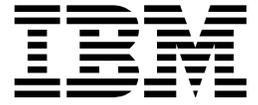
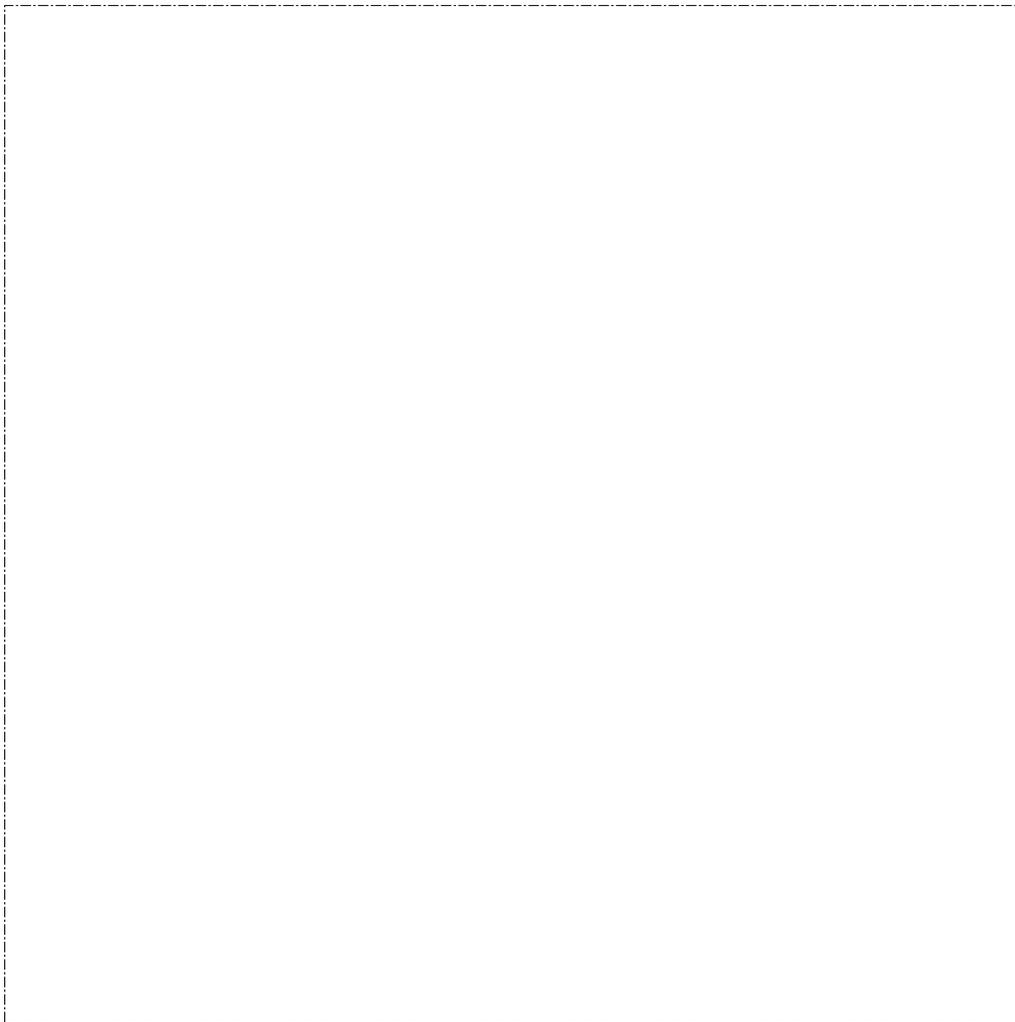


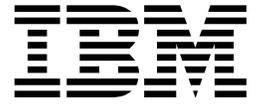
Store Systems:



Installation and Operation Guide for Point-of-Sale Input/Output Devices



Store Systems:



Installation and Operation Guide for Point-of-Sale Input/Output Devices

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 (November 1995)

This is the second edition of the *IBM* Store Systems: Installation and Operation Guide for Point-of-Sale Input/Output Devices*. This edition replaces and obsoletes *IBM Store Systems: Installation and Operation Guide for Point-of-Sale Input/Output Devices*, GA27-4028-00.

