system as another imaging console device. The exerciser runs as a separate program but communicates with WIIS software to accomplish specific tasks.

In the Small WIIS, the exerciser requests image transfers and monitors error results. This Video Quality Test creates test files to be stored on optical laser disk. The data can then be retrieved at regular intervals (or service calls), displayed, and analyzed for integrity by comparison with previous readings to define errors in the present log.

Data Pattern

ODEXER writes a specific data pattern to the optical or magnetic disk, reads the data back, and generates an error log to note any discrepancies between data written and data retrieved.

►NEXT

6.1 Small WIIS

6.1.3 Optical Disk Exerciser (Sheet 2 of 7)

Software Required

- 1 WIIS Optical Disk Exerciser (195-5851-E) which includes Program Diskette (732-6011) and Documentation (760-1614).
- 2 Latest SRN's describing any changes to ODEXER.

Loading Procedure

NOTE

Refer to Document 760-1614 for the most recent ODEXER loading procedure.

- 1 Load ODEXER diskette into VS-6 floppy disk drive.
- 2 Select "Run Program or Procedure" from VS Task Selection screen.
- 3 Enter following requests:

PROGRAM = ODEXER
LIBRARY = @SYSTEM@
VOLUME = FLOPPY
- 4 Press RETURN.

NOTE

ODEXER will display various functions for selection by appropriate PF keys. Screens requiring additional information will display highlighted default values.

- 5 Select functions by typing over existing default information.

➡NEXT

6.1 Small WIIS

TROUBLESHOOTING

6.1.3 Optical Disk Exerciser (Sheet 3 of 7)

ODEXER Entry

Enter SELECT = DIAG to continue from this screen or press PF16 to EXIT program.

This diagnostic program enables a USER to test WIIS peripherals using DIAGNOSTIC DATA file.

The USER will NOT be able to access the CUSTOMER DATA BASE

PLEASE ENTER PASSWORD

SELECT = -----

Press PF 16 to Exit Utility

Task Selection Screen

Press appropriate PF key to select task or press PF16 to EXIT program.

USE PF KEYS TO SELECT AN OPTION
USING THE PF KEYS

- | | |
|------------------------------|--------------------|
| (1) Diagnostic Task | (3) System Status |
| (2) Run Program or Procedure | (4) WIIS error log |
| (5) Diagnostic error log | |

PLEASE MAKE A SELECTION

PRESS PF 16 to EXIT PROGRAM

▶NEXT

6.1 Small WIIS

6.1.3 Optical Disk Exerciser (Sheet 4 of 7)

PF1 Volume Selection

1 Press PF1 and observe screen.

2 Enter following data for each VOLUME:

VOLUME name
Type of Disk (Magnetic/Optical)
Pass Mode Type (Continuous/Single)

NOTE

Use the same pass mode for all volumes if more than one is selected

Press RETURN

3 Repeat step 2 until all VOLUME names are entered.

4 Enter a blank volume (VOLUME=_____).

5 Press RETURN to run diagnostic.

```
Input Disk type [MAG/OPT] Type = MAG
Pass Mode type [CON/SIN] mode = SIN
```

```
PLEASE ENTER VOLUME NAME
OF THE OPTICAL DISK TO TEST
```

```
VOLUME = _____
```

```
Press PF 16 to EXIT PROGRAM
```

➡NEXT

6.1 Small WIIS

TROUBLESHOOTING

6.1.3 Optical Disk Exerciser (Sheet 5 of 7)

PF1 Volume Selection (Cont'd)

- 6 a. If the test pattern file already exists on the selected volume, the following message will appear:

```
Volume is VOLNAME (example "SYSTEM")
Attempting to read Magnetic File on VOLNAME ("SYSTEM")
Finished reading SYSTEM.@DIAGON@.TSTPAT
Analyzing File on Volume SYSTEM
TOTAL - Expected 1900800      Rec. 1900800   Diff. 0.00
AVERAGE - Expected 1100.00  Rec. 1100.00  Diff. 0.00
PERCENT - Expected 100.00   Rec. 100.00   Diff. 0.00
```

- 6 b. If the test pattern file does not exist on the selected volume, the following message will appear:

```
Volume is SYSTEM
Attempting to read Magnetic File on SYSTEM
Failed magnetic file read
Attempting to create file
Finished reading WIIS.@DIAGON@.TSTPAT
Analyzing File on Volume SYSTEM
```

- 7 a. If Single-Pass mode was selected,
Press RETURN to access Task Selection screen
Press PF5 to access Diagnostic Error Log.
- 7 b. If Continuous-Pass mode was selected,
Observe screen for "Press PF16 to Abort Looping".
Within four seconds, press PF16 several times.
Press PF5 to access Diagnostic Error Log.

➡ NEXT

6.1 Small WIIS

6.1.3 Optical Disk Exerciser (Sheet 6 of 7)

PF2 Run Program or Procedure

- 1 Enter the name of an alternate program to be run on ODEXER:

PROGRAM = _____
LIBRARY = _____
VOLUME = _____

- 2 Press RETURN to run the selected program.

PF3 System Status

System Status is an optional program used to run the System Activity Monitor (SAM) on the Small WIIS. This program is supplied with its own documentation and is selected by pressing PF3. Systems without the program will display PF3 without any accompanying identification.

PF4 WIIS Error Analysis

The WIIS Error Analysis program provides information and printout of Task and Hardware errors that occur during WIIS operations.

➡ NEXT

6.1 Small WIIS

TROUBLESHOOTING

6.1.3 Optical Disk Exerciser (Sheet 7 of 7)

PF5 Diagnostic Error Log

This selection allows the operator to display the error log file "SYSVOL". @DIAGON@.OPTERR by utilizing the VS DISPLAY utility. All errors that have occurred in ODEXER storage and retrieval operations are displayed for evaluation. The log may be deleted via file utilities available from the VS Task Selection screen.

The following is a representation of the file and how it should be analyzed at the end of each Volume Data File analysis.

<u>GOOD</u>		
TOTAL - Expected 1900800	Rec. 1900800	Diff. 0.00
AVERAGE - Expected 1100.00	Rec. 1100.00	Diff. 0.00
PERCENT - Expected 100.00	Rec. 100.00	Diff. 0.00
<u>WARNING - POSSIBLE FILE DEGREDATION</u>		
TOTAL - Expected 1900800	Rec. 1900450	Diff. -350.00
AVERAGE - Expected 1100.00	Rec. 1100.00	Diff. 0.00
PERCENT - Expected 100.00	Rec. 100.00	Diff. 0.00
<u>FAILURE - FILE DEGREDATION</u>		
TOTAL - Expected 1900800	Rec. 0700450	Diff. -1200350.00
AVERAGE - Expected 1100.00	Rec. 0400.00	Diff. -700.00
PERCENT - Expected 100.00	Rec. 004.00	Diff. -96.00

● END

6.2 Large WIIS

TROUBLESHOOTING

(TO BE SUPPLIED)

● END

SECTION

7

REPAIR

SECTION 7 CONTENTS

SECTION 7

REPAIR

	<u>Page</u>
7.1 SMALL WIIS	7-1
7.2 LARGE WIIS	7-2

7.1 Small WIIS

REPAIR

Repair procedures for each of the peripherals comprising the Small WIIS are found in the related documentation for that peripheral (▶1.3.1).

◆ END

7.2 Large WIIS

REPAIR

Repair procedures for each of the peripherals comprising the large WIIS are found in the related documentation for that peripheral (►1.3.2).

● END

SECTION

8

ADJUSTMENTS

SECTION 8 CONTENTS

SECTION 8 ADJUSTMENTS

	<u>Page</u>
8.1 SMALL WIIS	8-1
8.2 LARGE WIIS	8-2

8.1 Small WIIS

As a system, the Small WIIS does not require any adjustments; however, some of the individual peripherals comprising the Small WIIS may require adjustment as specified in the related documentation for that peripheral (▶ 1.3.1)

● END

8.2 Large WIIS

ADJUSTMENTS

(TO BE SUPPLIED)

● END

SECTION

9

UNPACKING

AND

SETUP

SECTION 9 CONTENTS

SECTION 9 UNPACKING AND SETUP

	<u>Page</u>
9.1	INSTALLATION SITE CHECK 9-1
9.2	TOOLS, EQUIPMENT, AND DOCUMENTATION 9-2
9.3	UNPACKING PROCEDURES 9-3
9.4	SMALL WIIS INSTALLATION 9-4
9.4.1	Switch and Jumper Settings 9-4
9.4.2	Overall System Connection 9-5
9.4.3	Small Data Storage Cabinet Connection 9-6
9.4.4	Optical Disk Drive Connection 9-7
9.4.5	VS DP/WP Workstation Connection 9-9
9.4.6	LIS-12/LIS-24 Laser Imaging System Connection 9-10
9.4.7	LCS-15 Laser Composition System Connection 9-14
9.4.8	VS-6 to 4250IMG WS Connection 9-15
9.4.9	Thermal Printer Connection 9-17
9.4.10	12-Inch Imaging WS Connection 9-18
9.4.11	16-Inch Imaging WS Connection 9-20
9.4.12	Scanner Connection 9-21
9.4.13	Initial Power-Up and Voltage Check 9-22
9.4.14	Preliminary Software Installation 9-23
9.4.15	VSOS Software Installation 9-24
9.4.16	PACE Software Installation 9-32
9.4.17	WIIS Software Installation 9-39
9.5	LARGE WIIS INSTALLATION 9-46

9.1 UNPACKING AND SETUP

Installation Site Check

General

Proper equipment location and site preparation are important for reliable operation of small and large WIIS. Actual installation should not begin until all site requirements detailed in the Customer Site Planning Guide (742-5978) have been met.

Small WIIS Optical Disk Drive Cabling

Small WIIS Optical Disk Drive SCSI cable length must be considered when planning the physical location of the VS-5/VS-6 and up to four Optical Disk Drives.

The SCSI single-ended specification allows a maximum bus length of 6 meters (20 feet). Of this, the VS-5/VS-6 uses 5 feet internally (regardless of how many internal drives are attached). Each Optical Disk Drive configured uses another 2 feet internally.

Each Optical Disk Drive is shipped with a 5-foot cable (421-0066) and a 1-foot cable (220-3621). The 5-foot cable connects from the VS-5/VS-6 SCSI port to the first drive and the 1-foot cable daisy-chains to the next drive (if using more than one). Daisy-chained drives must be stacked vertically.

● END

9.2 UNPACKING AND SETUP

Tools, Equipment, and Documentation

- Standard Wang CE Tool Kit
(726-9401)
- Fluke DVM (or equivalent)
- Small WIS Related Documentation
Package (▶ 1.3.1)
- Large WIS Related Documentation
Package (▶ 1.3.2)

◆ END

9.3 UNPACKING AND SETUP

9.3 Unpacking Procedures

Unpacking procedures for each peripheral of the Small WIIS are detailed in the related manual for that peripheral (▶1.3.1).

Unpacking procedures for each peripheral of the Large WIIS are detailed in the related manual for that peripheral (▶1.3.2).

◆ END

9.4 UNPACKING AND SETUP

Small WIS Installation

9.4.1 Switch and Jumper Settings

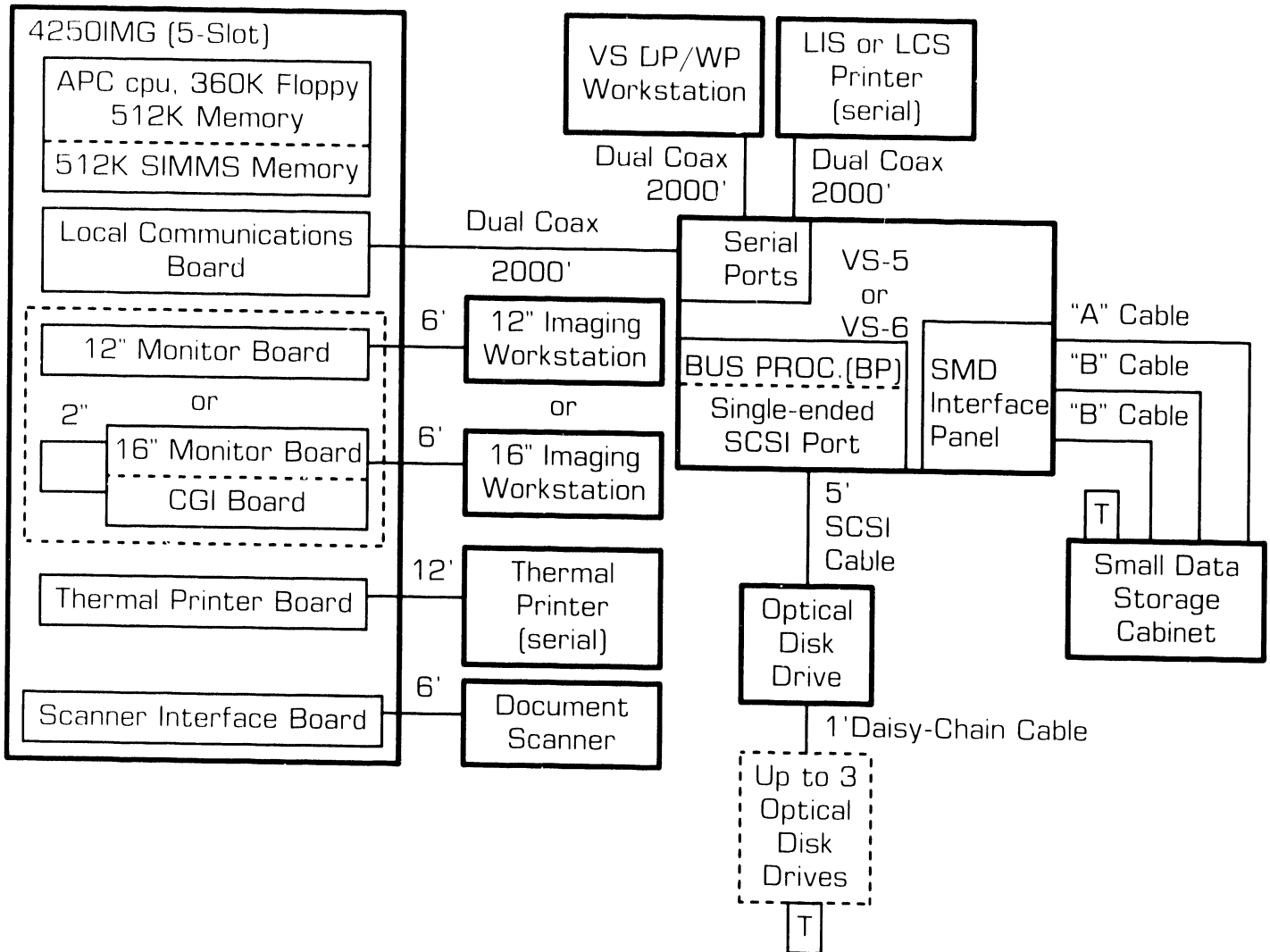
Any required switch and jumper settings for each peripheral of the Small WIS are detailed in the related documentation for that peripheral (► 1.3.1)

● END

9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

9.4.2 Overall System Connection



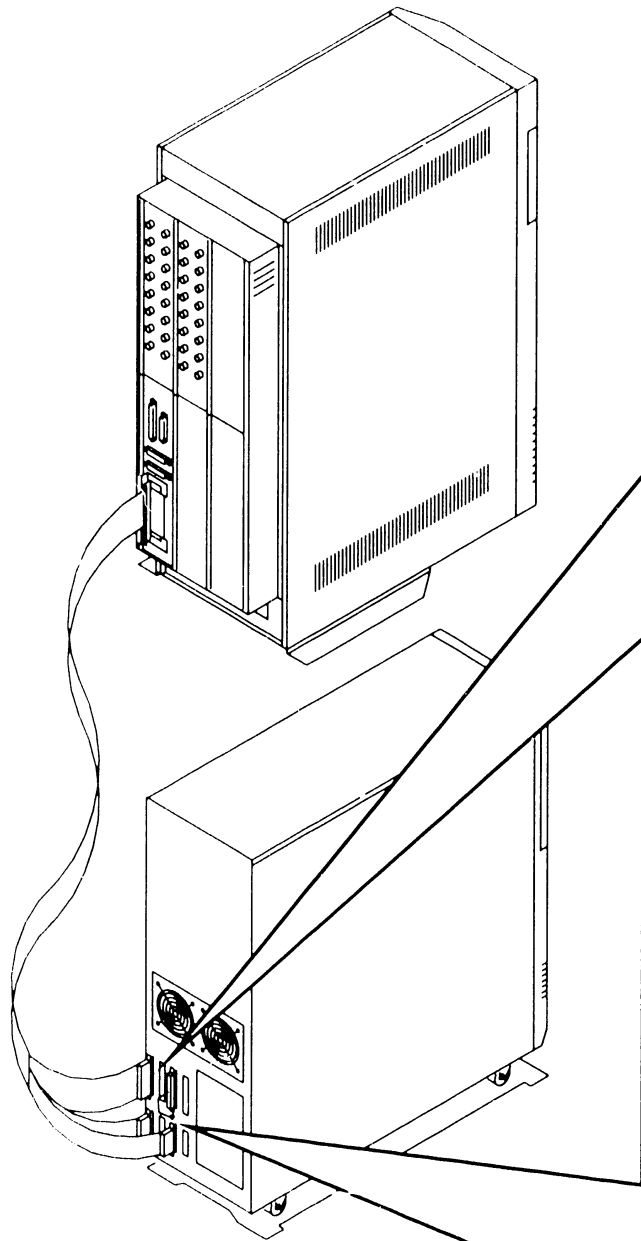
● END

9.4 UNPACKING AND SETUP

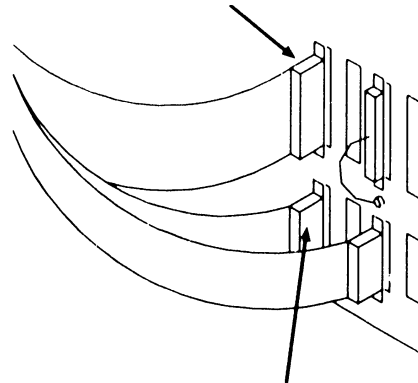
9.4 Small WIIS Installation

9.4.3 Small Data Storage Cabinet Connection

- 1 Connect and dress external disk drive cables as specified in section 9 of VS5/VS6 manual (▶ 1.3.1).

