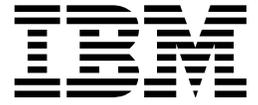
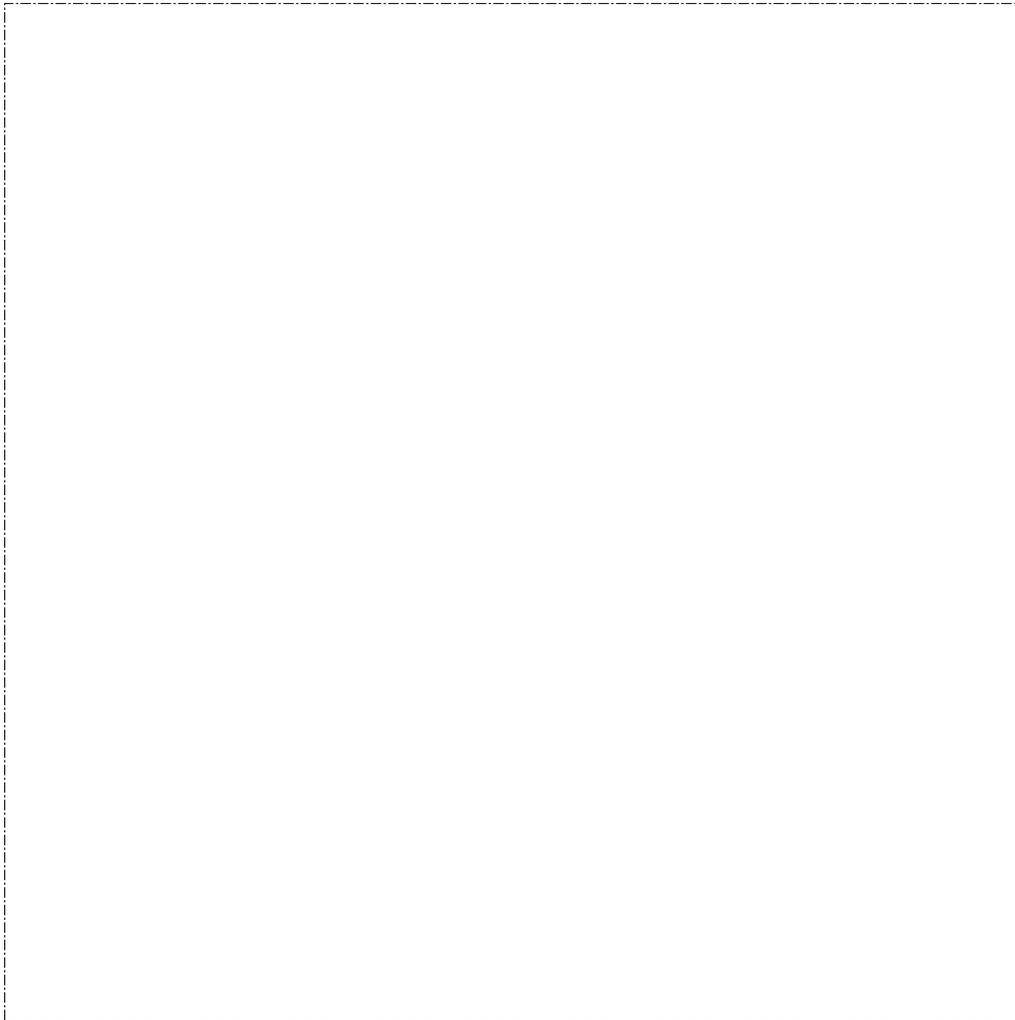


4693 Point of Sale Terminals:



Installation and Operation Guide



4693 Point of Sale Terminals:



Installation and Operation Guide

Note

Before using this information and the product it supports, be sure to read the general information under "Notices" on page v. Translations of the safety notices are found in the *IBM 4693/4694 Point of Sale Terminals: Product Safety Information*, P/N 60G1330, that is shipped with the point of sale terminal if required.

Second Edition (August 1994)

This is the second edition of the *IBM* 4693 Point of Sale Terminals: Installation and Operation Guide*. This edition replaces and obsoletes *IBM 4693 Point of Sale Terminals: Configuration and Operation Guide*, SA27-3978-00.

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The following general safety considerations should be observed whenever you work with electricity or with any electronic equipment.

DANGER

Never work on equipment or connect or disconnect signal cables during periods of lightning activity.

CAUTION:

For your safety, connect equipment requiring electrical power to a properly wired and grounded outlet.

The following general safety considerations should be observed whenever you work with a point-of-sale printer.

CAUTION:

For safety when running the printer test, make sure personal articles such as ties, necklaces, or bracelets do not get caught in the moving print head.

The following general consideration should be observed whenever you exchange batteries in a point-of-sale terminal.

Return used **Ni Cd** (storage retention) batteries to IBM.

Replaceable Lithium Battery inside system unit.

Non-replaceable Lithium Battery inside adapter.

Electronic Emission Notices

Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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This equipment does not exceed Class A limits per radio noise emissions for digital apparatus, set out in the Radio Interference Regulation of the Canadian Department of Communications. Operation in a residential area may cause unacceptable interference to radio and TV reception requiring the owner or operator to take whatever steps are necessary to correct the interference.

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The United Kingdom Telecommunications Act 1984. This apparatus is approved under approval number NS/G/1234/J/100003

for indirect connections to the public telecommunications systems in the United Kingdom.

Laser Product Identification

Some IBM Scanners are laser products. Where required, the scanner has a label that identifies its classification. For example, information on the label in the U.S.A. is shown below.

**Class IIa Laser Product -
Avoid Long-Term
Viewing of Direct Light**

Preface

This guide describes how to setup, configure, and test the IBM 4693 Point of Sale Terminals at the time of installation. It contains five chapters:

- Chapter 1** Provides a model comparison matrix, procedures to configure the terminals, and how to perform utility functions.
- Chapter 2** Provides setup instructions for the point-of-sale terminal.
- Chapter 3** Shows how to install options.
- Chapter 4** Shows how to configure a terminal attached to a store loop or token-ring network.
- Chapter 5** Shows how to test the system.

Related Publications

Documentation for additional information about IBM 4693 Point of Sale Terminals is shown in the following chart.

Related Publication Name	Form No.
<i>IBM 4694 Point of Sale Terminals: Installation and Operation Guide</i>	SA27-4005
<i>IBM 4695 Point of Sale Terminals: Installation and Operation Guide</i>	GA27-4031
<i>IBM Store Systems: Parts Catalog</i>	S131-0097
<i>IBM Store Systems: Hardware Service Manual for Point-of-Sale Input/Output Devices</i>	SY27-0339
<i>IBM 4693, 4694, and 4695 Point of Sale Terminals: Hardware Service Manual</i>	SY27-0337
<i>IBM 4693, 4694, and 4695 Point of Sale Terminals: Maintenance and Test Summary</i>	SX27-3919
<i>IBM Store Systems: Installation and Operation Guide for Point-of-Sale Input/Output Devices</i>	GA27-4028
<i>IBM Store Systems: Supplement for Point of Sale Terminals Installation, and Operation, and Service</i>	GA27-4035
<i>IBM 4690 Store System: Messages Guide</i>	SC30-3598

Related Diskettes

Related Diskettes	Form No.
<i>IBM 4693 Point of Sale Terminals: Reference Diskette</i>	SX27-3918
<i>IBM 4693 Point of Sale Terminals: Diagnostic Diskette</i>	SX27-3928
<i>IBM 4693 Point of Sale Terminals: Support Diskette for Medialess Terminals</i>	SX27-3929

Summary of Changes

SA27-3978-01

This edition of the *IBM 4693 Point of Sale Terminals: Installation and Operation Guide* is a major revision of the book.

- The title has been changed from *IBM 4693 Point of Sale Terminal: Configuration and Operation Guide*.
- Procedures for replacing paper at the journal and customer receipt stations have been removed. Instructions are on the decal under top cover of the printer.
- Procedures for replacing the ribbon cartridge have been removed. Instructions are on the ribbon box.
- Setup procedures are included for the system unit and cash drawer.
- Configuration and test procedures have been revised.

Chapter 1. Overview

This chapter provides overview information on models, features, functions, and configuring your 4693 terminal.

Model Comparison Matrix

	Model 541	Model 421	Model 321	Model 202	Model 3W1
Processor	486SLC/2 25/50 MHz	386SLC 25 MHz	386SX 25 MHz	N/A	386SX 25MHz
Memory (can be upgraded in increments of 2, 4, or 8 MB)	2-16 MB	2-16 MB	2-16 MB	N/A	2-16 MB
Diskette	1.44 or 2.88 MB 3-1/2 Inch (0 or 1 optional)	N/A	N/A	N/A	N/A
Fixed Disk	80 or 160 MB 2-1/2 Inch (0, 1, or 2 optional)	N/A	N/A	N/A	N/A
No. of POS ports	10	10	6	10	7
Dimensions in millimeters in inches	449x475x114 17.7x18.7x4.5	449x475x94 17.7x18.7x3.7	449x475x94 17.7x18.7x3.7	449x475x94 17.7x18.7x3.7	449x475x114 17.7x18.7x4.5
Memory backup	6 hours minimum	6 hours minimum	6 hours minimum	N/A	6 hours minimum
NVRAM (User)	40K (36K)	40K (36K)	40K (36K)	32K (28K)	40K (36K)
Option Adapters	4 (maximum) (One for LAN or Store Loop) is optional.)	2 (maximum) (One for LAN or store loop) is required.	2 (maximum) (One for LAN or Store Loop) is required.	N/A	4 (maximum) (Ethernet built onto system board)
Video	Integrated SVGA	Integrated SVGA	SVGA with an option adapter	Integrated SVGA	
Flat Panel Display	N/A	N/A	N/A	N/A	Yes

Description of Power Modes

Using the Mode Control Switch

The 4693 has no power ON/OFF switch. The Mode Control Switch on the operator panel is used to switch between "Operational" Mode (ON) and "Non-Operational" Mode (OFF).