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General Safety Information

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

DANGER

<p>Never work on equipment or connect or disconnect signal cables during periods of lightning activity.</p>
--

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 replace 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.

Canadian Department of Communications compliance statement

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.

Avis de conformité aux normes du ministère des Communications du Canada

Cet équipement ne dépasse pas les limites de Classe A d'émission de bruits radioélectriques pour les appareils numériques, telles que prescrites par le Règlement sur le brouillage radioélectrique établi par le ministère des Communications du Canada. L'exploitation faite en milieu résidentiel peut entraîner le brouillage des réceptions radio et télé, ce qui obligerait le propriétaire ou l'opérateur à prendre les dispositions nécessaires pour en éliminer les causes.

United Kingdom Statement of Compliance

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 install and operate the Input/Output (I/O) devices on IBM point-of-sale terminals. It also describes how to exchange expendable supply items, such as ribbons and paper. It contains two chapters and three appendices.

It is written primarily for users who prepare training material and store procedures. Retain the guide for future use when installing additional terminals or point-of-sale devices.

- Chapter 1** Describes the procedures for installing I/O devices
- Chapter 2** Provides illustrations of terminals and I/O devices and includes descriptions on how to use the devices. on IBM point-of-sale terminals.
- Appendix A** Contains information for ordering customer replaceable parts and expendable supplies.
- Appendix B** Contains information for operators and programmers.
- Appendix C** Contains information on display configurations and controls.

Related Publications

Related Publication Name	Form No.
<i>IBM 4693 Point of Sale Terminals: Installation and Operation Guide</i>	SA27-3978
<i>IBM 4694 Point of Sale Terminals: Installation and Operation Guide</i>	SA27-4005
<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 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: Supplement for Point of Sale Terminals – Installation, Operation, and Service</i>	GA27-4035

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
<i>IBM 4694 Point of Sale Terminals Service Diskette</i>	SX27-3933
<i>IBM 4693/4694 Point of Sale Terminals Supplemental Drivers</i>	SX27-3934
<i>IBM 4695 Point of Sale Terminals Service Diskette</i>	SX27-3965
<i>IBM Point-of-Sale Subsystem for DOS (1 of 2)</i>	SX27-3960
	SX27-3961
<i>IBM Point-of-Sale Subsystem for OS/2 (1 of 2)</i>	SX27-3942
	SX27-3943

Summary of Changes

GA27-4028-01 (November 1995)

This edition includes installation and operation information about the following point-of-sale input/output devices:

- 9-inch Video Display
- Sure Point Monochrome Touch Screen
- Sure Point Color Touch Screen
- Compact Cash Drawer
- Keyboard Filler Panel
- Special characters for the MICR Printer.

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Before You Start

These setup instructions describe how to install devices and connect cables on IBM 4693, 4694, and 4695 Point of Sale Terminals.

Your Store Planner should provide some instructions that show the devices your terminal has and where you should connect them. If that arrangement is different than the one shown here, follow the Planner's instructions.

The printer, short keyboard, displays, and fillers can be placed on the left or on the right.

Video displays should be placed on the left side of the Model 3R and 4R printers.

To install the terminal:

- 1** Get the cables from the OPEN FIRST box as needed.
- 2** Follow the directions of your Store Planner in arranging the devices.