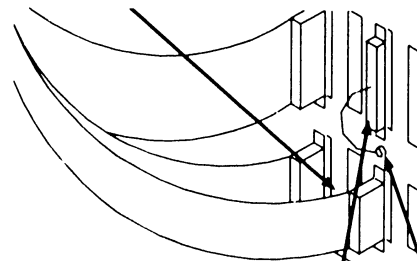


- 2 Connect "A" cable to DISK 0, DUAL PORT connector.



- 3 Connect "B" cable from VS6 upper connector to DISK 0 connector.

- 4 Connect "B" cable from VS6 lower connector to DISK 1 connector.



- 5 Install terminator into DISK 1 connector.

- 6 Connect lead from terminator to chassis ground tab.

● END

9.4 UNPACKING AND SETUP

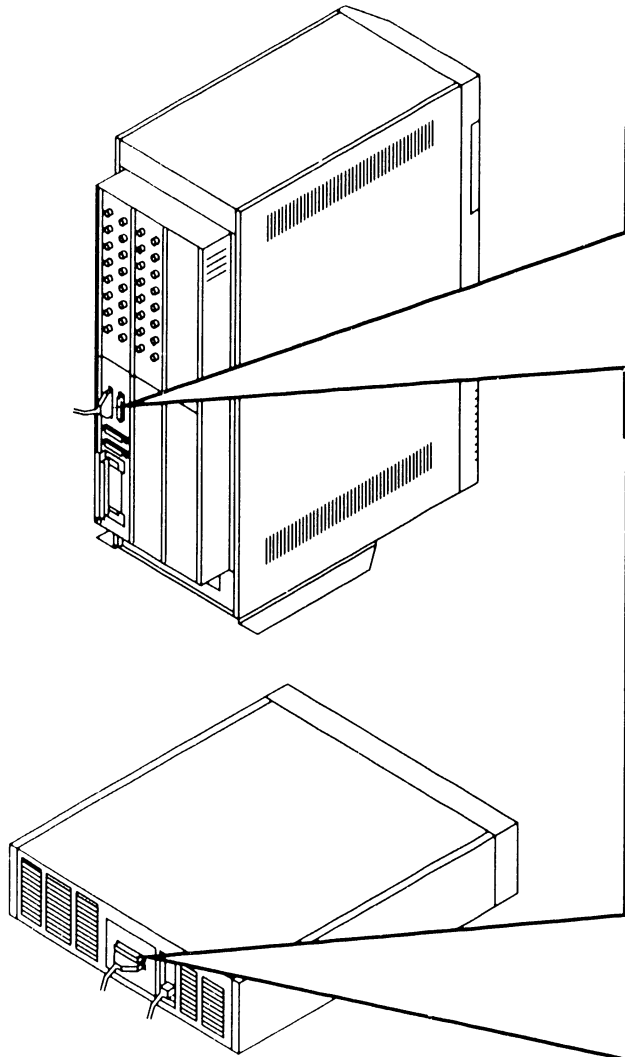
9.4 Small WIIS Installation

9.4.4 Optical Disk Drive Connection (Sheet 1 of 2)

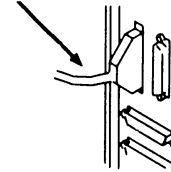
- 1 Install drive(s) per guidelines (➡9.1).

NOTE

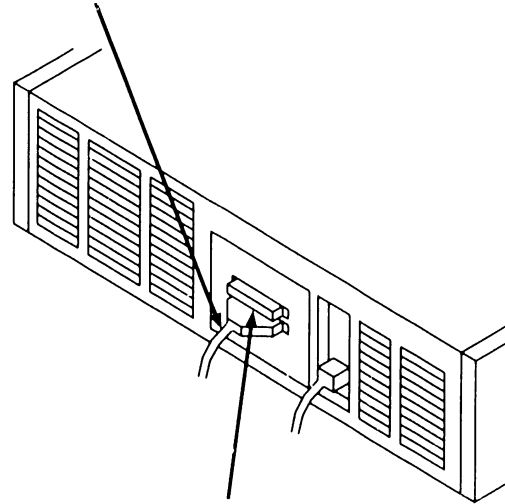
For single drive installations, perform steps 2, 3, and 4. For multiple drive installations, perform steps 2, 3, 5, 6, and 7.



- 2 Remove terminator. Connect one end of cable to SCSI connector on VS-6.



- 3 Connect other end of cable to optical disk drive.



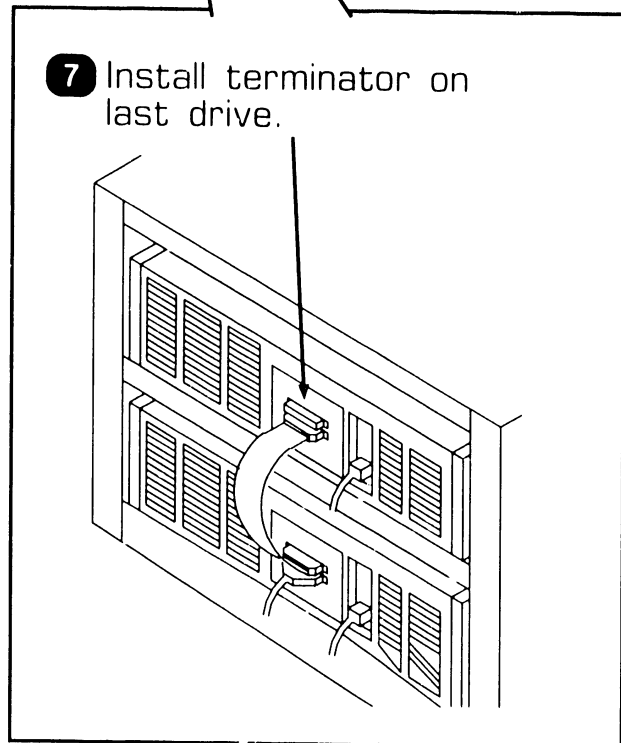
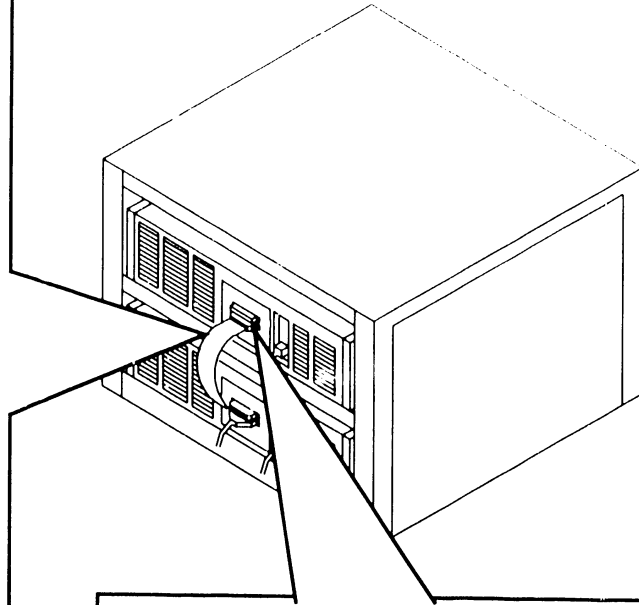
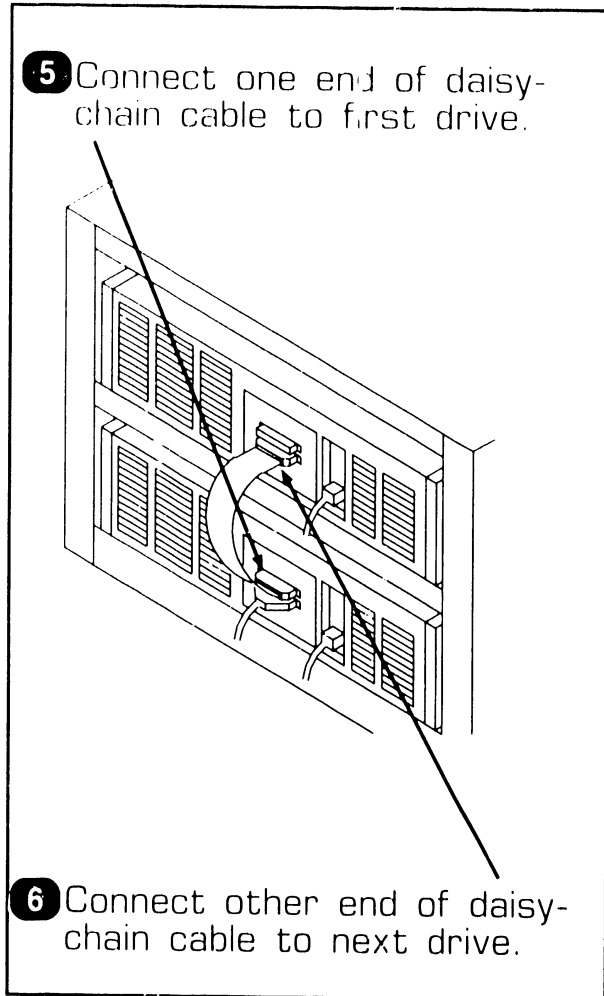
- 4 Install terminator to complete installation of single drive.

➡NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.4 Optical Disk Drive Connection (Sheet 2 of 2)



NOTE

Up to four drives may be daisy-chained in the Small WIIS.

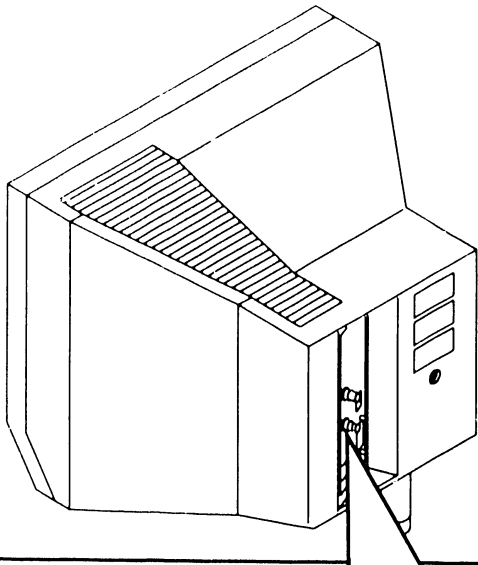
● END

9.4 UNPACKING AND SETUP

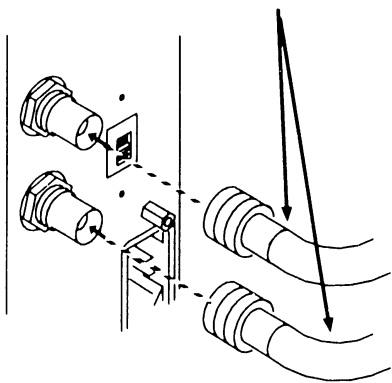
9.4 Small WIIS Installation

9.4.5 VS DP/WP Workstation Connection

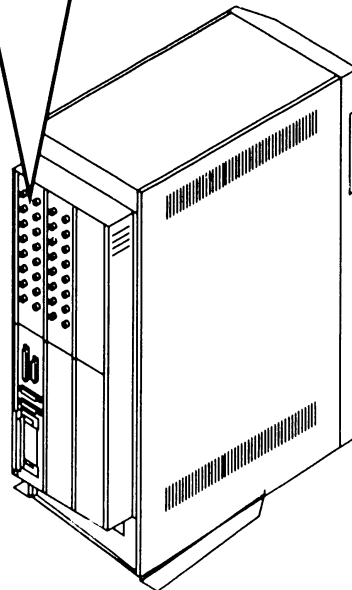
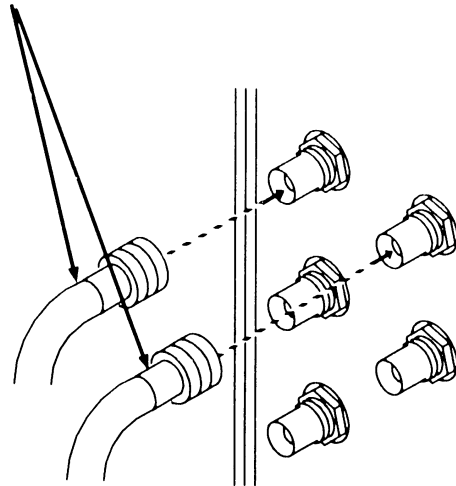
- 1 Connect workstation components (keyboard, etc) per referenced documentation for your particular workstation (► 1.3.1).



- 2 Connect cable to BNC/TNC connectors on workstation.



- 3 Connect other end of cable to BNC/TNC connectors on VS-6.