Throughout this guide, when you are instructed to *Switch Ready mode ON*, this means to press the Mode Control Switch to turn the Ready indicator ON. When you are instructed to *Switch Ready mode OFF*, this means to press the Mode Control Switch to turn the Ready indicator OFF.

ON: In this mode, AC power is present at the terminal and the terminal is fully operational. The Ready Indicator is ON.

OFF: In this mode, AC power is present at the terminal and Storage Retention is disabled. The Ready Indicator is OFF. The terminal is not operational.

STANDBY: In this mode, AC power is present at the terminal and Storage Retention is enabled. The Ready Indicator is OFF.

BACKUP: In this mode, AC power is absent at the terminal and Storage Retention is enabled. All indicators are OFF.

POWER DOWN: In this mode, AC power is absent at the terminal and Storage Retention is disabled. All indicators are OFF.

INTERLOCK SHUTDOWN: In this mode AC power is present but the storage retention battery

pack is disconnected. This prevents the power supply from providing any voltages. All indicators are OFF.

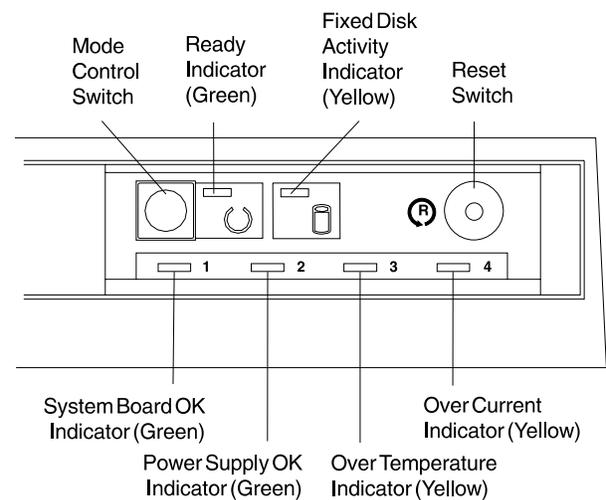


Figure 1-1. Front Panel

Power Mode Table

Mode	AC Voltage	Ready Indicator	Indicator 1	Indicator 2
ON - Fully operational	present	ON	ON	ON
OFF - Storage retention disabled	present	OFF	ON	ON
STANDBY - Storage retention enabled	present	OFF	ON	ON
BACKUP - Storage retention enabled and battery power present	absent	OFF	OFF	OFF
POWER DOWN - Storage retention disabled	absent	OFF	OFF	OFF
INTERLOCK SHUTDOWN - Power supply/battery interlock absent	present	OFF	OFF	OFF

Chapter 2. System Setup

These setup instructions describe how to install a cash drawer and system unit. They also show the cable connections for other I/O devices that can be attached. Setup instructions for the I/O devices are found in *IBM Store Systems: Installation and Operation Guide for Point-of-Sale Input/Output Devices*.

The figure below shows an example of the socket panel at rear of the system unit. The panels differ slightly, depending on the model of your terminal. Table 2-1 shows typical I/O cable connections.

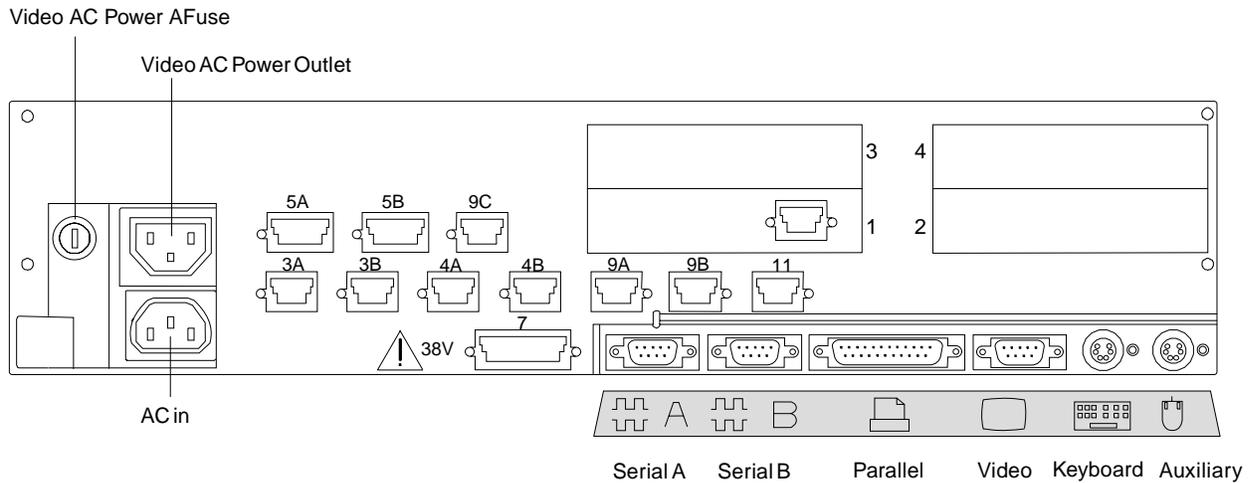


Table 2-1. I/O Cable Connections

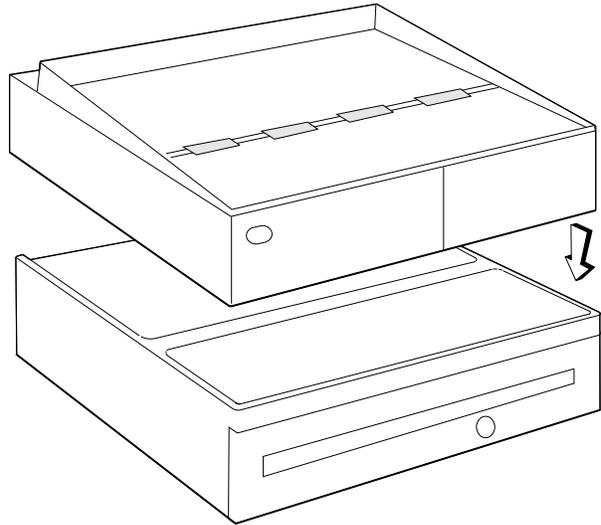
Type of Device	Box No.	Cable No.	System Unit Socket	Notes
Cash Drawer	3	3	3A or 3B	1
40-Character Vacuum Fluorescent Display (VFD), 40-Character Liquid Crystal Display (LCD), 40-Character VFD II, Character/Graphics Display, or Shopper Display	4	4	4A, 4B, 9A, or 9B	1
Keyboard	5	5	5A, 5B, or 	1
Printer	7	7	7	
Scanner or Hand-held Bar Code Reader			4B, 9A, or 9B, or 9C	1
4693 Model 202 (satellite terminal)		11	11	
RS232 Device			 A or  B	1
Parallel Printer				
Video Display				
Mouse				
Option Adapters (in slots 1, 2, 3, or 4)				2
Video AC Power Outlet				
AC Power In (from wall outlet)				

Notes:

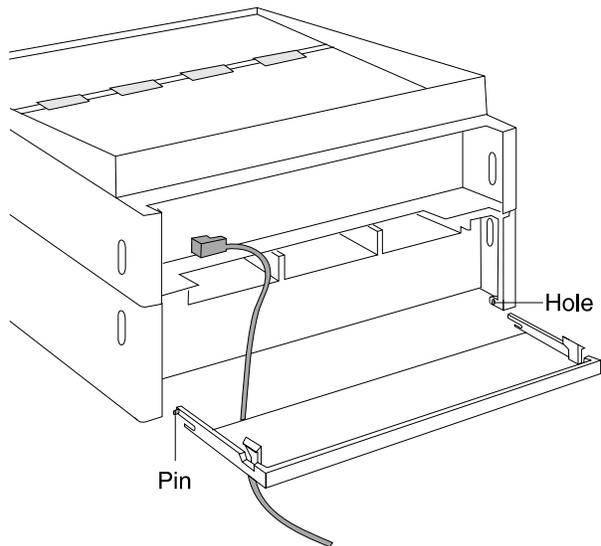
1. Plug the cables according to your Store Planner's instructions.
2. Your terminal may have one or more Option Adapters installed at the time of manufacture. The illustration shows an example of an adapter in slot 1. Follow your Store Planner's instructions for connecting any cables to these adapters.

Installing the Cash Drawer and System Unit

- 1 Place the cash drawer in the desired location.
- 2 Place the system unit on top of the cash drawer, if the unit is integrated.



- 3 Open the rear cover on the cash drawer and remove it.
- 4 Connect the AC power cord to the system unit.
Do not plug the other end of power cord to an outlet yet.
- 5 Route the power cord down toward the bottom of the cash drawer.
- 6 Install the cash drawer rear cover.