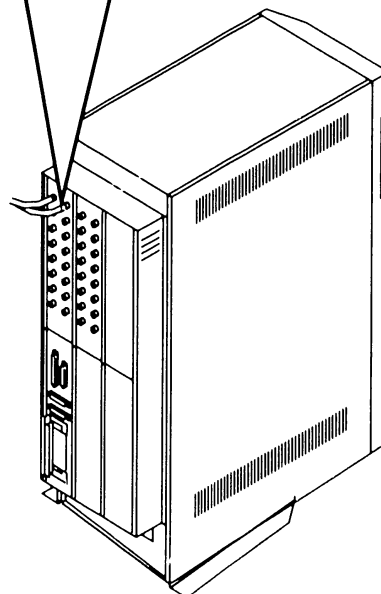
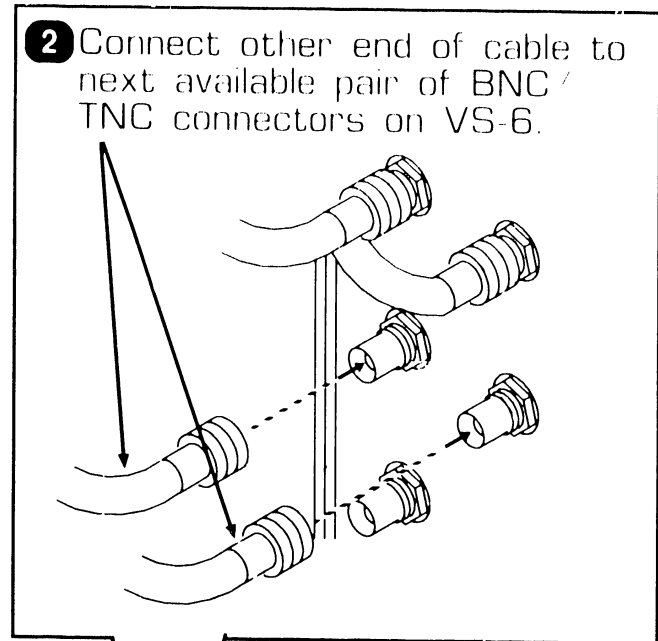
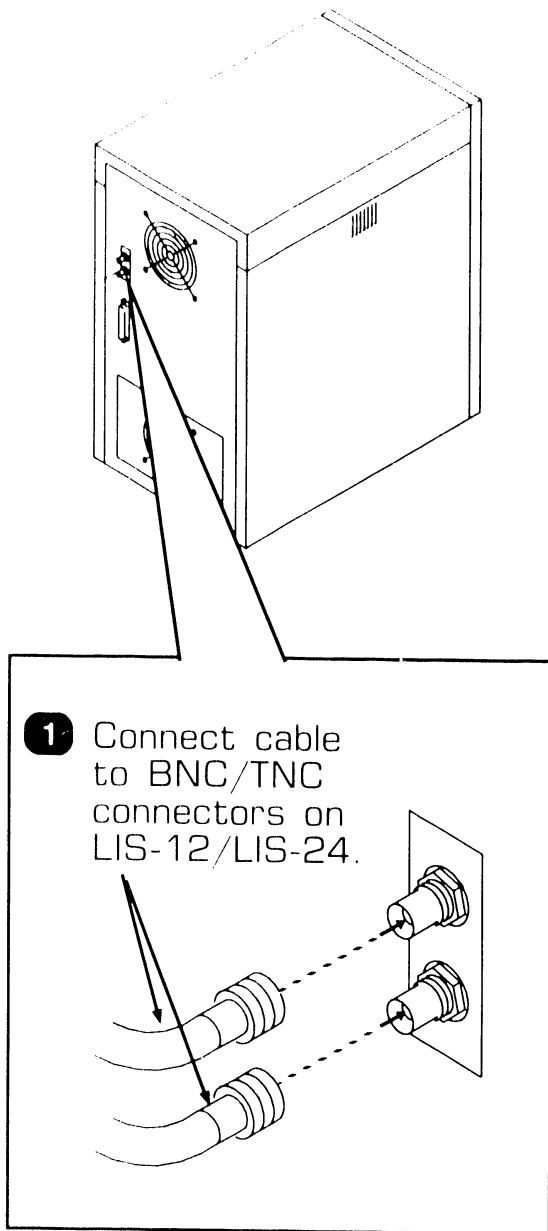


◆ END

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.6 LIS-12/LIS-24 Laser Imaging System Connection (Sheet 1 of 4)



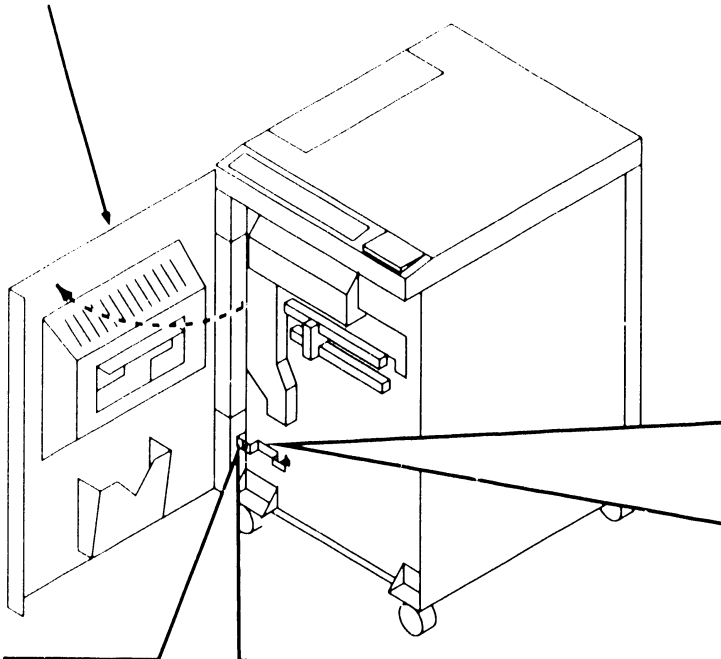
➡ NEXT

9.4 UNPACKING AND SETUP

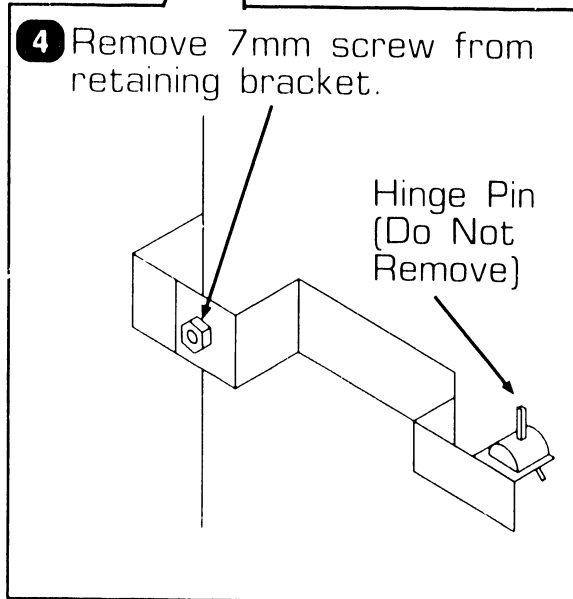
9.4 Small WIS Installation

9.4.6 LIS-12/LIS-24 Laser Imaging System Connection (Sheet 2 of 4)

- 3** Swing open door on LPS-12 LPS-24.



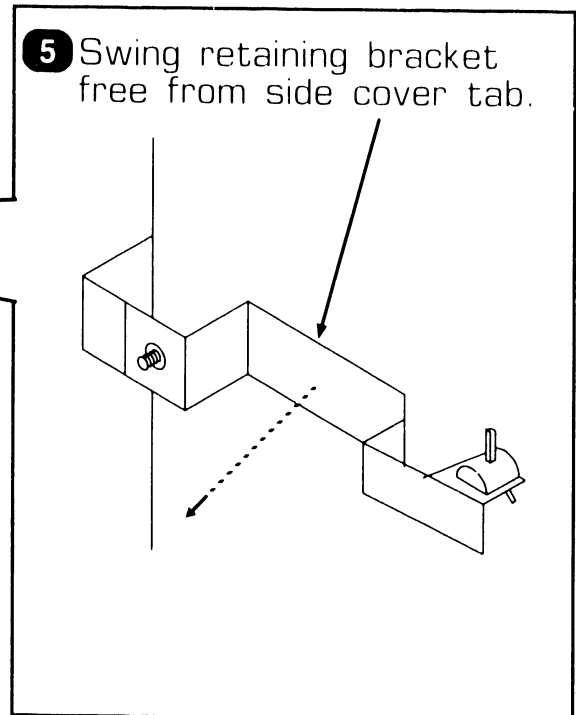
- 4** Remove 7mm screw from retaining bracket.



CAUTION

Do not remove hinge pin from retaining bracket.

- 5** Swing retaining bracket free from side cover tab.

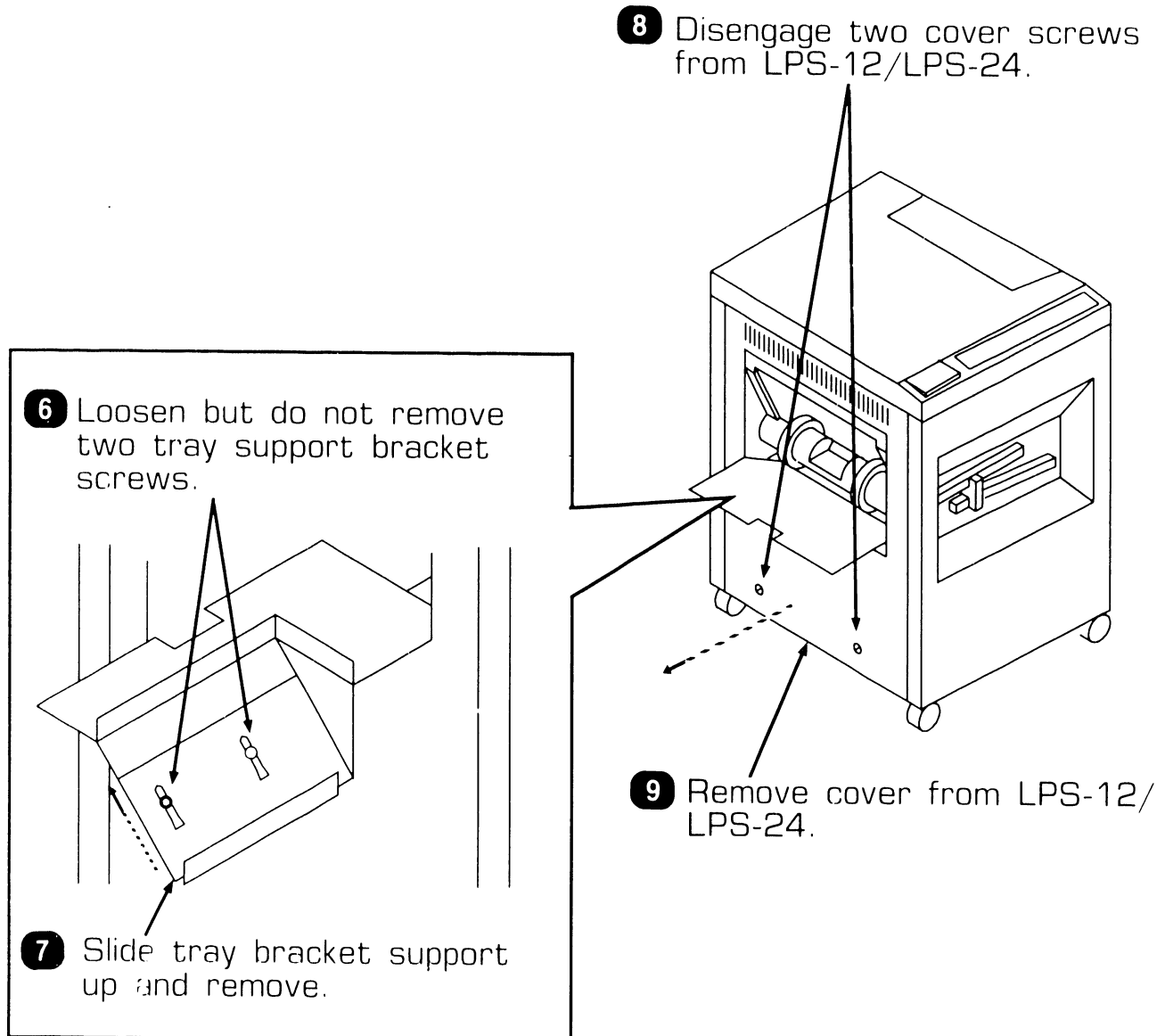


▶ NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

9.4.6 LIS-12/LIS-24 Laser Imaging System Connection (Sheet 3 of 4)

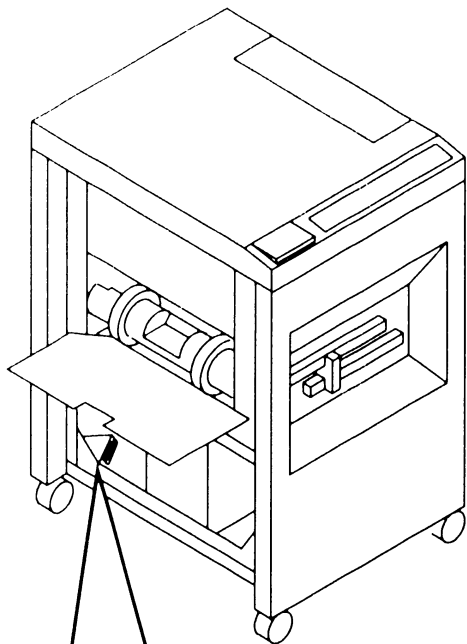


►NEXT

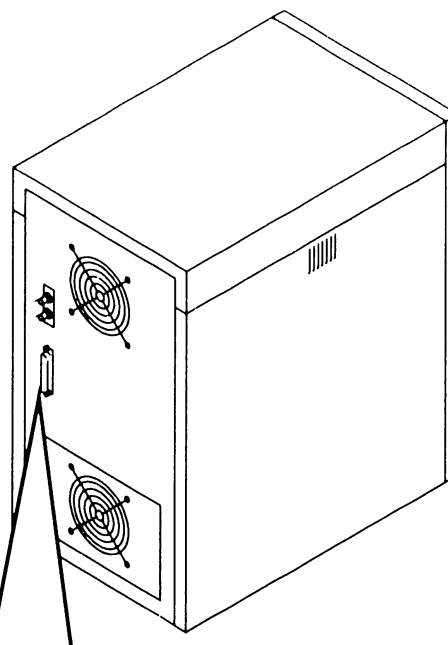
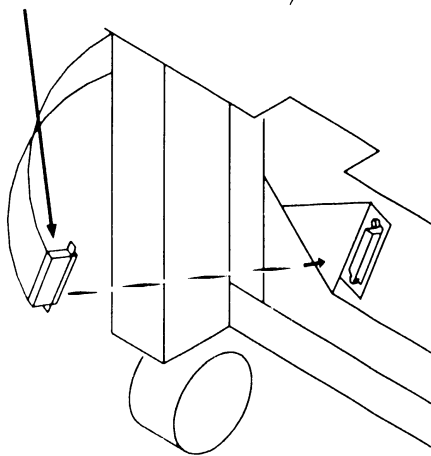
9.4 UNPACKING AND SETUP

Small WIIS Installation

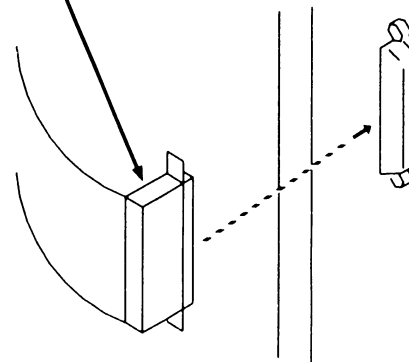
9.4.6 LIS-12/LIS-24 Laser Imaging System Connection (Sheet 4 of 4)



10 Connect printer cable to J43 on LPS-12/LPS-24.



11 Connect other end of printer cable to LIS-12/LIS-24.

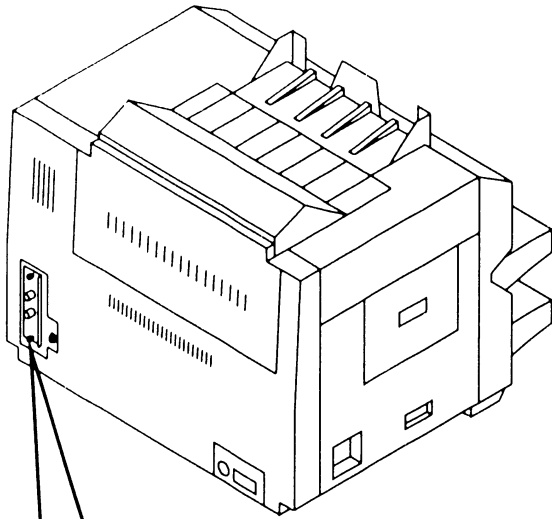


● END

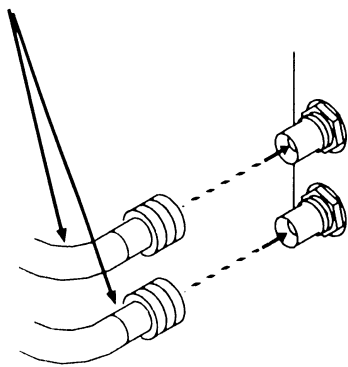
9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

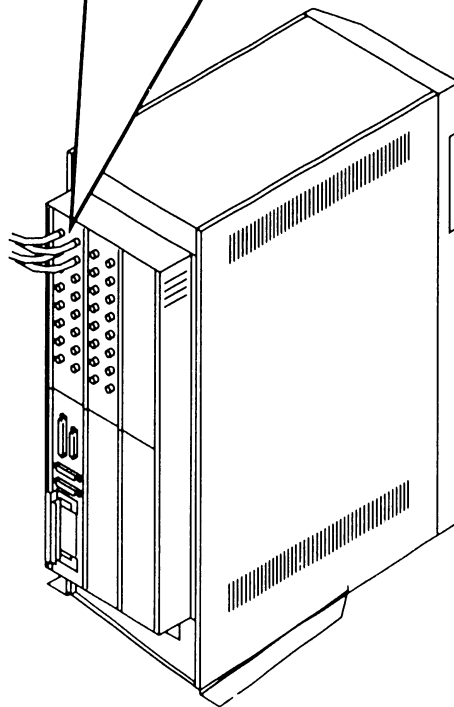
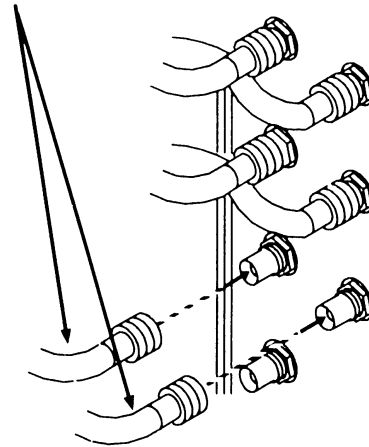
9.4.7 LCS-15 Laser Composition System Connection



- 1** Connect cable to BNC/TNC connectors on LCS-15.