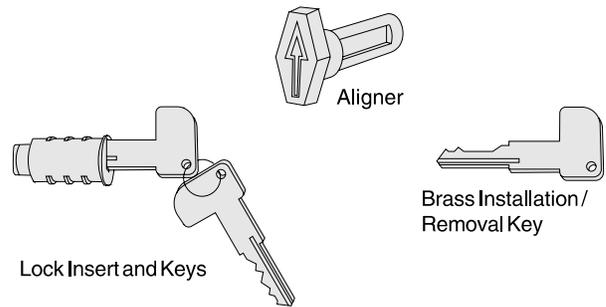
Installing and Removing Keylocks

The system unit can have an optional keylock that prevents unauthorized persons from using the terminal. If no lock is installed, a blank lock insert can be used to cover the opening made for the lock. These procedures show how to install and remove lock inserts and blank lock inserts.

Preparing to Install a Lock or a Blank Lock Insert

To install a lock insert, you need the following items:

- Aligner
- Lock insert and keys
- Brass installation/removal key



To install a blank lock insert, you need the following items:

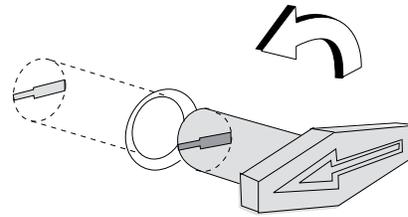
- Blank lock installation handle
- Blank lock insert



Installing a Lock Insert

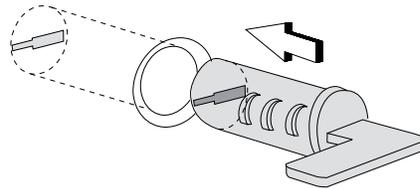
To check that the slot at the bottom of the lock cylinder aligns with the end of the lock insert:

1. Put the aligner into the empty lock cylinder.
2. Gently turn the aligner until you feel it go into the slot at the bottom of the lock cylinder.
3. Turn the aligner so that the arrow points in the proper direction.
4. Remove the aligner.



Be sure each lock and its keys have matching numbers. To install the lock insert:

1. Remove the keys that came with the lock insert.
2. Push the brass installation/removal key **fully** into the lock insert.
3. Hold the lock and brass key so that the key points in the same direction as did the aligner.
4. Push the lock insert and brass key into the empty lock cylinder until you hear it snap into place.
5. Hold the lock insert in place with your finger and remove the brass key.



The lock is now installed.

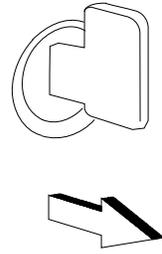
6. Test the lock to be sure it operates correctly with the keys.
7. Return the brass installation/removal key, the aligner, and blank lock installation handle to your supervisor for safekeeping.

Removing a Lock Insert

To remove a lock insert:

1. Put the brass installation/removal key **fully** into the lock.
2. Gently pull the brass key.

The brass key and the lock insert should come out of the lock cylinder together.



Installing a Blank Lock Insert

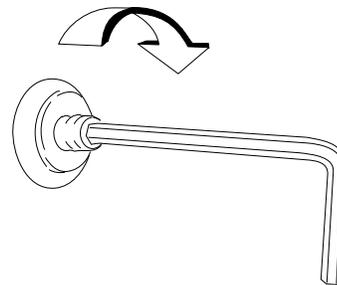
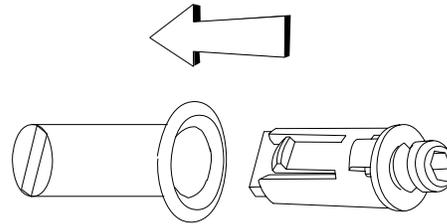
Blank lock inserts are used to cover the opening at the lock cylinder if no lock has been installed. The blank lock inserts have a lug on one end that must be aligned with the slot at the bottom of the lock cylinder.

1. Hold the blank lock insert so that the lug is aligned with the slot in the lock cylinder.
2. Push the blank lock insert into the empty lock cylinder until it is flush with the top of the lock cylinder.

3. Use the blank lock installation handle to turn the locking screw clockwise until it reaches the bottom of the hole. Do not overtighten.

The blank lock insert is now installed.

4. Return the brass installation/removal key, aligner, and blank lock installation handle to your supervisor for safekeeping.



Removing a Blank Lock Insert

To remove a blank lock insert:

Use the blank lock installation handle to turn the locking screw counterclockwise until you can lift the blank lock insert out of the lock cylinder.

Chapter 3. Installing Options

See “General Safety Considerations” on page 3-2 and “Electrostatic Discharge (ESD)” on page 3-2 before you start using the instructions in this section.

These instructions are intended for a qualified service person. They are provided for use when installing or removing and replacing the following features on a 4693 Point of Sale Terminal:

- Extended duration battery
- Fixed disk drive
- Additional memory
- Diskette drive
- Option adapters

Note: The illustrations in this document typically show a 4693-5x1. Your model of 4693 may not look exactly as those shown. You should simply ignore those devices such as the diskette drive and fixed disk that may not be present.

General Safety Considerations

The following general safety considerations should be observed whenever you work with electricity or with any electronic equipment.

DANGER

Never work on equipment or connect or disconnect signal cables during periods of lightning activity.

CAUTION:

For your safety, connect equipment requiring electrical power to a properly wired and grounded outlet.

Note

Translations of the safety notices can be found in *IBM 4693 and 4694 Point of Sale Terminal: Translated Safety Notices*, P/N 60G1330.

Electrostatic Discharge (ESD)

Warning: ESD damage can occur when there is a difference in charge between the part, the product, and the service person. No damage occurs if the service person and the part being installed are at the same charge level.

ESD Damage Prevention

Anytime a service action involves physical contact with logic cards, modules, back-panel pins, or other ESD sensitive (ESDS) parts, the service person must be connected to an ESD common ground point on the product through the ESD wrist strap and cord.

The ESD ground clip can be attached to any frame ground, ground braid, green wire ground, or the round ground prong on the AC power plug. Coax or connector outside shells can also be used.

Handling Removed Cards

Logic cards removed from a product should be placed in ESD protective containers. No other object should be allowed inside the ESD container with the logic card. Attach tags or reports that must accompany the card to the outside of the container.

Installing an Extended Duration Battery

1. Remove the power supply. See "Installing a Power Supply" on page 3-9.
2. Remove the cooling fan and plenum and battery assembly from the power supply. See "Installing a Cooling Fan and Plenum" on page 3-10.
3. For **Models 3X1 and 4X1 only**, remove the fan from the plenum and discard the plenum. The fan is used in the new plenum.
4. For **Models 541 and 551 only**, discard the old fan and plenum.
5. Align the tabs at the top of the plenum with the cutouts in the top of the power supply. Pivot the assembly downward while aligning the locating tabs at the bottom of the plenum with the cutouts in the side of the power supply. Press downward until the plenum snaps into place. See Figure 3-1.

6. Install the fan into the plenum so that the air flow arrows on the plenum and the fan housing are pointing in the same direction. Push the top of the fan in first, then snap it in at the bottom.

Note: The air flow direction is **into** the power supply from the logic tray area.

7. Plug the fan cable into the connector on the power supply.
8. Reinstall the power supply. See "Installing a Power Supply" on page 3-9.

Note: Be sure to install the new interlock assembly supplied with the battery and plenum assembly.

Important Information

Return used **Ni Cd** (storage retention) batteries to IBM for disposal.

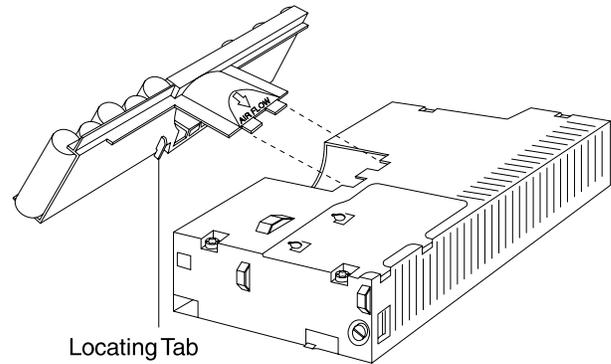


Figure 3-1. Installing the Plenum and Battery Assembly

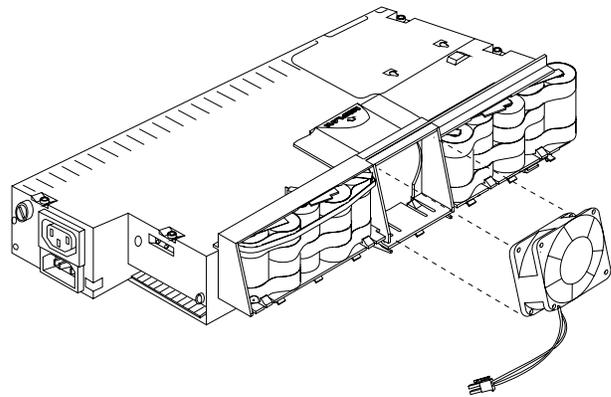


Figure 3-2. Installing the Fan

Installing a Fixed Disk Drive

Warning: Establish personal grounding before touching this unit. See “Electrostatic Discharge (ESD)” on page 3-2.

1. Remove the logic tray. See “Installing a Logic Tray” on page 3-11.
2. Remove any long option adapter cards installed that interfere with access to the fixed disk connectors on the front edge of the system board. See “Installing an Option Adapter” on page 3-7.

Note: 4693 Model 541 has two locations in the logic tray for installing fixed disk drives. If you are installing the first fixed disk, it must be located on the left side (viewed from the front). If you are installing an additional fixed disk, it must be located on the right side (viewed from the front). See Figure 3-3.

3. Slide the fixed disk into the correct location in the logic tray until it latches into position.
4. Attach the fixed disk cable to the connector on the front edge of the system board adjacent to the drive. The cables and connectors are keyed so that they cannot be connected incorrectly.
5. Reinstall the logic tray. See “Installing a Logic Tray” on page 3-11.

After installing a fixed disk, you should run the configuration program. Also, if this is the first

fixed disk, a system partition must be created on the disk. This requires the use of a backup copy of the system diskettes. See Chapter 4 on page 4-1.

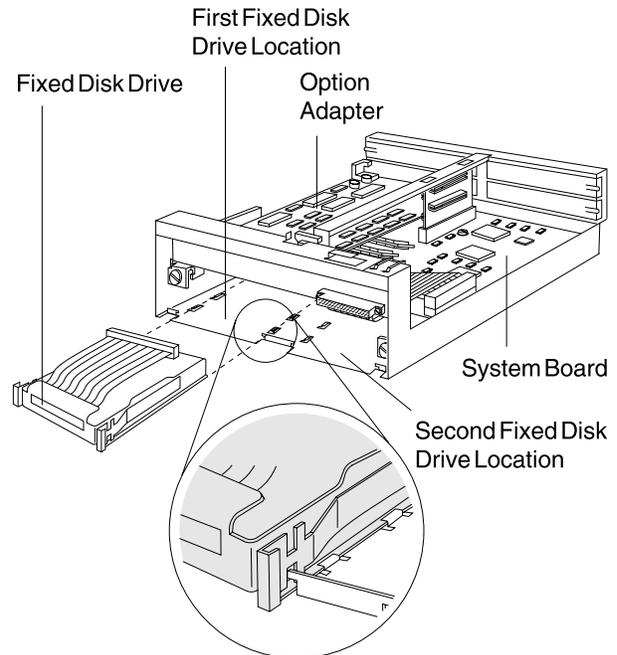


Figure 3-3. Fixed Disk Drive Installation

Installing Additional Memory

1. Remove the logic tray. See “Installing a Logic Tray” on page 3-11.
2. If your terminal has an option adapter installed over the memory modules, the option adapter must be removed to gain access to the modules. See “Installing an Option Adapter” on page 3-7.
3. There are two memory module connectors. If you are leaving the current module in the system board and adding an additional module, continue at step 4. If you are exchanging the existing memory modules with new modules, remove them by pushing the module retainers outward simultaneously until the module is released. Lift the module from the connector. See Figure 3-4 and Figure 3-5.
4. Plug each new memory modules into its connector and rotate it downward until it snaps into place.

Note: You can use either or both connectors. The terminal can determine the amount of memory automatically, wherever it is plugged.

5. Install any option adapters that were removed. See “Installing an Option Adapter” on page 3-7.
6. Reinstall the logic tray. See “Installing a Logic Tray” on page 3-11.
7. You can observe the memory size that is being sensed when you switch Ready Mode ON. The memory size is displayed as it is incremented during power-on self-test (POST). You should verify that the expected memory size is displayed.

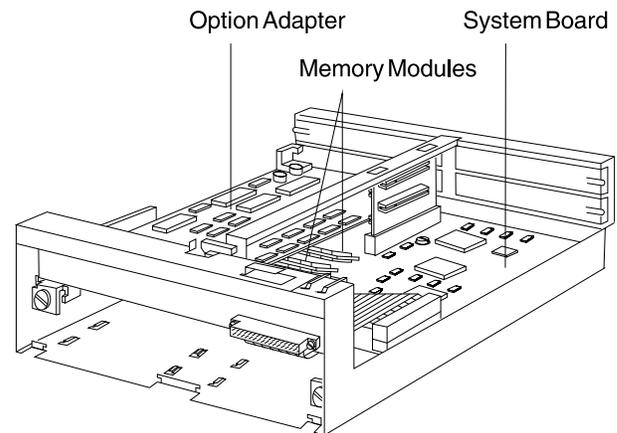


Figure 3-4. Memory Module Location

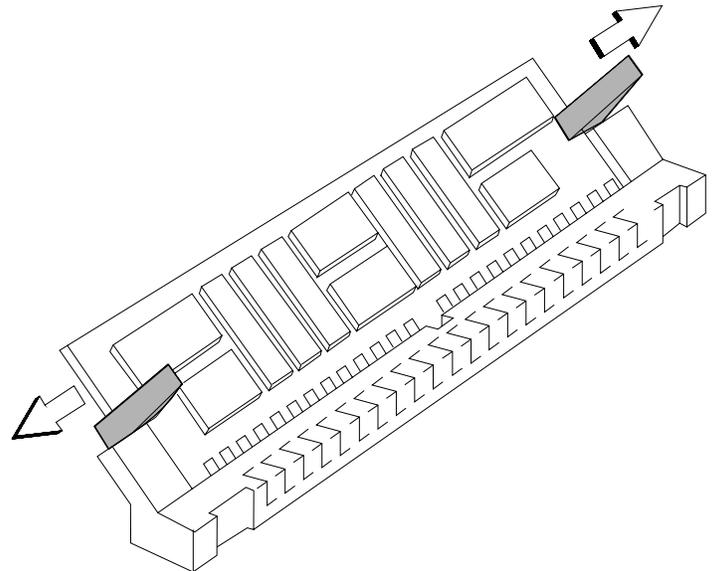


Figure 3-5. Removing Memory Modules

Installing a Diskette Drive

1. Remove the power supply. See "Installing a Power Supply" on page 3-9.
2. Remove the logic tray. See "Installing a Logic Tray" on page 3-11.
3. Remove any long option adapters that are installed that interfere with access to the diskette connector on the front of the system board. See "Installing an Option Adapter" on page 3-7.
4. Attach the longer of the two cables to the diskette drive. See Figure 3-6. The folded end of the cable will be attached to the logic tray later.
5. Align the four guides on the bottom of the diskette drive with the elongated holes in the top of the power supply. Then slide the diskette drive to the left until the latch engages. Route the cable as shown in Figure 3-6.
6. Reinstall the power supply. See "Installing a Power Supply" on page 3-9.
7. Attach the shorter of the two cables to the system board. The connector is keyed so you cannot plug it incorrectly. See Figure 3-7.
8. Mount the connector on the other end of the short cable to the logic tray using the two screws provided.
9. Reinstall any option adapters that were removed.
10. Slide the logic tray in far enough to enable you to connect the cable from the diskette drive into the connector at the front of the logic tray.
11. Route the long diskette drive cable as shown in Figure 3-8 and plug it into the connector mounted at the front of the logic tray. Make sure the cable is held in place at the top of the logic tray as shown.
12. Reinstall the logic tray. See "Installing a Logic Tray" on page 3-11.
13. Reinstall the operator panel, interlock assembly, and front panel.

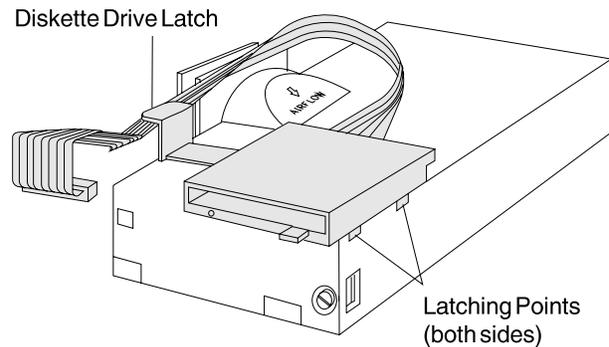


Figure 3-6. Diskette Drive

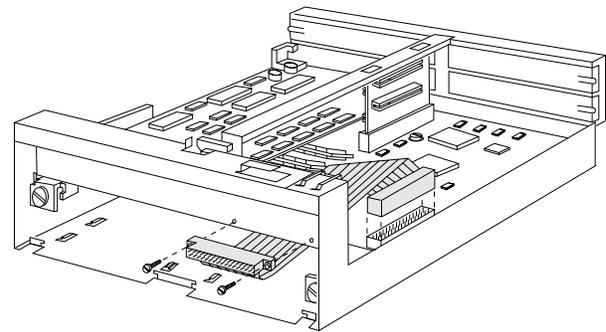


Figure 3-7. Attaching the Short Diskette Drive Cable to System Board

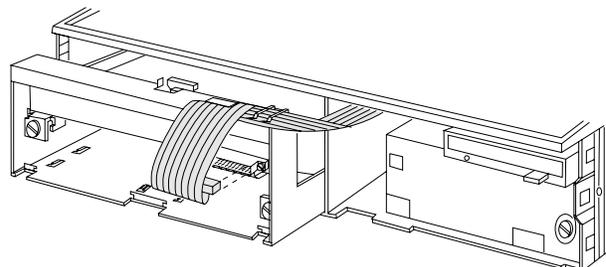


Figure 3-8. Attaching the Long Diskette Drive Cable to Logic Tray

Installing a Front Panel

Warning: Establish personal grounding before touching this unit.

1. Ensure that the keylock (if present) behind the front panel door is turned all the way clockwise to the unlocked position. Notice the locked and unlocked symbols next to the keylock.
2. To disengage the front panel, press the buttons on each side at the front (one at a time) while gently pulling forward on each side of the panel until both sides are released from the latches. Then press down on the center release in the top center of the panel and slide the panel forward to remove it.
3. To install the front panel, reverse this procedure.