- 2** Connect other end of cable to next available pair of BNC/TNC connectors on VS-6.

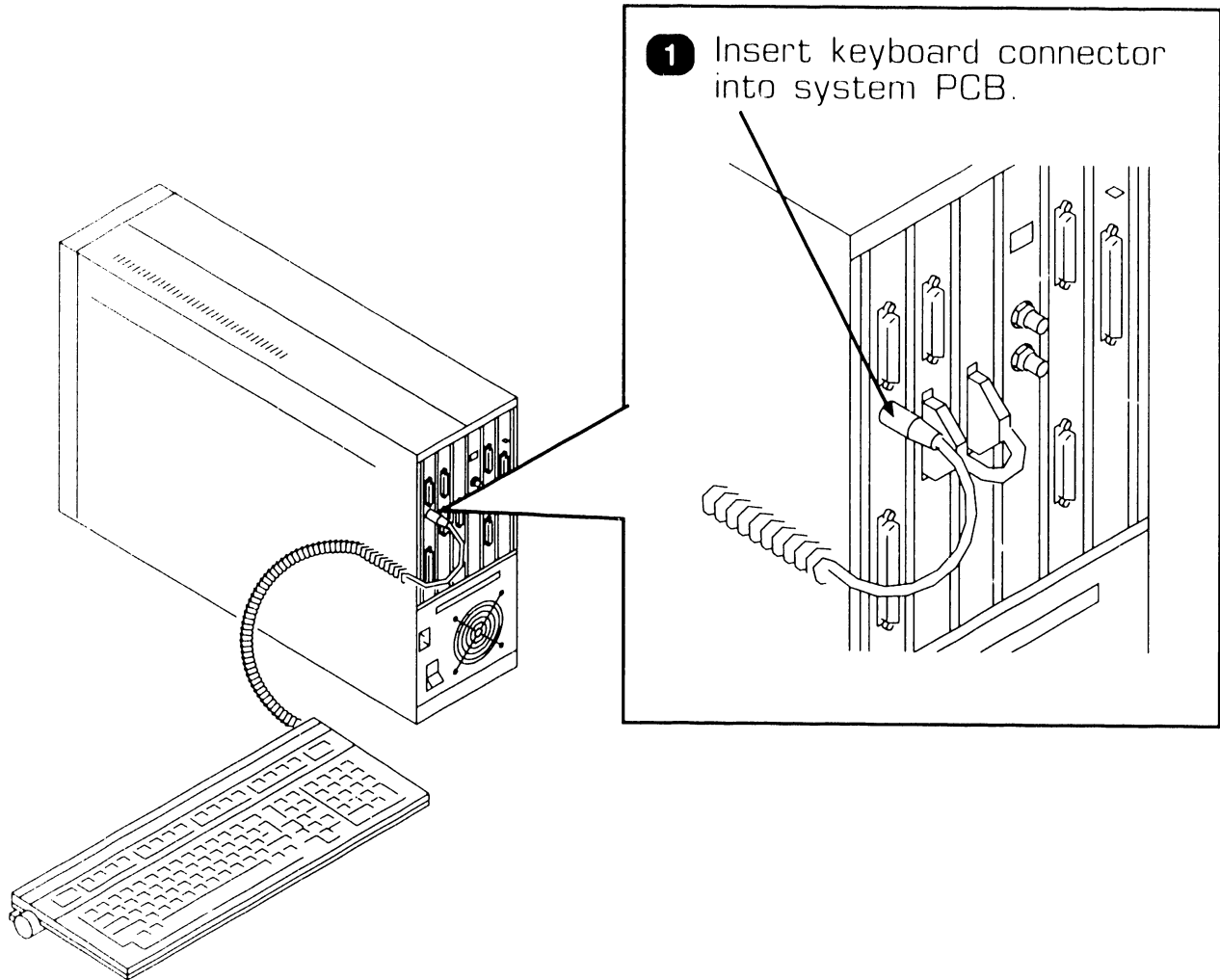


● END

9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

9.4.8 VS-6 to 4250IMG WS Connection (Sheet 1 of 2)

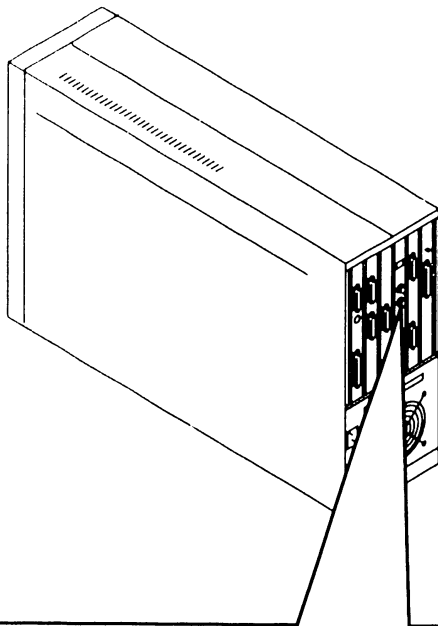


➡ NEXT

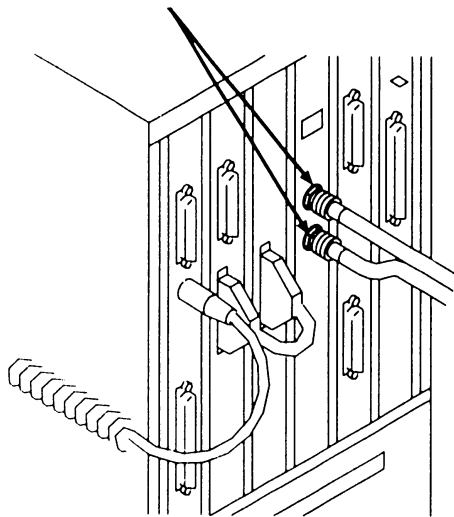
9.4 UNPACKING AND SETUP

9.4 Small WISS Installation

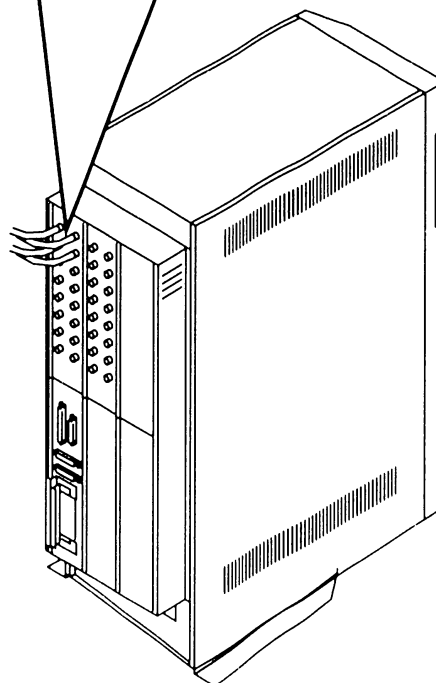
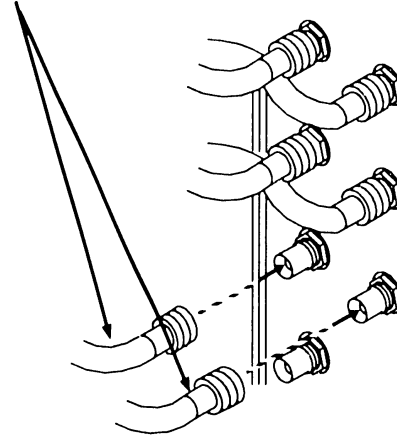
9.4.8 VS-6 to 4250IMG WS Connection (Sheet 2 of 2)



2 Connect system cable to BNC/TNC connectors on LCO PCB.



3 Connect other end of system cable to next available BNC/TNC connector pair on VS-6.

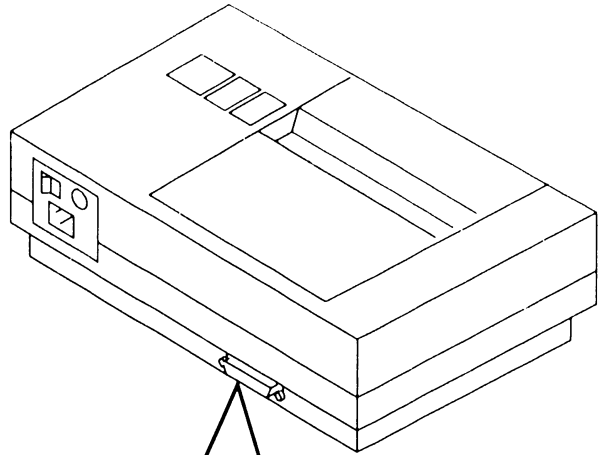
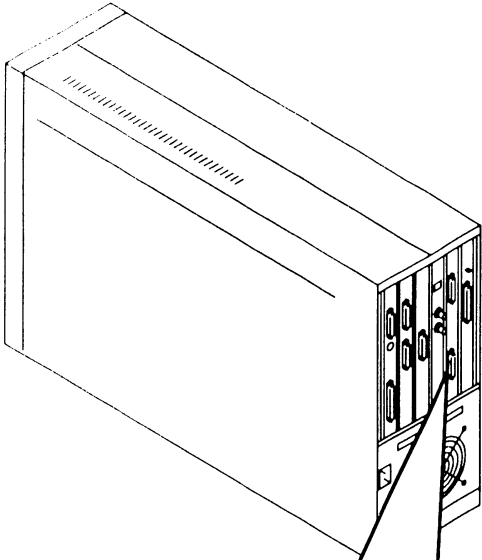


● END

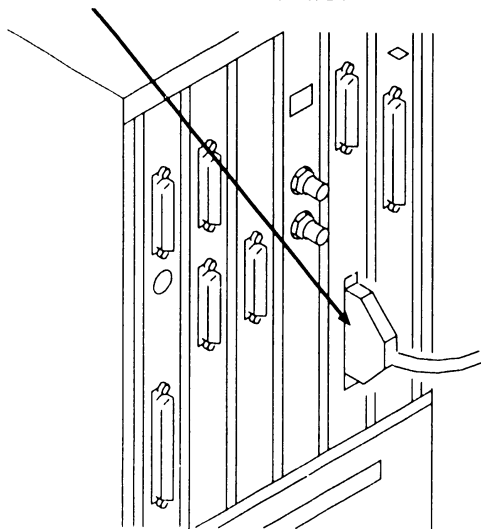
9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

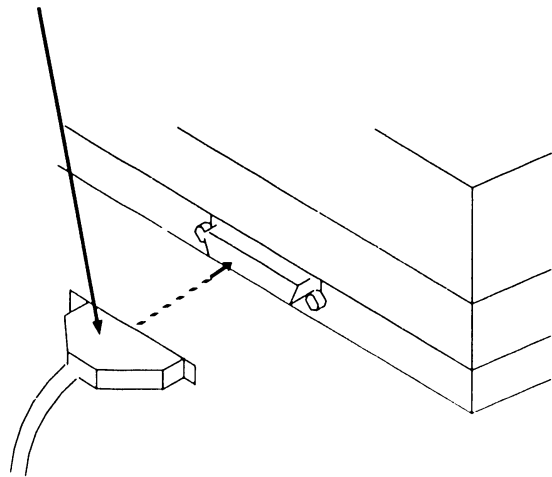
9.4.9 Thermal Printer Connection



- 1 Connect printer interface cable to thermal printer board in 4520IMG Electronics Unit.



- 2 Connect other end of cable to thermal printer.

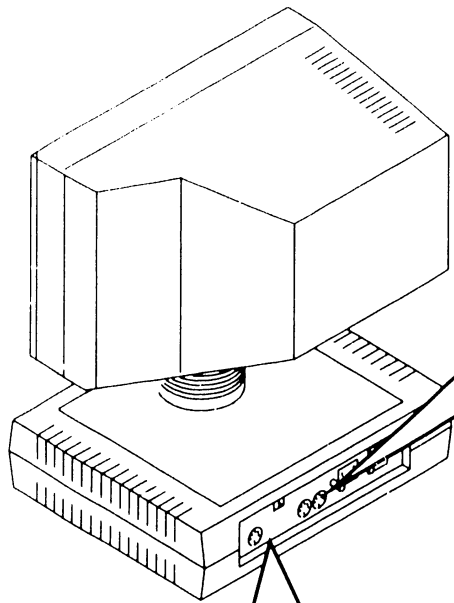


● END

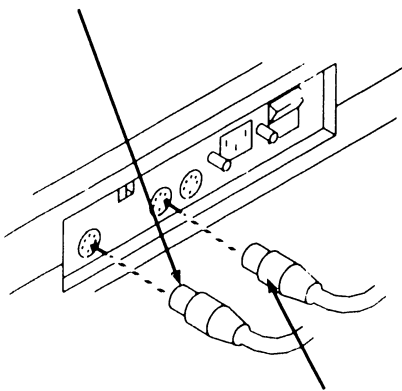
9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

9.4.10 12-Inch Imaging WS Connection (Sheet 1 of 2)

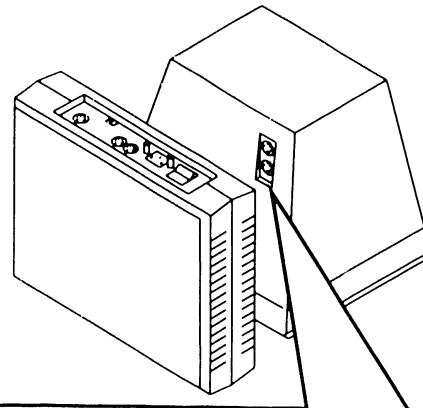
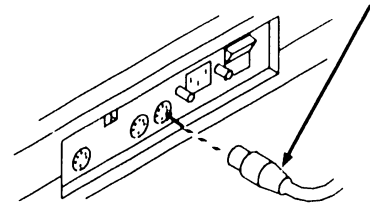