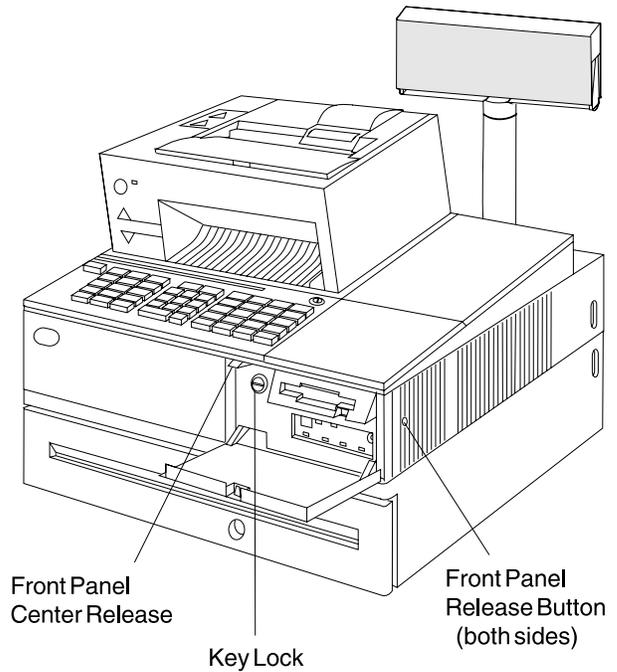


Figure 3-9. Front Panel

Installing an Option Adapter

1. Remove the logic tray. See "Installing a Logic Tray" on page 3-11.
2. Note which slot the option adapters are plugged into. See Figure 3-10.
3. Loosen the retaining screw holding the adapter at the rear connector panel.
4. Remove the option adapter by sliding it out to the side. Reverse this procedure to complete installing the option adapter.

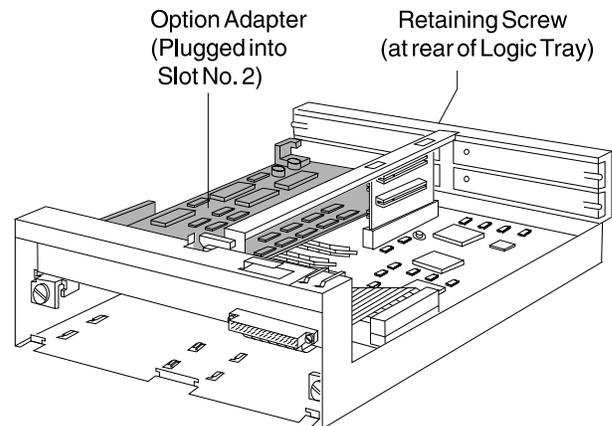


Figure 3-10. Option Adapter

Installing Interlock and Operator Panel Assembly

Warning: Establish personal grounding before touching this unit. See “Electrostatic Discharge (ESD)” on page 3-2.

1. Remove the front panel. See “Installing a Front Panel” on page 3-7.
2. Turn the interlock release to the vertical position to disengage the interlock assembly. See Figure 3-11. Notice the locked and unlocked symbols next to the release.
3. Pull the interlock assembly forward using the small plastic pull tab provided.

Note: The storage retention battery is mounted on the interlock assembly in some 4693 terminals.

Continue with the following steps if removing the operator panel.

4. There are three tabs holding the operator panel in place. See Figure 3-11.
5. Unlatch the left side by gently prying outward on the latch with a small screwdriver while gently pulling forward on the left side of the panel.
6. Unlatch the right side by pushing the latch free with a small screwdriver through the opening in the right side frame while gently pulling forward on the right side of the panel.
7. Unlatch the center of the operator panel by using a small screwdriver to press upward on

the center latch until the panel can be pulled free of the unit.

8. Reverse this procedure to replace the operator panel and interlock assemblies.

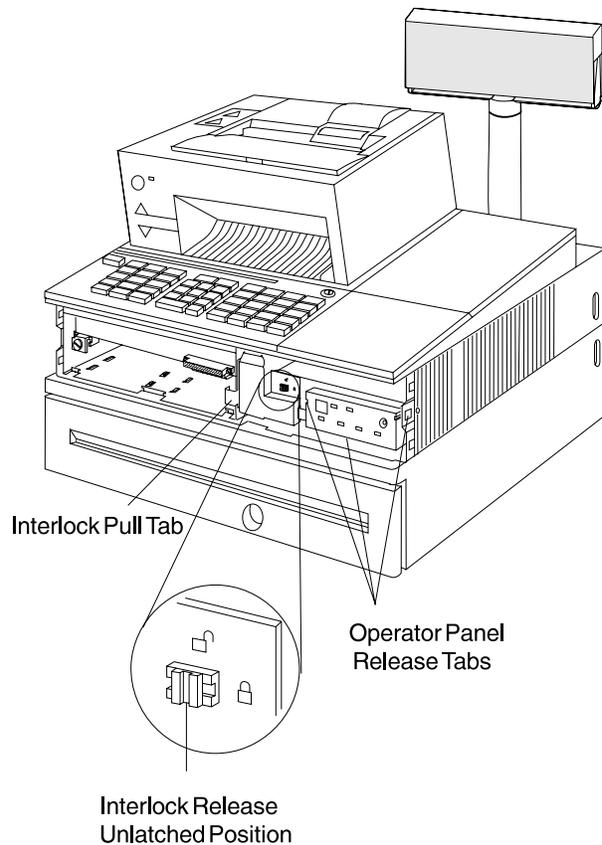


Figure 3-11. Interlock and Operator Panel Removal

Installing a Power Supply

Warning: Establish personal grounding before touching this unit. See “Electrostatic Discharge (ESD)” on page 3-2.

1. Switch Ready mode OFF.
2. Disconnect the AC power cords from the rear connector panel.
3. Remove the front panel. See “Installing a Front Panel” on page 3-7.
4. Remove the interlock assembly. See “Installing Interlock and Operator Panel Assembly” on page 3-8.
5. Remove the operator panel. See “Installing Interlock and Operator Panel Assembly” on page 3-8.

Note: Observe the routing of the diskette drive cable (if present). This makes replacing the power supply easier.

6. Disconnect the diskette drive cable (if present) from the connector at the front of the logic tray.
7. Turn the power supply retaining screw, located at the lower right front counterclockwise, 2 to 2 1/2 turns or until the locking tab is fully out of the slot. See Figure 3-12.
8. Pull the power supply toward the front and remove it from the terminal.

Note: It may be difficult to pull the power supply toward the front since it is attached to the rear connector panel. Try prying gently at the lower right corner to start the power supply forward.

9. To replace the power supply, reverse this procedure.

Note: When replacing the power supply, you must push it inward with enough force to overcome the resistance provided by the rear connector panel. You can hear it snap into place when it is fully seated. **Make sure that the retaining screw lug is aligned to the corresponding slot in the frame.**

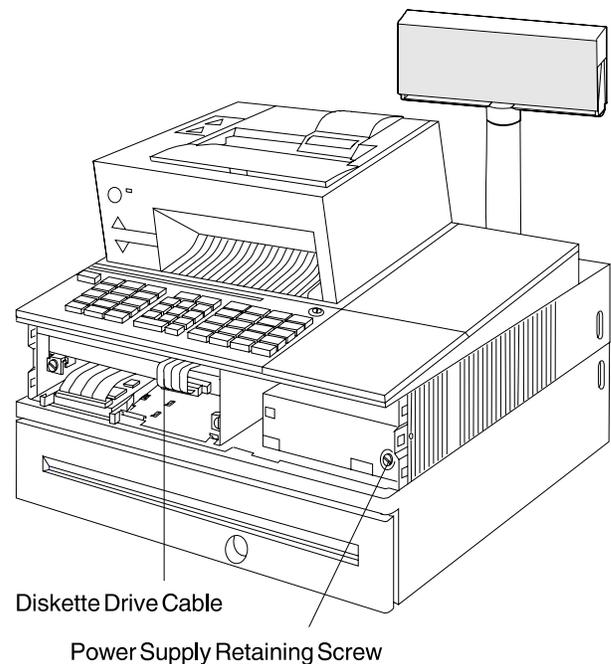


Figure 3-12. Power Supply

Installing a Cooling Fan and Plenum

1. Remove the power supply. See "Installing a Power Supply" on page 3-9.
2. Set the power supply on its side with the plenum facing upward.
3. Disconnect the fan connector from the power supply by depressing the latch located on top of the connector.
4. Remove the plenum by pulling or prying outward on the two plenum release tabs until the plenum is disengaged from the power supply.
5. Remove the fan from the plenum by prying the fan release tabs on the bottom of the plenum away from the fan housing until the fan can be removed. See Figure 3-13.

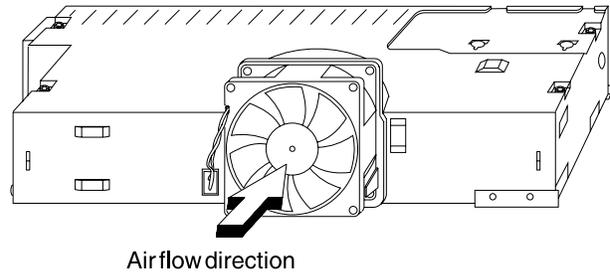


Figure 3-13. Cooling Fan

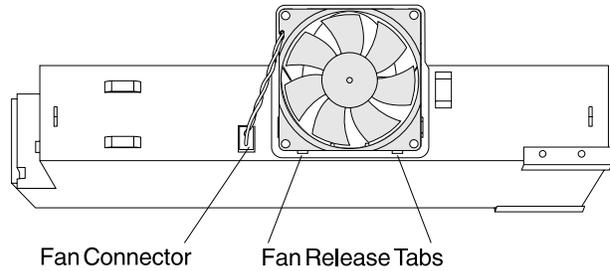


Figure 3-14. Removing the Cooling Fan

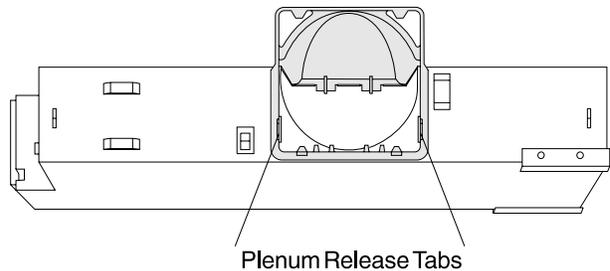


Figure 3-15. Removing the Plenum

Installing a Logic Tray

Warning: Establish personal grounding before touching this unit. See “Electrostatic Discharge (ESD)” on page 3-2.

Note: If your terminal is attached to a store loop or PC baseband network, removing the logic tray may interrupt loop or network communications.

Store Loop: Disconnect the store loop cable at the store loop receptacle before disconnecting it from the adapter.

PC Network Baseband: Connect the baseband cables to the wrap or shorting plug after disconnecting them from the adapter.

Ethernet and Token-Ring: These should not require a wrap or shorting plug. Check with the network administrator for any restrictions.

1. Switch Ready mode OFF.
2. Disconnect the AC power cords from the rear connector panel.
3. Disconnect any cables attached to option adapters at the rear of the terminal. Note the location of the cables to make it easier to reconnect them later.
4. Remove the front panel. See “Installing a Front Panel” on page 3-7.
5. Remove the interlock assembly. See “Installing Interlock and Operator Panel Assembly” on page 3-8.
6. Disconnect the diskette drive cable from the connector at the front of the logic tray.
7. Turn the retaining screws, located on each side at the front of the logic tray, counterclockwise approximately 2 1/2 turns. See Figure 3-16.

8. Using the handle located at the front top of the tray, pull the logic tray forward until it can be removed from the terminal.
9. To remove the logic tray, reverse this procedure.

Note: When replacing the logic tray, you must push it inward with enough force to overcome the resistance provided by the rear connector Panel. You can hear it snap into place when it is fully seated. **Make sure that the retaining screw lugs are aligned to the corresponding slots in the frame.**

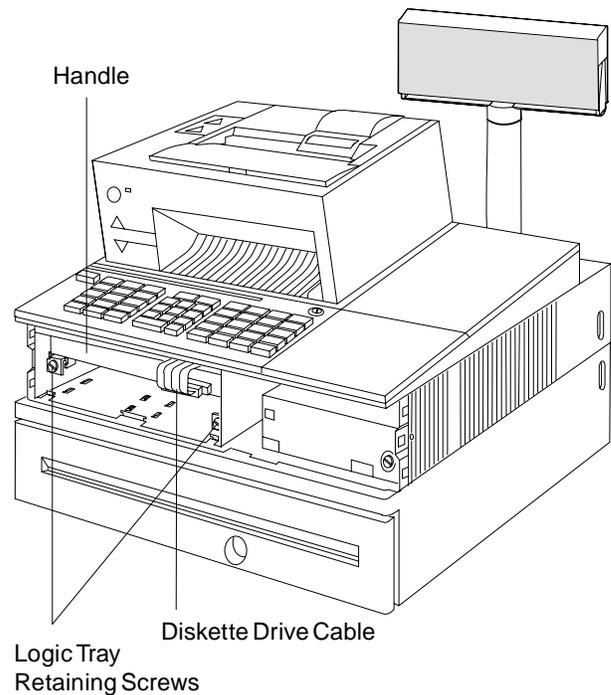


Figure 3-16. Logic Tray

Chapter 4. System Configuration

This chapter provides information on how to configure and test the *IBM 4693 Point of Sale Terminal* attached to either a store loop or a token-ring network. It is necessary to perform the following tasks to ensure that the terminal operates correctly:

Read Before Starting to Configure

- Check that all cables are properly installed.
- Ensure that the system unit power cord is connected to a properly grounded AC power outlet.
- Connect the terminal to the store loop or network if that has not already been done.
- Be aware that many different keyboards may be attached to the 4693 terminal and that all keyboards do not have the same control keys defined. The programs recognize the keyboard attached and prompt the user accordingly.
- System programs are available on diskette to support medialess terminals. The medialess terminals include the Model 541 terminals that do not have an optional fixed disk, Model 421, and Model 321 terminals. (Since a 4693 Model 202 satellite terminal is under control of the terminal to which it is attached, it does not require the programs.) The diskette is the *IBM 4693 Point of Sale Terminals: Support Diskette for Medialess Terminals, SX27-3929*. It is shipped with 4693 Model 541 terminals and with the IBM PS/2 Store Loop Adapter. It is also available for order through your IBM Marketing Representative. For a more detailed list, see "Related Diskettes" on page viii.

The diskette image for Model 3W1 is the *IBM 4693 Point of Sale Terminal Model 3W1: Support Diskette for Medialess Terminals*. The diskette image is included with the 4690 Operating System. Instructions for installing and using the diskette image at the store controller or network server are in a README.DOC file present on the support diskette. The network address of each medialess terminal that requires the diskette image must be defined at the store controller or network server.

The system programs can then be downloaded over the user's in-store communication network to the medialess terminals. The system programs do not remain permanently in the medialess terminals. They must be downloaded each time they are needed.

- The 4693 has no power ON/OFF switch. The Mode Control Switch on the operator panel is used to switch between "Operational" Mode (ON) and "Non-Operational" Mode (OFF).

Throughout this guide, when you are instructed to *Switch Ready mode ON*, this means to press the Mode Control Switch to turn the Ready indicator ON. When you are instructed to *Switch Ready mode OFF*, this means to press the Mode Control Switch to turn the Ready indicator OFF.

Preparing to Configure the Terminal

To perform the configuration procedure, the following assumptions are made:

1. You have setup the terminal according to instructions.
2. You have loaded paper in the printer.
3. You have installed a ribbon in the printer and have run the printer test.
4. Your store controller or network server and the store loop or other network are operational.

Depending on the type of terminal, several situations exist that determine how to perform the configuration procedure. Descriptions are provided in this chapter for configuring the following:

- An IBM 4693 Model 541 terminal that contains an optional fixed disk.
- An IBM 4693 terminal that does not contain a fixed disk. This includes a 4693 Model 541 without the optional fixed disk, a Model 421, Model 3W1 or a Model 321. For ease of reference, a terminal without a fixed disk is referred to as a **medialess** terminal.

Differences in Keyboards

There are several differences regarding the use of keyboards that may be installed on your terminal. If you are not already familiar with them, it may be helpful to review the descriptions that follow.

- On keyboards that have a **Ctrl** key, the **S1** and **S2** functions require a combination of two keys:
 1. Press and hold the **Ctrl** key.
 2. Then, press the **S1** or **S2** key.
- If no **Ctrl** key is present, use only the **S1** or **S2** key.

For ease of use in this guide, when you must press more than one key, the keying sequence is shown as follows:

Press **Ctrl + S1** or **Ctrl + S2**, as appropriate.

On the enhanced alphanumeric keyboard:

The **ESC** (Escape) key functions as **S1**.
The **ENTER** key functions as **S2**.

Choose one of the following options:

1. If the 4693 is attached to a store loop, go to "Configuring a Terminal Attached to a Store Loop" on page 4-3.
2. If the 4693 is attached to a token-ring network, go to "Configuring a Terminal Attached to a Token-Ring Network" on page 4-4.
3. If you have a Model 4693 Ethernet Adapter or a Model 3W1, go to "Configuring a Terminal for an Ethernet Network" on page 4-6.

Configuring a Terminal Attached to a Store Loop

1. Power ON all devices attached to the 4693 that have their own power switch.
2. Switch Ready mode ON.

Note: Several power-on self-test (POST) messages are expected since the 4693 has not been configured. The occurrence of POST messages causes the image of the support diskette for medialess terminals to automatically download into the 4693. This may take several minutes.

3. After the image is loaded, the POST error messages are displayed again. As the messages appear, continue following the instructions or prompts that are displayed.

Note: The time and date values are set to a default setting if you choose not enter them during the configuration process.

4. When message **M0101** is displays, answer **YES**.

The configuration program begins.

5. When message **To activate the System Configuration** displays, configuration is complete. Switch **POWER OFF**.

Choose one of the following options:

- To load the operating system and turn the terminal over to the customer, power ON. This procedure is complete.
- To run utilities or tests, go to "Loading the Image of the Support Diskette for Medialess Terminals" on page 4-7.

Recommended utilities programs to run are:

- View or print configuration
- Set time and date (if not already done)
- Enter/print vital product data

Recommended test programs to run are:

- POS device tests
- System unit tests

Note: Refer to the *IBM 4693, 4694, and 4695 Point of Sale Terminals: Hardware Service Manual* for detailed information on how to run utilities and tests.