1 Connect one end of power cable to + connector on monitor base.

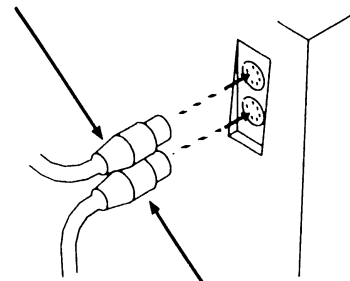


2 Connect keyboard cable to "Kybd" connector on monitor base.

3 Connect keyboard extension of twin cable to "CPU" connector on monitor base.



4 Connect other end of power cable to + connector underneath monitor.



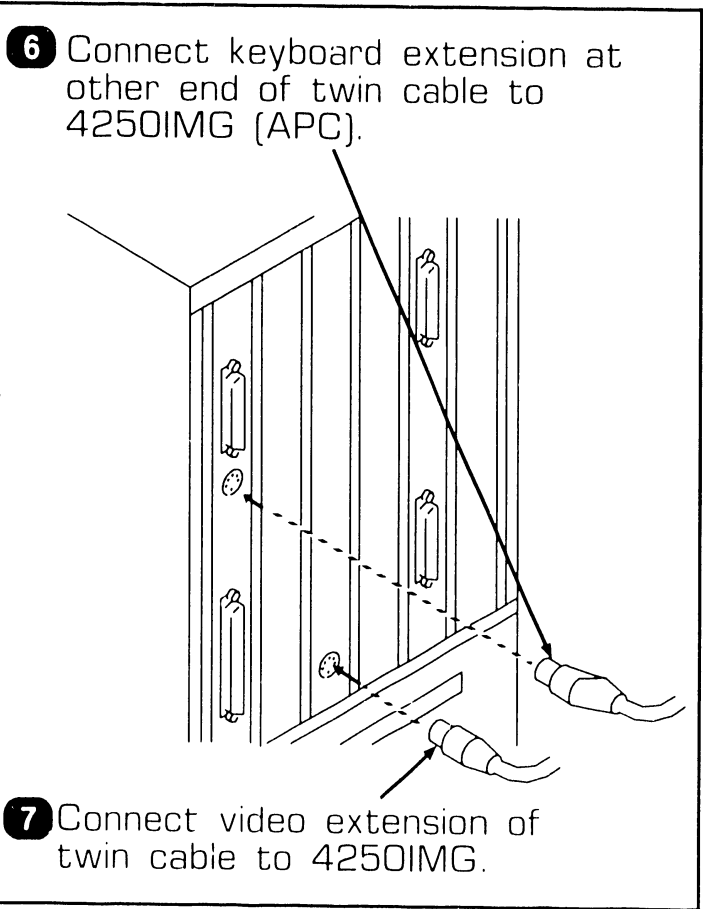
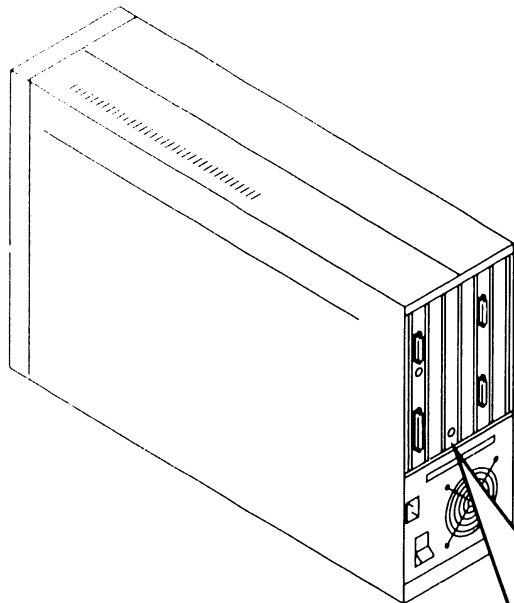
5 Connect video extension of twin cable to video connector underneath monitor.

▶ NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

9.4.10 12-Inch Imaging WS Connection (Sheet 2 of 2)

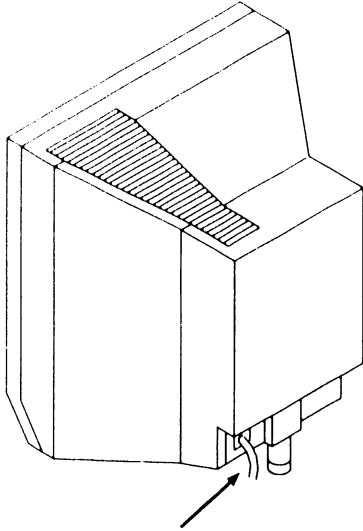


● END

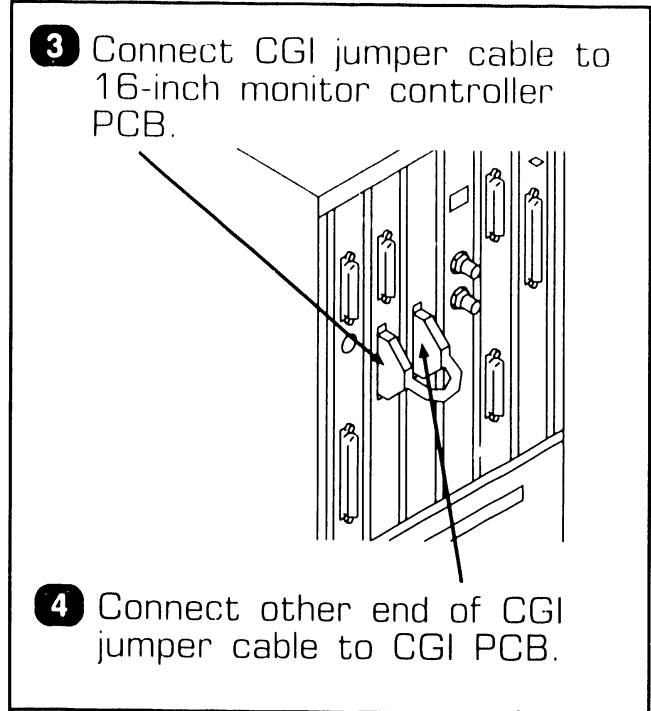
9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

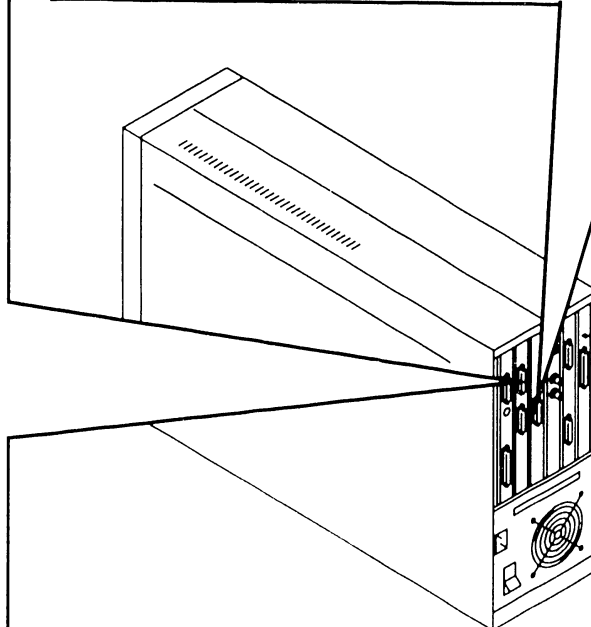
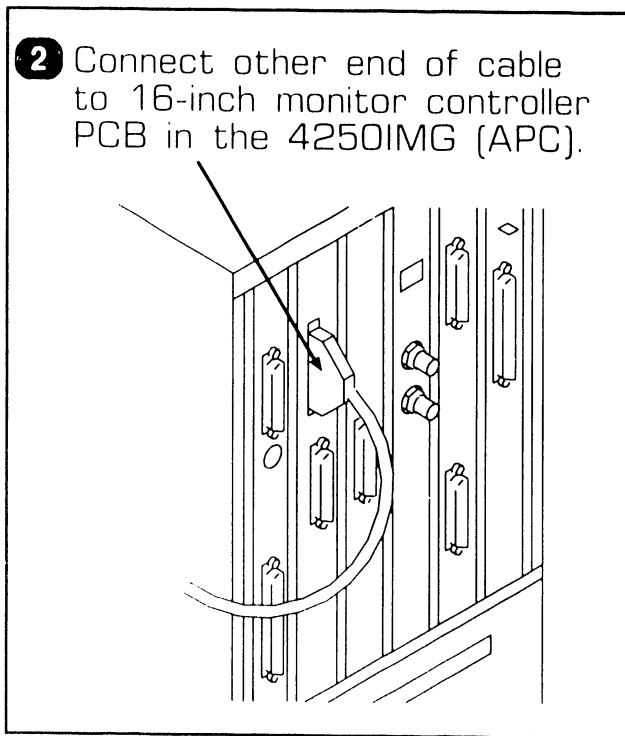
9.4.11 16-Inch Imaging WS Connection



- 1 Locate fixed cable at rear of 16-inch monitor.



- 4 Connect other end of CGI jumper cable to CGI PCB.

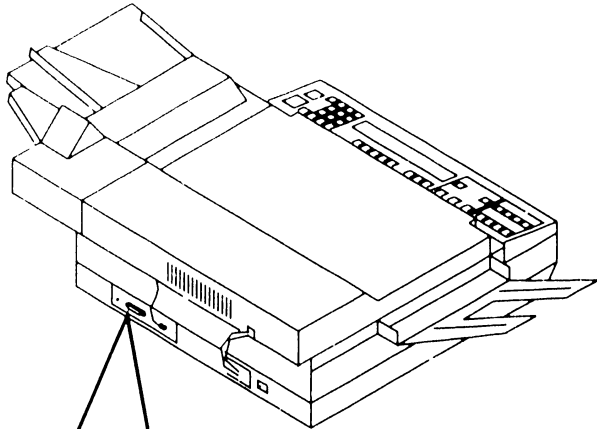


● END

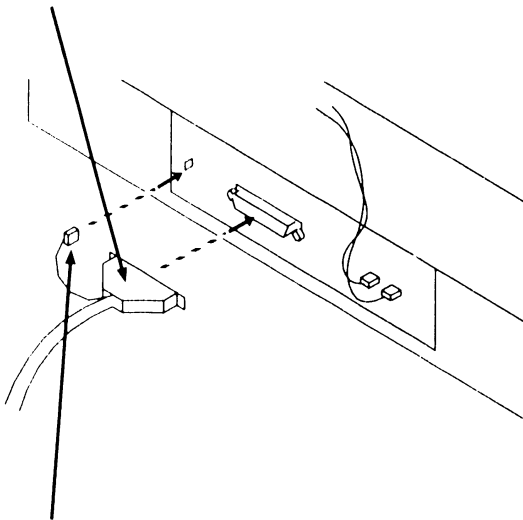
9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

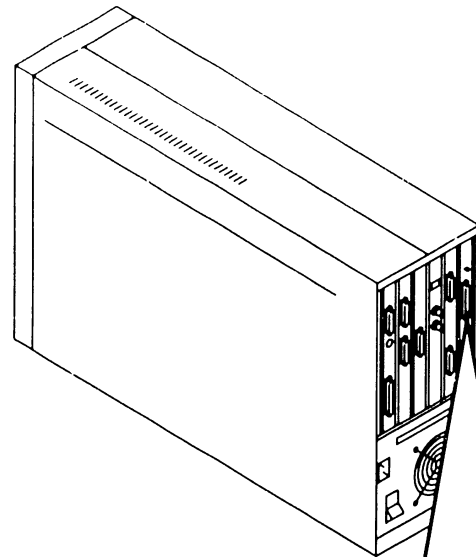
9.4.12 Scanner Connection



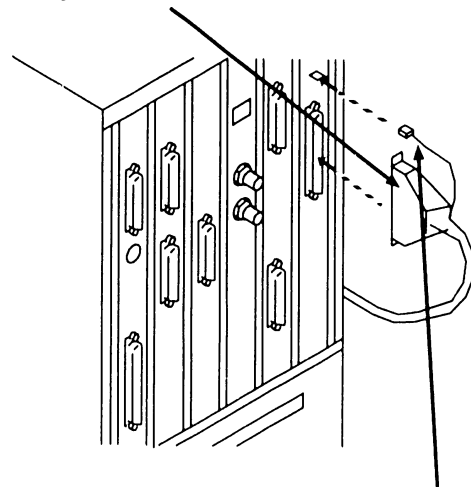
- 1 Connect interface cable to scanner.



- 2 Connect lead from interface connector to scanner chassis ground tab.



- 3 Connect other end of interface cable to 4250IMG (APC) scanner controller PCB.



- 4 Connect lead from interface connector to ground tab.

● END

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.13 Initial Power-Up and Voltage Check

NOTE

Power-up procedures for each small WIIS peripheral are found in the related manual for that peripheral (►1.3.1).

- 1 Inform the System Administrator that the Small WIIS is to be powered up.
- 2 Power up all optical disk drives.
- 3 Power up WSO.
- 4 Power up small data storage cabinet.
- 5 Power up VS-5/VS-6.
- 6 Spin up NEC 150Mb system drive (volume).
- 7 At WSO, IPL from NEC 150Mb drive.
- 8 Power up system printer(s).
- 9 Power up scanner.
- 10 Power up all workstations.
- 11 Power up all remaining peripherals.
- 12 Perform any required voltage checks as specified in Small WIIS related documentation (►1.3.1).

● END

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.14 Preliminary Software Installation

Prerequisites

- VS-6 with two internal 67MB Disk Drives
 - Optional Small Data Storage Cabinet with one 76MB RSD Drive and one 147MB NEC Drive
 - One Optional Disk Drive (two can be configured)
 - One 4230A Workstation (WS0), configured as a 4230
 - Four 16-Inch Monitors
 - All applicable software rewritten from streaming cartridge tape format to 76MB RSD Packs (One pack each for VSOS, PACE, and WIIS)
 - Latest SRN's for VSOS, PACE and WIIS
- 1** Ensure that there are current backups of all affected drives.
 - 2** IPL the VS-6 from the VSOS RSD pack.
 - 3** Reformat the System volume using the DISKINIT utility.
 - 4** Specify a Control Mode dump slot size of 4MB.
 - 5** Select a Page Pool of 30MB (Allow 1MB for each image user task). Pool size and volumes may vary at each customers site.
 - 6** Set the following parameters to 255: 'Extents at Open [XTNTOPN]' and 'Extents Total [XTNTTOT]'.

Installation Procedure

CAUTION

Software installation procedures are presented as a guide only. The CE should reference the SRN's for the most recent updates to the procedure being run.

NOTE

The parameter 255 is not a requirement but a suggestion for WIIS systems containing magnetic disk based images. Not all volumes require this setting, just those that contain the WIIS images.

- 7** Install VSOS (➡ 9.4.15).

◆ END

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.15 VSOS Software Installation (Sheet 1 of 8)

- 1 Perform preliminary software installation (►9.4.14).
- 2 Load VSOS 76MB RSD Pack.
- 3 Run BACKUP (backup entire VSOS volume to system volume). Acknowledge any possession conflict errors.
- 4 When BACKUP is complete, run GENEDIT and create a new config file for a VS-6 CPU.

CAUTION

When selecting system options in the following step, set WIIS NO. VSOS does not yet recognize WIIS as a valid system (VSOS will crash).

- 5 Hit PF2 to bring up System Options screen. Enter System Name (WANGNET ID not required in Small WIIS). Set DMS/TX=YES.

```
System Name:          WIIS*CD*SYSTEM*
System                4
WANGNET ID:          * * * * *
Will the system support: Word Processing? NO* (YES/NO)
                        Mailway?          NO* (YES/NO)
                        DMS/TX?          YES (YES/NO)
                        Wang Office?     NO* (YES/NO)
                        WIIS?           NO* (YES/NO)
Clock Rate in Hz:    60 (50/60)
Number of TOTAL DBMS tasks: 0 (0-3)
Wangnet Workstations: 0** (0-127)
Maximum length of User ID: 3 (3 or 8)
Interrupt WSO for OPERATOR messages? YES (YES/NO)
Allow program priorities? NO* (YES/NO)
VTOC Cache size in pages: 0** (0=none, or 5-255)
"Program-name" file for FASTLINK option: * * * * *
```

Systems Options Screen

►NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.15 VSOS Software Installation (Sheet 2 of 8)

NOTE

PACE software will require a modifiable data area of at least 1536KB/user. This can be set for each user through Security or defaulted in GENEDIT.

- 6 Select Task Options screen and enter data. Set the Modifiable data area default size to 1536.
- 7 Select Sharer Options screen and enter data.

Maximum open files	25**	(1 - 9999)
Maximum link levels	16	(1 - 99)
Maximum PCEXITs	8*	(1 - 99)
Modifiable data area default size	1536	(64 - 3008 K)

Task Options Screen

Number of Sharer buffers	32*	(3 - 255)
Fix buffers?	NO*	(YES/NO)
Fix control blocks?	NO*	(YES/NO)
Timeout for deadlock	90*	(1 - 255)
Use SPECIAL I/O mode?	YES	(YES/NO)

Sharer Options Screen

▶ NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

9.4.15 VSOS Software Installation (Sheet 3 of 8)

- 8 Select and configure Device Adapter screen. See figure below for installation examples on DA's and device numbers.

Jumper Address	PDA	1st Dev	DA Type	DA Description
000	2800	0	28V01	BP/SIO Device Adapt
000	2000	32	28V02	BP/Floppy DA
000	2010			
000	2020	35	28V04	BP/SCSI DA
300	2C00			
500	3000			
100	3400	63	25V50	Disk Device Adapter
600	3800			
400	3C00			

Device Adapter Screen

▶NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

9.4.15 VSOS Software Installation (Sheet 4 of 8)

- 9 Select Serial Device screens and install serial devices.

NOTE

All four windows do not have to be selected. Unnecessarily doing so can drastically affect VS-5/VS-6 performance.

28V01	BP/SIO	Device	Adapt	IOP#	2
Dev#	Port#	Type	Description	WP?	
0	0	4230	Monochrome Combined	N	
1	1	4250IMG	Image MWS	N	
2			For MWS - port 1	N	
3			For MWS - port 1	N	
4			For MWS - port 1	N	
5	2	4250IMG	Image MWS	N	
6			For MWS - port 2	N	
7			For MWS - port 2	N	
8			For MWS - port 2	N	
9	3	4250IMG	Image MWS	N	
10			For MWS - port 3	N	
11			For MWS - port 3	N	
12			For MWS - port 3	N	
13	4	4250IMG	Image MWS	N	
14			For MWS - port 4	N	
15			For MWS - port 4	N	

Serial Device Screen (1)

➡ NEXT

9.4 UNPACKING AND SETUP

Small WIIS Installation

9.4.15 VSOS Software Installation (Sheet 5 of 8)

Dev#	Port#	Type	Description	WP?
16			For MWS - port 4	N
17				N
18	5	LIS12	12ppm Laser System	N
19				N
20				N
21				N
22				N
23				N
24				N
25				N
26				N
27				N
28				N
29				N
30				N
31				N
32				N

Serial Device Screen (2)

▶NEXT

9.4 UNPACKING AND SETUP

Small WIS Installation

9.4.15 VSOS Software Installation (Sheet 6 of 8)

- 10** Configure each 4250IMG Workstation.
 - a. Configure one 4250IMG workstation on a port. Once configured, place the cursor on the line for the workstation and press ENTER to reserve cluster devices.
 - b. Place X's next to the additional device numbers to be used for the second, third, and fourth windows. Press ENTER to return to the Serial Device Screen. Configure the other 4250IMG workstations in the same manner.

►NEXT

9.4 UNPACKING AND SETUP

Small WIS Installation

9.4.15 VSOS Software Installation (Sheet 7 of 8)

- 11 Select SCSI Device screen and install SCSI devices.
 - a. Configure both 67MB drives on one SCSI port.
 - b. Configure optical drives on separate ports.

CAUTION

Optical drives must be configured on the *first* device number for the port.

CAUTION

Port number must match control module address LAP plug number on optical drive.

Dev#	Port#	Type	Description	Attach?
35	6	2269V1	67Mb 5-1/4in Fix Dk	
36	6	2269V1	67Mb 5-1/4in Fix Dk	
37	6			
38	6			
39	5	2278V1	Laser Disk	
40	5			
41	5			
42	5			
43	4	2278V1	Laser Disk	
44	4			
45	4			
46	4			
47	3	2278V1	Laser Disk	
48	3			
49	3			
50	3			
51	2	2278V1	Laser Disk	
52	2			
53	2			
54	2			

SCSI DEVICE SCREEN

▶ NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

9.4.15 VSOS Software Installation (Sheet 8 of 8)

- 12 Configure the 147MB drive on external port 0. Configure the 76MB drive on external port 1.
- 13 Save the config file on the System Volume, Library @SYSTEM@, as File @CONFIG@.
- 14 Note total number of drives listed on summary screen (PF4). Optical drives are not reflected in this total.
- 15 Log Off then Re-IPL from: System volume.
- 16 Remove VSOS RSD Pack and proceed to PACE Installation (▶9.4.16).

GENEDIT
@CONFIG@ in @SYSTEM@ on (System)

Create/Update CONFIG File
Model VS6

Your configured system contains:

XX	workstations
X	printers
X	disks
0	tapes
0	TC lines
0	Wangnet Workstations

Enter the name of the CONFIG file you wish to create:

VOLUME: (SYSTEM) LIBRARY: @SYSTEM@ FILE: @CONFIG@

SUMMARY SCREEN

● END

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.16 PACE Software Installation (Sheet 1 of 7)

- 1 Make certain VSOS has been installed in Small WIIS (►9.4.15).
- 2 Mount PACE RSD Pack. Run BACKUP. Specify input file volume, library @PACE@, and file INSTAL20. Specify output file on System volume with same library and filename.
- 3 Make selections per Pace Installation screen and press ENTER.

NOTE

The 'PACE Volume' selection may also vary at a customers site. This selection will determine where the PACE database file will default to. PACE programs will always be loaded on the system volume. However, database files may be on a separate volume.

```
INPUT volume = (volume ID)
      type   = DISK* * * * (DISK, TAPE or DISKETTE)
      device = 064
```

```
PACE volume = (SYSTEM)
```

```
Install Application Builder? NO (Yes/No) from volume AB* * * *
      Query?                  NO (Yes/No) from volume QUERY*
      Report?                 NO (Yes/No) from volume REPORT
      Cullinet?               NO* (Yes/No) from volume PACCUL
```

```
Install INTRO2 data base? NO* (Yes/No) (from Input volume if blank)
      Volume = * * * * * *
```

```
Install MODEL2 data base? NO* (Yes/No)
      Volume = * * * * * *
```

```
(to PACE volume if blank)
```

Pace Installation Screen

►NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.16 PACE Software Installation (Sheet 2 of 7)

- 4 After approximately 7 minutes the Data Base Character Set Warning screen will appear. Press ENTER to continue.

NOTE

The following screen appears when installing PACE 2.00.60. Later releases may not utilize this screen.

The Data Base @P0200 Character Set is: Default (US)

The System Character Set is: US US

YOU MAY CONTINUE TO CATALOG THIS DATA BASE, BUT ITS CHARACTER SET
WILL NOT BE CHANGED TO THAT OF THE SYSTEM.

Data Base Character Set Warning Screen

▶NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.16 PACE Software Installation (Sheet 3 of 7)

- 5 After a few minutes the SSL Warning screen will appear. Write down the ALIAS names and Shared Subroutine Library names provided for 'PACE Run Time:' and 'Query Runtime for Report:'. Press ENTER to run the SSL utility.

WARNING

To complete the Catalog function of the data base @P0200 the PACE Run Time must be listed as a Shared Subroutine Library in the System SSL Catalog.

YOU MUST PERFORM THIS FUNCTION BY RUNNING THE SSL SYSTEM UTILITY.

Run the SSL Utility and, if not already listed, insert the following:

<u>ALIAS</u>	<u>SHARED SUBROUTINE LIBRARY:</u>
PACE Run Time: SYSTEM#PACE#@P0200#RTL	(System) : @@P0200D . PACERTL
Query Run Time for DD Reports: SYSTEM#PACE#@P0200#PACERODD	(System) : @@P0200D . PACERODD
(if PACE Report is installed) Query Run Time for Report: SYSTEM#PACE#@P0200#PACERO	(System) : @@P0200 . PACERO

SSL Warning Screen

►NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.16 PACE Software Installation (Sheet 4 of 7)

- 6 From the SSL utility screen select PF-11 for Insert.

To manage an alias and its SSL, position the cursor and press (ENTER).

<u>ALIAS</u>	<u>SHARED SUBROUTINE LIBRARY</u>
* @SYSDMS	(System) :@SYSTEM@.@SYSDMS@
* @SYSSERV	(System) :@SYSTEM@.@SYSSERV
* @SYSTRN	(System) :@SYSTEM@.@SYSTRN@

SSL Utility Screen

- 7 From the SSL Insert screen type in the ALIAS that was written down for PACE Runtime. Set the 'Use System Volume' selection to YES. Enter the Shared Subroutine Library name for PACE Runtime in the 'Library.File' selection field. Press ENTER.

ALIAS:
SYSTEM#PACE#@P0200#RTL* * * * *
Maps to SSL (Volume:Library.File):
Use System Volume (Y/N): Y
Name of Volume if not system volume: * * * * *
Library.File: @@P0200D . PACERTL*

SSL Insert Screen

➡ NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.16 PACE Software Installation (Sheet 5 of 7)

- 8 Repeat steps 6 and 7 for the Query Runtime for Report ALIAS and Shared Subroutine Library.

ALIAS:

SYSTEM#PACE#@P0200#PACERO* * * * *
*

Maps to SSL (Volume:Library.File):

Use System Volume (Y/N): Y

Name of Volume if not system volume: * * * * *

Library.File: @@P0200D . PACERO**

ALIAS and Shared Subroutine Query Screens

- 9 From the SSL Utility screen select PF-16 to exit.

To manage an alias and its SSL, position the cursor and press (ENTER).

ALIAS

* @SYSDMS
* @SYSSERV
* @SYSTRN
* SYSTEM#PACE#@P0200#PACERO
* SYSTEM#PACE#@P0200#RTL
* SYSTEM#PACE#@P0200#PACERODD

SHARED SUBROUTINE LIBRARY

(System) :@SYSTEM@.@SYSDMS@
(System) :@SYSTEM@.@SYSSERV
(System) :@SYSTEM@.@SYSTRN@
(System) :@@P0200D.PACERO
(System) :@@P0200D.PACERTL
(System) :@@P0200D.PACERODD

SSL Utility Screen

➡ NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIS Installation

9.4.16 PACE Software Installation (Sheet 6 of 7)

- 10** From the SSL Define Output screen select 'Keep the Changes'. Press ENTER.

You have changed the file of shared subroutine libraries,
ALIASFL in @SYSTEM@ on (System)

Please select one of the following and press (ENTER):

- * Keep the changes
- * Discard the changes

SSL Define Output Screen

- 11** Observe the SSL Warning screen (step 5). Select PF-16 to exit.

▶NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.16 PACE Software Installation (Sheet 7 of 7)

- 12** A PACE bug will cause an 'Unexpected error writing Character Set' message. Press ENTER to continue.

Unexpected error writing Character Set, Press enter to continue

INPUT volume = P20060
type = DISK* * * * (DISK, TAPE or DISKETTE)
device = 064

PACE volume = (System)

Install Application Builder? NO (Yes/No) from volume AB
Query? NO (Yes/No) from volume QUERY
Report? NO (Yes/No) from volume REPORT
Cullinet? NO (Yes/No) from volume PACCUL

Install INTRO2 data base? NO (Yes/No) (from Input volume if blank)
Volume =

Install MODEL2 data base? NO* (Yes/No)
Volume =

(to PACE volume if blank)

Unexpected Character Set Writing Error Screen

- 13** Remove PACE RSD Pack and proceed to WIIS Installation (►9.4.17).

● END

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.17 WIIS Software Installation (Sheet 1 of 7)

The WIIS installation procedure is designed to delete itself after completion; therefore the procedure is first copied to the System volume and then run from there. Once the WIIS software has been installed, the config file must also be changed so that WIIS is loaded at IPL time. The WIIS installation procedure will generate printouts of all files installed.

- 1 Make certain PACE has been installed in Small WIIS (►9.4.16).
- 2 Mount WIIS RSD Pack. Run BACKUP. Specify input file volume, library @SYSTEM@, and file INSTALL. Specify output file on System volume with same library and filename.

NOTE

Output selections may vary on a customer's system. The Database Volume name selects where the WIIS database information will go. WIIS programs are always installed on the System volume.

- 3 Run INSTALL program in @SYSTEM@ ON System volume.

NOTE

Before selecting parameters in the WIIS Installation screen, it should first be determined if WIIS was previously installed and whether any old system files should be kept or replaced. Selecting YES or NO at this prompt will affect images stored on microfilm or optical jukeboxes. These are only available on Large WIIS systems and are not used on Small VS-6 based WIIS systems. Enter YES for VS-6 systems.

►NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.17 WIIS Software Installation (Sheet 2 of 7)

- 4 Select parameters per WIIS Software Installation screen.
Press ENTER.

Please supply INPUT Information:

Install Volume: (Volume ID)
Install Device Type: DISK (TAPE or DISK)
Install Device #: 064 (1-255)

Please supply OUTPUT Information:

Database Volume: (System)
Target CPU Class: 7 (4, 5, 7, 8)

If WIIS was previously installed:

Replace System Files: YES

WIIS Software Installation Screen

▶NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.17 WIIS Software Installation (Sheet 3 of 7)

- 5 After approximately six minutes, observe WIIS Installed Software Display screen. Press ENTER.

Installation Successful

Library @VSWIIS@	copied to	Volume (System)
DataBase @II200	copied to	Volume (System)
DataBase WIISDL	copied to	Volume (System)
DataBase WIISTA	copied to	Volume (System)
WIIS Runtime	copied to	Volume (System)
WIIS System Files	copied to	Volume (System)
File @PACECAT	updated on	Volume (System)
SSL's are now registered	on	Volume (System)

WIIS Installed Software Display Screen

►NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.17 WIIS Software Installation (Sheet 4 of 7)

- 6 Using Manage Files and Libraries, rename file @4250INS to @4250IMG in library @SYSTEM@ on System volume. This is the microcode file for the 4250IMG workstation.

* Rename File * * *

Library @SYSTEM@ on System volume contains 183 files.

Filename	Filename	Filename	Filename	File
* @2246S	* @4230MWS	* @GENMSG@	* @MC2246R	* @MC2
* @2246S1	* @4250GM	* @ICPYTSK	* @MC2246S	* @MC2
* @2246S2	* @4250INS	* @ILOGTSK	* @MC2256C	* @MC2
* @2246S2B	* @5535S	* @IOCDRT@	* @MC2263S	* @MC4
* @2246S3	* @6300GM	* @IOCLOD@	* @MC2266C	* @MC4
* @23V95KN	* @CONFIG5	* @IOPER@	* @MC2266S	* @MC4
* @23V95TX	* @CONFIG6	* @IOSLOAD	* @MC2273S	* @MC4
* @23V96DE	* @CONFIG@	* @IPRTTSK	* @MC2281S	* @MC4
* @23V96RW	* @DBGCMDS	* @LOGGER@	* @MC22V36	* @MC5
* @23V97W	* @DEBUG@	* @MC2221S	* @MC2509V	* @MC5
* @23V98	* @DEVMGR@	* @MC2238V	* @MC2529V	* @MC5
* @4210WM	* @FFM	* @MC2246C	* @MC2536E	* @MC9

Rename File Screen

▶ NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.17 WIIS Software Installation (Sheet 5 of 7)

- 7 Update the config file to reflect a WIIS installation.
 - a. Run GENEDIT. The file will be @CONFIG@ in @SYSTEM@ on the Systems config file.
 - b. On the Systems Options screen select WIIS = YES.
 - c. Save the modified configuration file.