6. To collect vital product data, go to "Collecting Vital Product Data" on page 4-10.

Configuring a Terminal Attached to a Token-Ring Network

When attached to a token-ring network, most operating systems require that the token-ring adapter address be defined at the network server. Each token-ring adapter has a unique 12-character address identified by message **AA: nnnnnnnnnnnn**.

1. Power ON all devices attached to the 4693 that have their own power switch.
2. Switch Ready mode ON.
3. The following message is displayed:

AA: nnnnnnnnnnnn
DR: "F4"-04 "F6"-16

Notes:

- a. The message **AA: nnnnnnnnnnnn** represents the "adapter address". The 12 characters following the **AA** are the address of the 4693 token-ring network Adapter.
 - b. The message **DR: "nn"-nn "nn"-nn** represents the network "data rate" choices. The characters following the **DR:** are the key sequences required to select the network data rate and wait until the terminal resets.
4. Record the **Token-Ring adapter address** on the Quick Reference Card, located under the system unit. Provide the adapter address to your network administrator and ask the administrator for the network data rate (either 4 Mbps or 16 Mbps). Resume this procedure after your network administrator has defined the adapter address at the network server (if required by the operating system).
 5. Enter the appropriate key sequence corresponding to the desired network data rate.
Note: Several POST error messages are expected since the 4693 has not been configured. The occurrence of POST messages causes the image of the support diskette for medialess terminals to load into the 4693 automatically. This may take several minutes.
 6. After the image is loaded, POST messages are displayed again. As the messages appear, continue following the instructions or prompts that are displayed.
Note: The time and date values are set to a default setting if you choose not to enter them during configuration.
 7. When message **M0101** displays, answer **YES**.
The configuration program begins.
 8. When message **To activate the System Configuration** displays, configuration is complete.
Switch Ready mode OFF.

Choose one of the following options:

- To load the operating system and turn the terminal over to the customer, switch Ready mode ON. This procedure is complete.
- To run additional tests or utilities, go to “Loading the Image of the Support Diskette for Medialess Terminals” on page 4-7.

Recommended utilities to run are:

- View or print configuration
- Set time and date (if not already done)
- Enter/print vital product data

Recommended tests to run are:

- POS device tests
- System unit tests

Note: Refer to the *IBM 4693, 4694, and 4695 Point of Sale Terminals: Hardware Service Manual* for detailed information on how to run utilities and tests.

9. To collect vital product data, go to “Collecting Vital Product Data” on page 4-10.

Configuring a Terminal for an Ethernet Network

Read Before Starting

- To view the Ethernet address during configuration using a point-of-sale display do the following:

System Keyboard Press the **CNTRL/ALT/HOME** simultaneously.

Point-of-Sale Keyboard Turn the keylock to another position and Press **S1** or **S2** to scroll up and down.

- If you are using a video display the screen stops on the Ethernet address as long as the terminal is not connected to the Ethernet network.

- Power ON all devices attached to the 4693 that have their own power switch.
- Switch Ready mode ON.
- If you have a Model 3W1, go to Step 4. If you have a Model 4693 with an Ethernet Adapter card installed the following message displays:

AA: nnnnnnnnnnnn.

Note: The message **nnnnnnnnnnnn** represents the Ethernet Address. The 12 characters following the **AA** are the Ethernet address. Go to Step 5.

- The following message displays on the Model 3W1.

AA: nnnnnnnnnnnn

"F4"-RPL "F6"-BOOTP (Using a system keyboard)

"S1"-RPL "S2"-BOOTP (Using a POS keyboard)

Note: The message **AA: nnnnnnnnnnnn** represents the Ethernet Address. The 12 characters following the **AA** are the 3W1 Ethernet Address.

- Record the **Ethernet Address** on the Quick Reference Card, located under the system unit. Provide the Ethernet address to your network administrator. Resume this procedure after your network administrator has defined the Ethernet address at the network server.
- Enter the appropriate key sequence corresponding to the desired network protocol.

Note: Several POST error messages are expected since the Model 3W1 has not been configured. The occurrence of POST error messages causes the image of the support diskette for medialess terminals to load into the Model 4693 or the Model 3W1 automatically. Press **F3** or **S1** to continue. This may take several minutes.

- After the image is loaded, POST messages are displayed again. As the messages appear, continue following the instructions or prompts that are displayed.

Note: The time and date values are set to a default setting if you choose not to enter them during configuration.

- When message **M0101** displays, answer **YES**.

The configuration program begins.

- When message **To activate the System Configuration** displays, configuration is complete. Switch Ready mode OFF.

Choose one of the following options:

- To load the operating system and turn the terminal over to the customer, switch Ready mode ON. This procedure is complete.
- To run additional tests or utilities, go to “Loading the Image of the Support Diskette for Medialess Terminals.”

Recommended utilities to run are:

- View or print configuration
- Set time and date (if not already done)
- Enter/print vital product data

Recommended tests to run are:

- POS device tests
- System unit tests

Note: Refer to the *IBM 4693, 4694, and 4695 Point of Sale Terminals: Hardware Service Manual* for detailed information on how to run utilities and tests.

10. To collect vital product data, go to “Collecting Vital Product Data” on page 4-10.

Loading the Image of the Support Diskette for Medialess Terminals

Before Beginning

- When using any POS keyboard that has a **Ctrl** key, the **S1** and **S2** functions require a combination of two keys. First press and hold the **Ctrl** key, then press the **S1** or **S2** key.
- In approximately 10 to 30 seconds after power is switched ON, a cursor or minus (–) sign appears in the upper right corner of the display for a few seconds. The key sequence that causes the image of the support diskette for medialess terminals to load must be entered during the time the cursor is present.

1. Switch Ready mode ON and look for the cursor to display in the upper right corner of the display.
2. When the cursor displays, press the appropriate key(s).

POS Keyboard – **S1**

PS/2 Type Keyboard – **Ctrl + Alt + Ins**

3. The image of the support diskette for medialess terminals is loaded and the MAIN MENU is displayed. You can now select the various Utilities and tests from this menu. See the *IBM 4693, 4694, and 4695 Point of Sale Terminals: Hardware Service Manual* for more detail about the support diskette for medialess terminals.

MAIN MENU

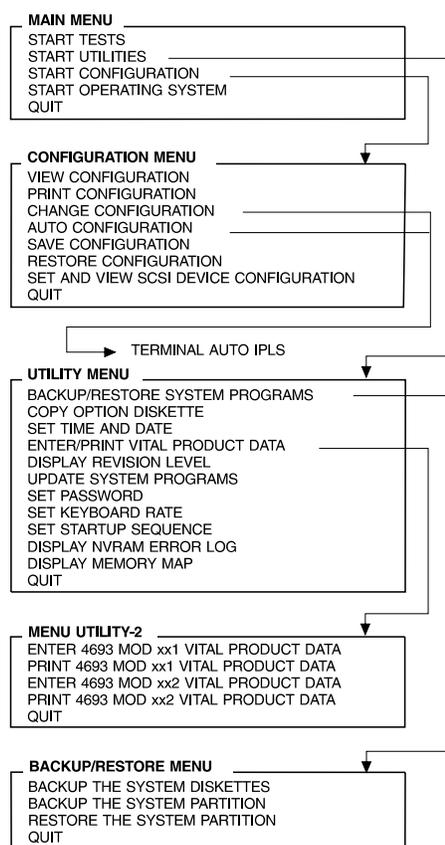
START TESTS
 START UTILITIES
 START CONFIGURATION
 START OPERATING SYSTEM
 QUIT

The 4690 Operating System provides online tests for the 4693. See the *IBM 4690 Store System: Messages Guide*. SC30-3598.

Menus

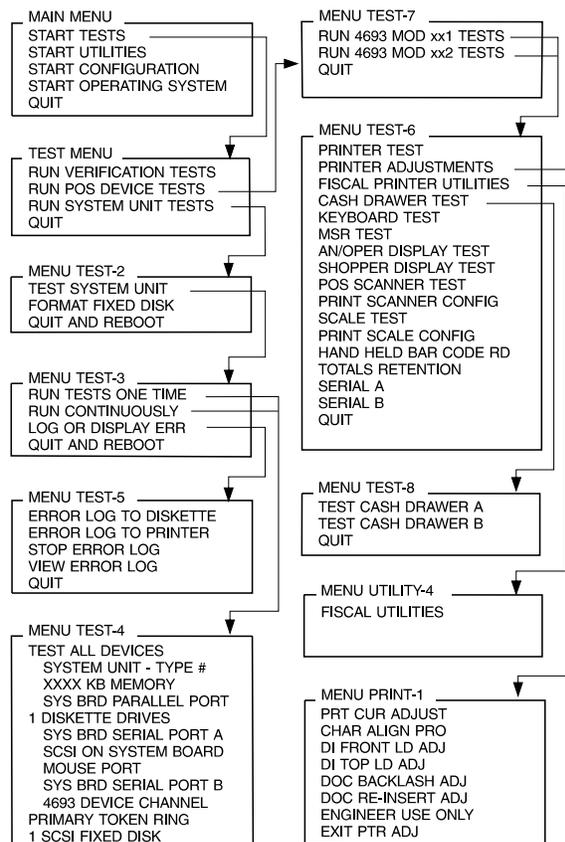
The figure in the left column shows menus related to Model 4693 configuration and utilities. The figure in the right column shows menus related to tests. The test menus include detailed tests for use by service personnel. User personnel usually run Verification tests, which verify that the terminal devices are functioning and are less detailed than most other tests. See Chapter 5 on page 5-1.

Configuration and Utility Menus



Menus vary with models, features installed, and software levels.

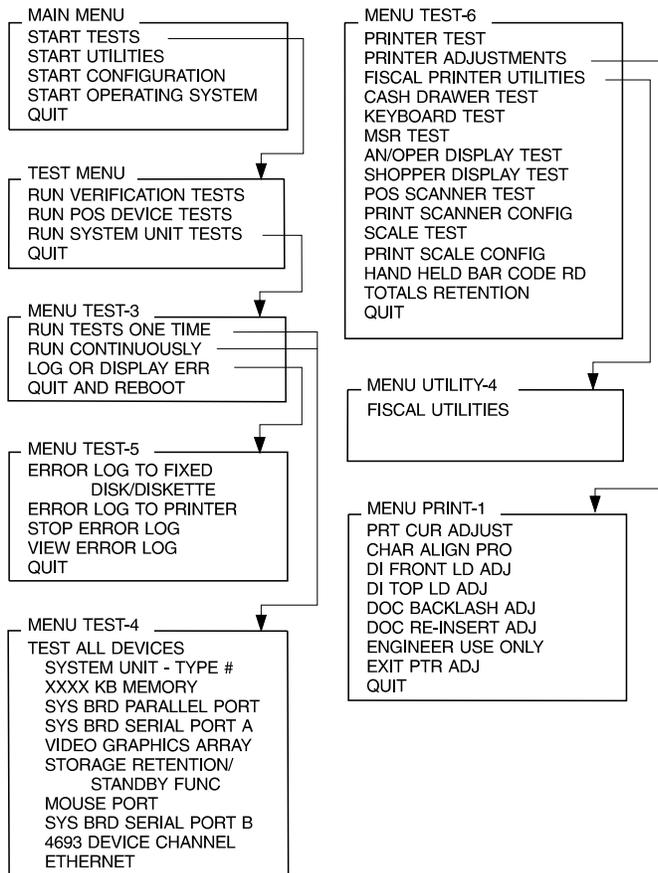
Test, Printer Adjustment, and Fiscal Printer Utilities Menus



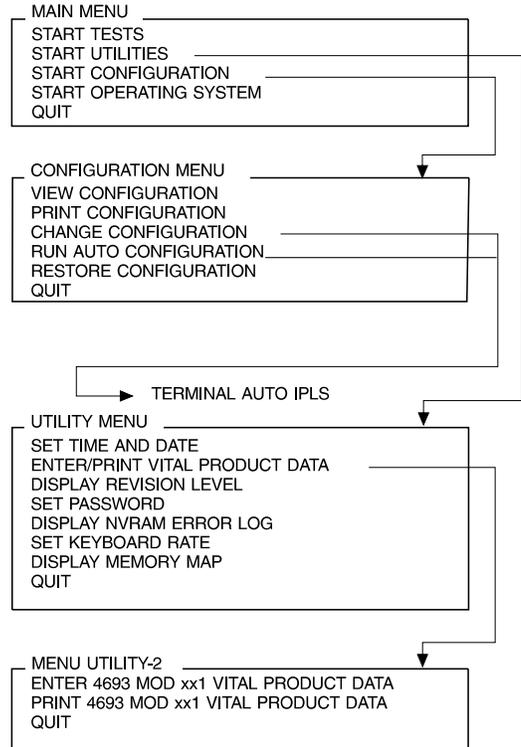
Menus vary with models and with features installed.

Testing the Model 3W1: The test procedures are similar to those for other models of the 4693. However, the reference diskette menus are unique. See the *4693 Point of Sale Terminals: Hardware Service Manual* for test procedures.

Test, Printer Adjustment, and Fiscal Printer Utilities Menus



Configuration and Utility Menus



How to Quit a Menu

You can quit a particular menu:

If you are using a point-of-sale keyboard, press the **Ctrl + S1** keys or select the QUIT option.

If you are using an enhanced alphanumeric keyboard or the retail point-of-sale alphanumeric keyboard with card reader connected to the system unit socket marked , press the **F3** key or select the QUIT option.

Depending on your location in the program, you quit the current operation and return to the top of the current menu, or you return to the previous menu. You may need to press the key more than once to reach the menu you want.

Collecting Vital Product Data

1. Record the type, model, and serial number of the base unit. These numbers are printed on a label on top of the system unit cover at the right rear corner.
2. Record the engineering change (EC) number of the system board installed in your system unit. This number is printed on the left edge near the rear of the board.
3. Record the EC number of the power supply installed in your system unit. This number is printed on a label in the storage retention battery compartment behind the side cover.

Entering Vital Product Data

See the *IBM 4693, 4684, and 4695 Point of Sale Terminals: Hardware Service Manual*.

Chapter 5. Testing the System

The verification test procedure described here helps ensure that the 4693 terminal hardware is functioning correctly. You can run the test after performing the configuration procedure, or at any other time.

CAUTION:

For safety when running the printer test, make sure personal articles such as ties, necklaces, or bracelets do not get caught in the moving print head.

System programs are provided to configure, test, and perform various utility functions on IBM 4693 terminals. The programs permanently reside on the optional fixed disk of some IBM 4693 Model 541 terminals. The programs can be invoked and run on those terminals.

Not all Model 541 terminals contain the optional fixed disk. Model 541 terminals that do not contain a fixed disk, as well as Model 421, 3W1 and, 321 terminals, must receive the system programs over a store loop or other network. Terminals that do not have a fixed disk are referred to as **medialess** terminals.

This test procedure assumes that the terminal to be tested either contains the system programs on its fixed disk, or can download them from a store controller or network server over a store loop or other network.

If you plan to test the diskette drive on an IBM 4693 Model 541 terminal, you need to have a good 3-1/2 inch 'scratch' (blank) diskette available. The user must provide the blank diskettes.

The verification tests run with a minimum amount of operator intervention. Most tests proceed without any action on your part. Others may require that you take some action by the user, such as pressing a key. The test program provides guidance as needed. During verification tests, the 4693 Model 541, 421, or 321 terminal is tested first, followed by the 4693 Model 202, if one is attached. Verification tests require about 15 minutes to run.

Verification Tests

Preparing to Run the Verification Tests

A special keying sequence is required at a specific time to initiate the loading of system programs. The keys used will vary, depending on the type of keyboard you have.

- If the keyboard is one of the Retail Point of Sale Keyboard family of keyboards attached to socket 5A or 5B, press and hold the **Ctrl** key and press the **S1** when the cursor appears. This is referred to later as **Ctrl + S1**.
- If the keyboard is connected to the system unit socket marked , press and hold the **Ctrl** and **Alt** keys and press the **Ins** key when the cursor appears. This is referred to later as **Ctrl + Alt + Ins**.

Determine the kind of keyboard you have and make note of the keying sequence you must use. Read over the first few steps in the procedure and note that you must enter this keying sequence when the cursor, or minus (-) sign, appears in the top right hand corner of your display.

- 1 If the green READY light is ON, press the Mode Control switch at the 4693 terminal. The READY light goes OFF. (This step resets power-on conditions to a common reference point so that you can proceed.)
- 2 Switch Ready mode On (the green READY light goes ON).
- 3 In approximately 10 to 30 seconds the cursor, or minus (-) sign appears in the upper right corner of the display for a few seconds. While the cursor is at this position, you must enter the keying sequence for your keyboard as described above. Depending on your keyboard, press:

Ctrl + S1 or
Ctrl + Alt + Ins

If you missed the opportunity to enter the keying sequence at this time, return to Step 1 and repeat the procedure. The results can be unpredictable if you do not enter the keying sequence while the cursor is displayed.

Several routine messages display as the terminal goes through its power-on sequence.

- 4 Several error messages may appear. Follow directions on the display to Exit each error message.

The following message displays.

SYSTEM RESTART WILL FOLLOW. PREPARE FOR RESTART.

- 5 In approximately 10 to 30 seconds the cursor, or minus (-) sign appears in the upper right corner of the display for a few seconds. While the cursor is at this position, you must enter the keying sequence for your keyboard, as described earlier. Depending on your keyboard press:

Ctrl + S1 or
Ctrl + Alt + Ins

The MAIN MENU displays:

START TESTS
START UTILITIES
START CONFIGURATION
START OPERATING SYSTEM
QUIT

6 Select START TESTS.

When the TEST MENU displays, select RUN VERIFICATION TESTS.

RUN VERIFICATION TESTS
RUN POS DEVICE TESTS
RUN SYSTEM UNIT TESTS
QUIT

The verification tests begin and various messages appear as the tests progress.

7 Follow directions on the display to run the tests.

8 Observe the display for any error messages.

If you encounter any problems, or if any messages display that indicate an error or a problem with the hardware, call for service or refer to the *IBM 4693, 4694, and 4695 Point of Sale Terminals: Hardware Service Manual*.

9 You have completed the verification test.

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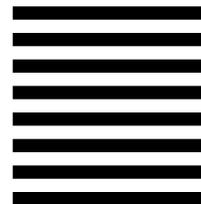
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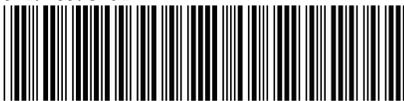


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