System Name:	WIIS CD SYSTEM 4
System WANGNET ID:	* * * * *
Will the system support: Word Processing?	NO* (YES/NO)
Mailway?	NO* (YES/NO)
DMS/TS?	YES (YES/NO)
Wang Office?	NO* (YES/NO)
WIIS?	YES (YES/NO)
Clock Rate in Hz:	60 (50/60)
Number of TOTAL DBMS tasks:	0 (0-3)
Wangnet Workstations:	0** (0-127)
Maximum length of User ID:	3 (3 or 8)
Interrupt WSO for OPERATOR messages?	YES (YES/NO)
Allow program priorities?	NO* (YES/NO)
VTOC Cache size in pages:	0** (0=none, or 5-255)
"Program-name" file for FASTLINK option:	* * * * *

Systems Options Screen

➡ NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.17 WIIS Software Installation (Sheet 6 of 7)

- 8** Perform WIIS software verification.
- Re-IPL the system. As soon as the Operators Console appears on workstation 0 select PF-7 (Non-Interactive tasks) to verify that all background tasks required for WIIS are running.
 - Observe all background TASKS running properly. Totals will vary on customer systems if WP printers and/or user background task slots have been configured.

14 non-interactive tasks in system

Procedure Identifier	Status	User	Procedure	Elapsed Time	CPU Time	CPU Limit	Starting Date /
			@ODVP1@	1:18	0:00:00		
			@ODMGR@	1:18	0:00:00		
			@ODXIO@	1:18	0:00:00		
			@ODXIO@	1:18	0:00:00		
[DEVMGR]			@DEVMGR@	1:19	0:00:05		
[SYSTSK]			@SYSTSK@	1:19	0:00:07		
[SHARER]			@SHARER@	1:19	0:00:04		
PRTTSK]			@PRTTSK@	1:19	0:00:02		
[TWOLIH]			TWOLIH	1:19	0:00:00		
[TSKMGR]			@TSKMGR@	1:19	0:00:07		

Non-Interactive Task Screen (1)

▶ NEXT

9.4 UNPACKING AND SETUP

9.4 Small WIIS Installation

9.4.17 WIIS Software Installation (Sheet 7 of 7)

NOTE

@ODXIO@ will appear once for each optical drive configured in the GENEDIT file; therefore, the number of background tasks will vary from configuration to configuration.

14 non-interactive tasks in system

Procedure Identifier	Status	User	Procedure	Elapsed Time	CPU Time	CPU Limit	Starting Date /
			@IPRTTSK	1:18	0:00:00		
			@ICPYTSK	1:18	0:00:00		
			@ILOGTSK	1:18	0:00:02		
			@ODVP2@	1:18	0:00:00		
			@ODVP1@	1:18	0:00:00		
			@ODMGR@	1:18	0:00:00		
			@ODXIO@	1:18	0:00:00		
[DEVMGR]			@ODXIO@	1:18	0:00:00		
[SYSTSK]			@DEVMGR@	1:18	0:00:05		
			@SYSTSK@	1:19	0:00:07		

(two optical drives)

Non-Interactive Task Screen (2)

9 Remove WIIS RSD Pack.

● END

9.5 UNPACKING AND SETUP

Large WIIS Installation

(TO BE SUPPLIED)

● END

SECTION

10

**FUNCTIONAL
DESCRIPTION**

SECTION 10 CONTENTS

SECTION 10 FUNCTIONAL DESCRIPTION

	<u>Page</u>
10.1 SMALL WIIS	10-1
10.1.1 System Overview	10-1
10.1.2 System Block Diagram	10-3
10.1.3 VS-5/VS-6 Computer System	10-4
10.1.4 4250IMG Image Capable Workstation	10-5
10.1.5 VS Standard Workstation	10-7
10.1.6 WIIS-INPUT-02 Document Scanner	10-8
10.1.7 Thermal Printer	10-9
10.1.8 LIS-12 and LIS-24 Image-Capable Printers	10-10
10.1.9 LCS-15 Laser Composition System	10-11
10.1.10 Standalone Magnetic Disk Drive(s)	10-12
10.1.11 WIIS-2278V-1 Standalone Optical Disk Drive	10-13

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.1 System Overview (Sheet 1 of 2)

This section presents an overview of the Small WIIS system including a brief functional description of its peripherals. Detailed functional information concerning each individual Small WIIS peripheral can be found in the related documentation for that peripheral (►1.3.1).

The Small WIIS is an integrated office information retrieval system based on the VS-5/VS-6 running PACE (Professional Application Creation Environment) software. The Small WIIS combines the PACE-driven Relational Data Base Management System (RDBMS) technology to find individual records on a specific topic; and imaging technology for viewing those records and documents within a windowing environment on large workstation screens. Document distribution via Wang Office and printing of image documents on laser printers are supported. Wangnet is also supported.

Image Capture

Images (hand written, typed, photographs) are captured and digitized by the WIIS-INPUT-02 Document Scanner under control of Image Document Capture software. This software provides specific document identification and location for transfer to magnetic disk files.

The data is entered into the proper tables in the Document Locator data base and optionally into the User data base as part of the indexing process for future retrieval.

Image Storage

Digitized image storage on the Small WIIS can be optical disk based and/or magnetic disk based. Optical disk drives are directly connected to the VS-5/VS-6 through the single-ended SCSI (Small Computer Systems Interface) port.

The optical disk measures 12 inches in diameter and operates under WORM (Write Once, Read Many) technology. It has two surfaces (two volumes). Each volume has a capacity of 1 million 1024-byte blocks (or 500,000 2048-byte blocks) totalling 1 gigabyte.

Indexing data bases are stored on internal magnetic disk drives connected to the VS-5/VS-6 via the SCSI port. External magnetic disk drives in the small data storage cabinet are also available for additional data base storage.

►NEXT

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.1 System Overview (Sheet 2 of 2)

Image Retrieval

After capturing, indexing, and storing image documents, PACE software can enable users to display, print, and copy image documents. However, no physical modification of the original document is permitted. Changed documents must be entered as new documents with notations in the data base to indicate that they replace existing information (logical modification only).

Optional Software

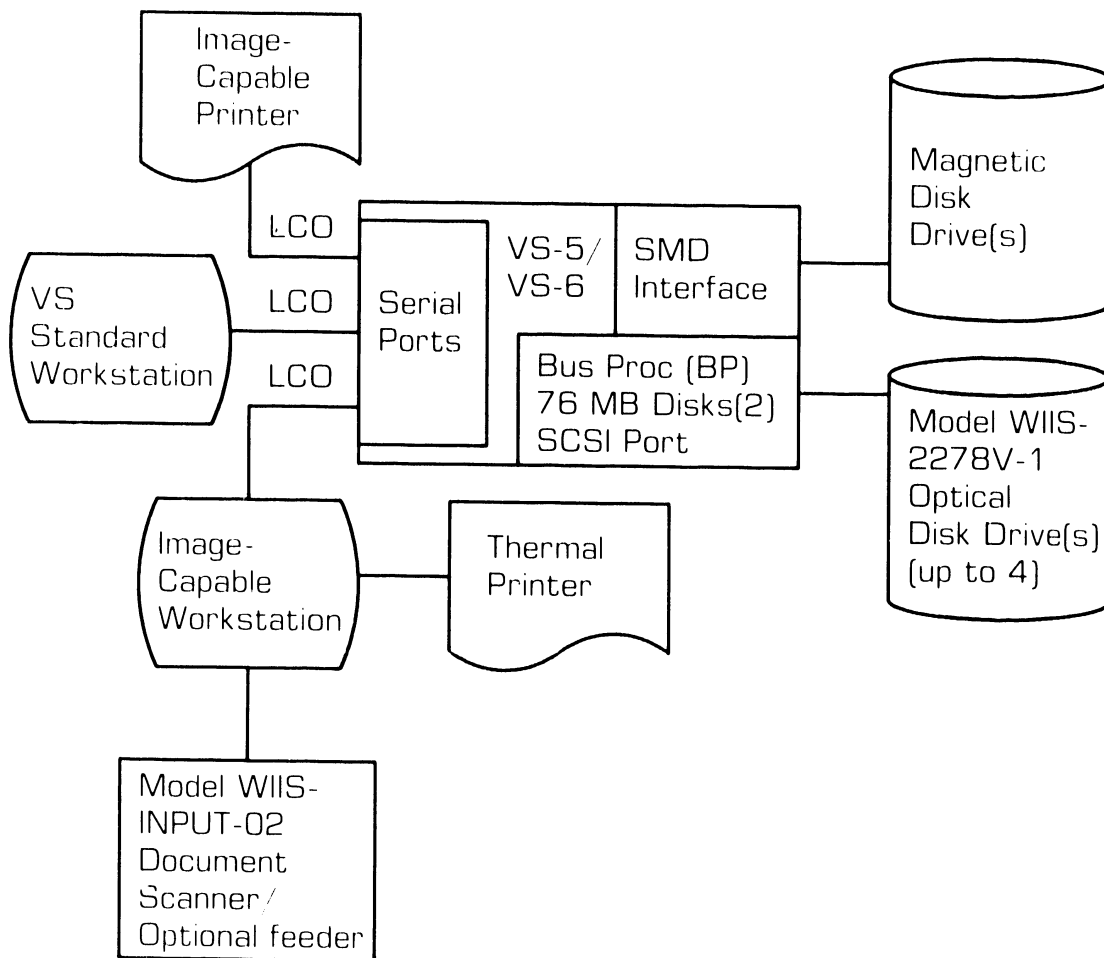
Along with its imaging capabilities, the Small WIIS can perform additional PACE applications such as Word Processing, VS WP Plus, VS/IIS WP, PACE/Host Language Interface (HLI) such as COBOL, Wang Office, VS Communications, and IBM 327X emulation (except 3279). No concurrent imaging is possible if WP or WP PLUS is selected.

● END

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.2 System Block Diagram



● END

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.3 VS-5/VS-6 Computer System

The VS-5 VS-6 CPU is the main controlling element for the Small WIIS. With the type of boards used, the VS-5 supports up to 8 megabytes of virtual memory and the VS-6 supports up to 16 megabytes. The Small WIIS can work within the 8-megabyte environment; however, 16 megabytes of virtual memory are recommended for performance.

LCO Serial Ports

The VS-5/VS-6 uses LCO (Local Communications Option) serial ports to communicate with standard VS DP/WP workstations, LIS or LCS printers, and with 4250IMG (APC) workstations. Each 928 data link LCO cable connection can be up to 2000 feet in length. Wangnet is also supported.

Internal Disk Drives

Two internal 76MB (67.5Mb formatted) disk drives are mounted within the VS-5/VS-6. These drives are internally connected to the SCSI port and can be used to store WIIS indexing data bases. Other software for the VS-5/VS-6 can also be stored on these drives.

SCSI Interface

The VS-5/VS-6 single-ended SCSI (Small Computer Systems Interface) port provides communication from the CPU to the daisy-chained optical disk drives. Maximum overall cable length between the CPU and the drives is 20 feet (6 meters). The SCSI also supports two internal 76MB Winchester disk drives.

SMD Interface

The VS-5/VS-6 can support up to four external disk drives with the installation of a 4-port SMD Controller board into an available motherboard slot. One or two external drives can be supported by a 2-port SMD Controller. All required interface and control functions are provided by the SMD Controller.

● END

FUNCTIONAL DESCRIPTION

10.1 Small WIIIS

10.1.4 4250IMG Image Capable Workstation (Sheet 1 of 2)

The 4250IMG Image Capable Workstation consists of an upgraded 5-slot or 8-slot APC electronics unit, a 16-inch full-page monochrome monitor (or 12-inch half-page monitor), and a keyboard. The 4250IMG interfaces to the WIIIS-INPUT-02 Document Scanner (for image capture) and also connects to a thermal printer to provide local printout of images and text.

In addition to controlling the scanner and thermal printer, the 4250IMG provides access to image pages, data base records, and other VS application screens. All of these can be displayed in separate windows through the use of image-capable windowing software.

With image manipulation software, the user can perform a number of functions including rotating, flipping, reducing, or enlarging an image. Original scanned information however, cannot be modified. All standard data processing and word processing functions on VS systems are supported.

APC-to-4250IMG Upgrade

Wang offers a pre-configured Image Capable Workstation (model 4250IMG-1). An existing APC can be

upgraded to a 4250IMG Image Capable Workstation with the addition of certain components necessary for imaging function. These include a 16-inch (Full Page) Image Monitor PCB, High-Resolution Character/Graphics/IBM (CGI) PCB, and at least 1MB of memory.

A Scanner Controller PCB must also be added if that workstation is connected to the WIIIS-INPUT-02 Document Scanner. Likewise, a Thermal Printer Controller PCB must be added to interface the workstation to a thermal printer. A 12-Inch Image Monitor PCB allows the 4250IMG to interface to a 12-inch (Half-Page) Monitor.

An LCO (Local Communications Option) board in the 4250IMG provides the BNC/TNC 928 data link between the workstation and the VS-5/VS-6. This twin cable can be up to 2000 feet in length.

►NEXT

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.4 4250IMG Image Capable Workstation (Sheet 2 of 2)

16-Inch Monitor

Both the 4250IMG Workstation and 4250IMG-1 Workstation support the 16-inch full-page bit-mapped image monitor which has a display resolution of 200 dots/inch. Full-page viewing is supported by scanning the image (using reduction controls), or through either the scroll mode or decimation mode with sufficient resolution to read the fine print on most claims forms.

The 16-inch monitor has an adjustable rear foot which can be set for optimum tilt and viewing angle. A brightness knob allows adjustment of the non-glare black and white display for comfortable viewing.

12-Inch Monitor

The 12-inch half-page monitor is supported by both the 4250IMG and 4250IMG-1 and has a display resolution of 100 dots/inch. Brightness and contrast controls allow for optimum viewing adjustment of the black and white display. Half of the image page is viewable in the full-screen mode with the remainder accessible through scrolling functions.

The display is mounted on top of a monitor base enclosure which houses

a PCB used to process video and synchronization signals. A low-profile switching power supply is also contained in the enclosure. This supply provides operating voltages to the display and control PCB.

Keyboard

The keyboard used with the image capable workstation is an ergonomically designed, low profile, detached keyboard with 101 keys. The keys are arranged in functional groups around a standard typewriter keyboard. Numeric information is easily entered via a numeric keypad.

The keyboard includes system and cursor control keys, and special keys for operations such as PF5 (Next) and PF4 (Previous) which are used to select the next page or the previous page of a document for viewing on the display screen. The keyboard also includes adjustable audible feedback of keyboard operation.

● END

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.5 VS Standard Workstations

The Small WIIS supports all standard VS workstations including the 4230A, 2256C, and 2110A. Although not capable of performing imaging functions like the 4250IMG and 4250IMG-1, these standard VS workstations are supported for document search, copy, and laser print functions. This allows flexibility in those workstation environments where document search and printout is satisfactory and display functions are not required.

Standard VS workstations are interfaced to the VS-5/VS-6 via serial ports of the LCO (Local Communications Option). Each EAPA (Electrical Active Port Assembly) of the VS-5/VS-6 provides 8 pairs of BNC/TNC interface connectors (one pair for each workstation). A twin cable, up to 2000 feet long, is connected from the workstation BNC/TNC connectors to the BNC/TNC connectors on the EAPA.

● END

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.6 WIIS-INPUT-02 Document Scanner

The Model WIIS-INPUT-02 Document Scanner is a desktop device capable of scanning images and text and digitizing them for storage onto optical or magnetic disks. An optional ADF (Automatic Document Feeder) is available for the scanner. The ADF consists of a feeder and an output tray and automatically feeds sheets of paper through the scanner.

The scanner is interfaced through the scanner board located in the 4250IMG Imaging Workstation. The scanner is operated from its own front panel controls or from the 4250IMG. When operated from the 4250IMG, each page being scanned is displayed on the workstation screen. Pages can also be displayed when operating from the scanner control panel.

Images are digitized at 200 dots/inch. An A4 size document is scanned, compressed, and transmitted to the VS-5/VS-6 in approximately 4-10 seconds depending on image density. Digitized images are stored on optical or magnetic disks for recall and viewing at a 4250IMG Imaging Workstation. The dual-function 4250IMG displays images, and also captures images (through the scanner controller PCB). The user does

not have to specify the scanner function during GENEDIT.

Images are compressed prior to storage by the scanner controller card. Image traffic in the VS-5/VS-6 is all compressed images for increased throughput. Image decompression occurs in the workstation or laser printer before outputting to a viewing screen or to paper.

The optional Automatic Document Feeder (ADF) can hold 50 sheets and automatically feed them through the scanner at a rate of 15 pages/minute when operating in its ADF mode.

● END

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.7 Thermal Printer

The Thermal Printer interfaces to the thermal printer controller card in the 4250IMG Image Capable Workstation. It provides a convenient means of obtaining inexpensive locally-printed proof copies before requesting finalized copies from an image-capable system printer.

One complete raster line per paper step is produced by heating individual elements of a fixed thermal printhead to produce full-image pages on heat-sensitive paper at a resolution of 200 dots/inch. The printing speed of the thermal printer is 1 to 3 pages per minute depending on the image density. Print paper is provided by a roll 8-1/2 inches in width by 100 feet in length.

● END

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.8 LIS-12 and LIS-24 Image-Capable Printers

LIS-12 Laser Imaging System

The LIS-12 Laser Imaging System generates high-quality printouts for image documents, as well as for VS-generated reports, word processing documents, and graphs. An LPS-12 Laser Printing System serves as the hard-copy output device for the LIS-12. The LPS-12 supports numerous paper sizes including 8-1/2 by 11 inches, 8-1/2 by 14 inches (legal), and A4 (international).

Depending on the complexity of a text document, the LIS-12 system can print up to 12 pages/minute. Image documents are printed at approximately half the speed of text documents. Printed page resolution is 300 dots/inch.

The LIS-12 interfaces to the VS-5/VS-6 via the Local Communications Option (LCO) over dual-coax BNC/TNC cable up to 2000 feet in length. PACE and WIIS software in the VS-5/VS-6 controls operation of the LIS-12.

LIS-24 Laser Imaging System

The LIS-24 Laser Imaging System and companion LPS-24 Laser Printing System function in a similar manner but at twice the speed of the LIS-12 and LPS-12 described above.

Text documents are produced at approximately 24 pages/minute depending on their complexity. Image documents are printed at approximately half the speed of text documents. Printed page resolution is 300 dots/inch.

◆ END

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.9 LCS-15 Laser Composition System

The LCS-15 Laser Composition System provides high-quality printing of text, images, and graphics for WIIS image documents. The LCS-15 supports numerous paper sizes including 8-1/2 by 11 inches, 8-1/2 by 14 inches (legal), and A4 (international). Depending on the complexity of the document, the LCS-15 can print up to 15 text pages/minute on 8-1/2 by 11-inch paper. Printed page resolution is 300 dots/inch.

The LCS-15 interfaces to the VS-5/VS-6 via the Local Communications Option (LCO) over dual-coax BNC/TNC cable up to 2000 feet in length. VS-5/VS-6 PACE and WIIS software along with PostScript® (a device-independent page description language) control operation of the LCS-15.

● END

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.10 Standalone Magnetic Disk Drive(s)

Magnetic data storage of images and text is provided by two 76mB (67.5mB formatted) fixed winchester drives mounted in the VS-5/VS-6 cabinet. The total storage capacity can be increased up to 223mB (unformatted) with the addition of one or two standalone magnetic disk drives mounted in the small data storage cabinet.

Three configurations of the small data storage cabinet are presently available:

- One 76mB Removable (76mB Total)
- One 76mB Removable and One 76mB Fixed (152mB Total)
- One 76mB Removable and One 147mB Fixed (223mB Total)

Each standalone magnetic disk drive mounted inside the small data storage cabinet is wired through extender cables to 'A' and 'B' bulkhead cable connectors on the outside of the cabinet. These bulkhead connectors provide the standard 'A' and 'B' cable interface back to the SMD (Storage Module Drive) interface panel in the VS-5/VS-6.

● END

FUNCTIONAL DESCRIPTION

10.1 Small WIIS

10.1.11 WIIS-2278V-1 Standalone Optical Disk Drive

A single Model WIIS-2278V-1 Standalone Optical Disk Drive is used as the main storage element for image and text data processed by the Small WIIS. Up to three additional drives can be daisy-chained to the first to provide added storage capacity.

Each drive supports one 12-inch WORM (Write Once, Read Many) double-sided platter capable of storing 1gB of usable data per surface. Each surface is a volume with a capacity of 1 million 1024-byte blocks (or 500,000 2048-byte blocks) totaling 1 gigabyte.

A disk drive can only read and write to one surface of a double-sided platter. Access to data on the opposite surface of the platter requires manual intervention to remove the platter, turn it over, and reinsert it back into the drive. Approximately 20,000 image pages (depending on density) can be stored on each surface of an optical disk.

The drive contains all necessary circuitry to read, write, and perform error correction. Drive operations are enabled through front panel controls and indicators. The drive has an embedded SCSI controller which connects to the SCSI port of the VS-5/VS-6. Total maximum SCSI cable length between the VS-5/VS-6 and

the last daisy-chained drive is 20 feet.

A CE service panel is visible when the front plastic cover is removed.

● END

SECTION

11

SPECIFICATIONS

SECTION 11 CONTENTS

SECTION 11 SPECIFICATIONS

	<u>Page</u>
11.1 SMALL WIIS	11-1
11.1.1 Hardware Specifications	11-1
11.1.2 Software Specifications	11-2
11.2 LARGE WIIS	11-3

SPECIFICATIONS

11.1 Small WIIS

11.1.1 Hardware Specifications

NOTE

Specifications for each Small WIIS hardware peripheral are found in the related documentation for that peripheral (►1.3.1).

Max. No. of Physical WS: 8

Max. No. of Imaging WS: 2 - 5

Image Retrieval Times
(Single User):

First Page of Document:
10 Seconds
Next Page of Document:
6 Seconds (average)

Maximum No. of Images:

Per Optical Disk Side: 20,000
Per System: 160,000

Image Printing Speed:

LIS-12: 6 Pages/Minute
LIS-24: 12 Pages/Minute
LCS-15: 7 Pages/Minute

● END

SPECIFICATIONS

11.1 Small WIIS

11.1.2 Software Specifications

Software: VS, PACE, and WIIS

VS Software Features:

Compatibility With all VS Software
TC Software Support:
Wang Systems Network (WSN),
Wang Remote Office, IBM 327x
Synch, Bisynch, and Async Gateway Protocols
Wang WP and WP Plus
Wang Office Automation

PACE Software Features*:

Defined Data Bases
Imaging Functions
Data Base Record Retrieval
Complete User-Defined Data Bases (optional)
Application Builder (optional)
VS COBOL (optional)
Optional Host Language Interface (HLI)

WIIS Software Features:

WIIS Manager
WIIS Document Manager
Document Locator Data Base
Audit Trail (Statistics) Manager
Image System Data Base
Error Analysis Utility
Image Document Capture Retrieval, Storage, and Administrative functions.

Windows:

Number: Four Logical/WS
Tasks: One/Window

* WIIS only requires PACE Run-Time

● END

SPECIFICATIONS

11.2 Large WIIS

(TO BE SUPPLIED)

● END

SECTION 12
ILLUSTRATED
PARTS

SECTION 12 CONTENTS

SECTION 12 ILLUSTRATED PARTS

	<u>Page</u>
12.1 SMALL WIIS	12-1
12.1.1 4250IMG Workstation	12-2
12.1.2 System Cables	12-3
12.2 LARGE WIIS	12-5

12.1 Small WIIS

ILLUSTRATED PARTS

This section provides an illustrated parts breakdown (IPB) of the unique items supplied with the Small WIIS. These items include APC-to-4250IMG conversion hardware and Small WIIS system cables.

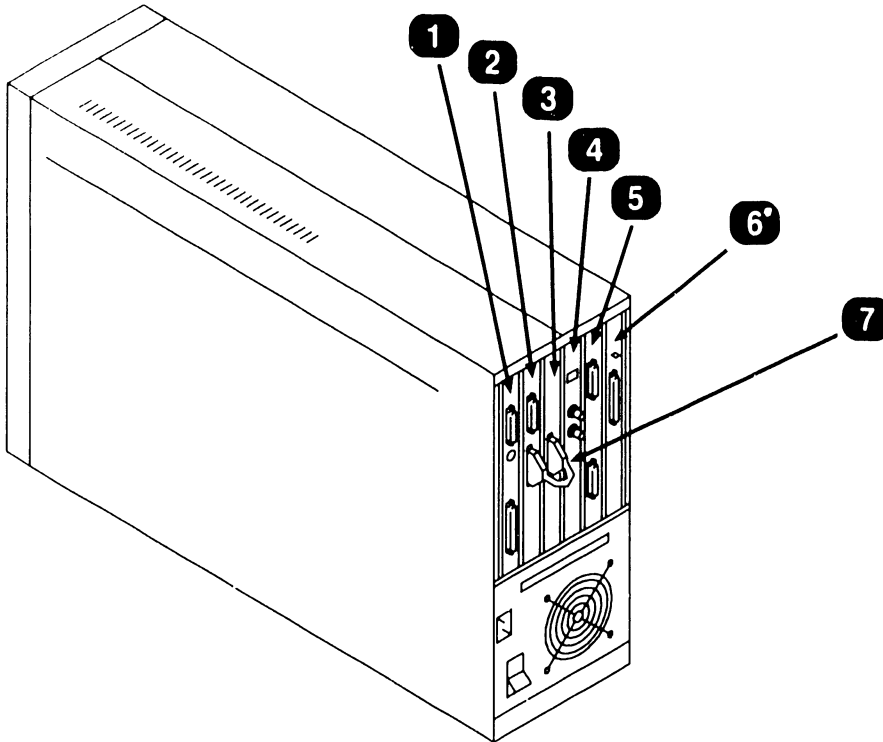
Standard items supplied with each Small WIIS peripheral are identified in the related documentation for that peripheral (▶ 1.3.1).

● END

12.1 Small WIIIS

ILLUSTRATED PARTS

12.1.1 4250IMG Workstation



<i>Item</i>	<i>Part Number</i>	<i>Description</i>
1	210-9821	System PCB, 512K CPU, 512K SIMMS Memory
2	210-8749	16-Inch Image Monitor Controller Board
3	210-8674	Character/Graphics/IBM (CGI) High-Resolution Board
4	210-8310	Local Communications Option (LCO) Board
5	210-8291	Thermal Printer Controller Board
6	210-8777	Scanner Controller Board
7	220-0557	Jumper, 16-Inch Controller Board to CGI Board
Not Shown	210-8690	12-Inch Image Monitor (P/S) Controller Board

● END

12.1 Small WIIS

ILLUSTRATED PARTS

12.1.2 System Cables (Sheet 1 of 2)

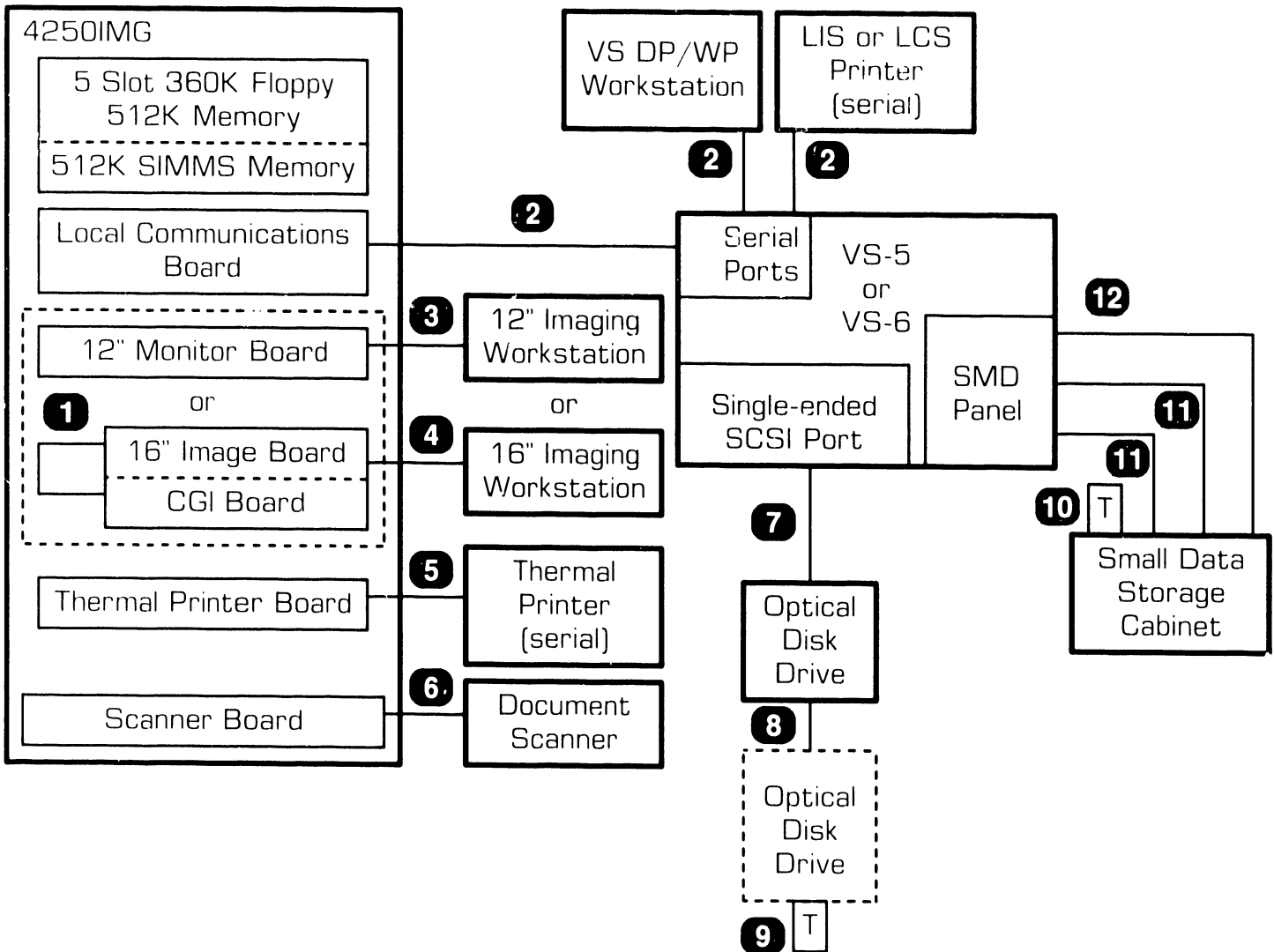
<i>Item</i>	<i>Part Number</i>	<i>Description</i>
1	220-0557 220-0556	Jumper, 16-Inch Cont. Bd. to Hi Res CGI Bd. Jumper, 12-Inch Cont. Bd. to Hi Res CGI Bd.
2	220-0148	BNC/TNC 928 Data Link Cable
3	220-0347 220-0305 220-0348	Video/Keyboard Cable Keyboard-to-PIC Monitor Cable Monitor-to-Base Power Cable
4	None	16-Inch Imaging Workstation Cable (P/O WS)
5	220-0367	Thermal Printer Interface Cable
6	726-3807	Scanner Cable (supplied with Scanner)
7	421-0066	5-ft O.D. Cable (supplied with Drive)
8	220-3621	1-ft O.D. Daisy Cable (supplied with Drive)
9	725-3334	O.D. Terminator (supplied with VS-6)
10	725-2888	Disk Drive Terminator
11	220-3544	External Drive 0 and Drive 1 'B' Cable
12	220-3546	External Drive 'A' Cable

►NEXT

12.1 Small WIIS

ILLUSTRATED PARTS

12.1.2 System Cables (Sheet 2 of 2)



● END

12.2 Large WIIS

ILLUSTRATED PARTS

(TO BE SUPPLIED)

● END

WANG

LABORATORIES, INC

ONE INDUSTRIAL AVENUE LOWELL MASSACHUSETTS 01851 TEL (617) 459 5000 TWX 710 343 6769 TELEX 94 7421

PRINTED IN U.S.A.

END