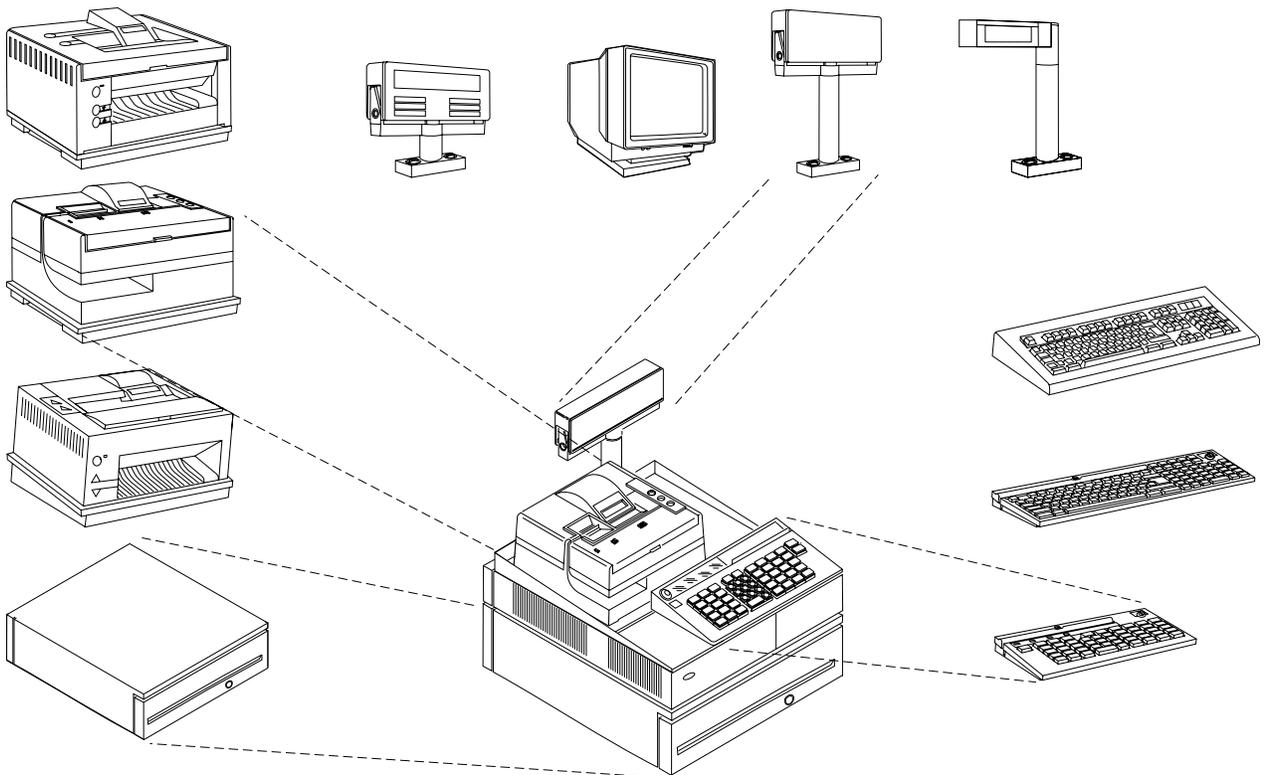
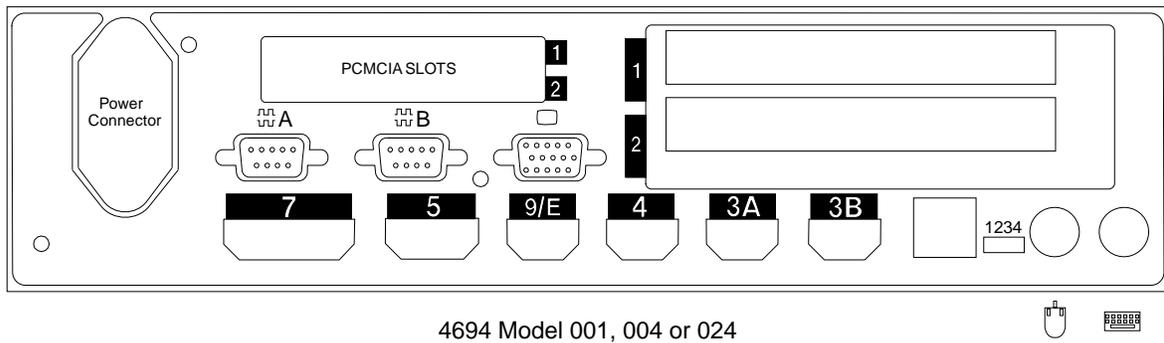
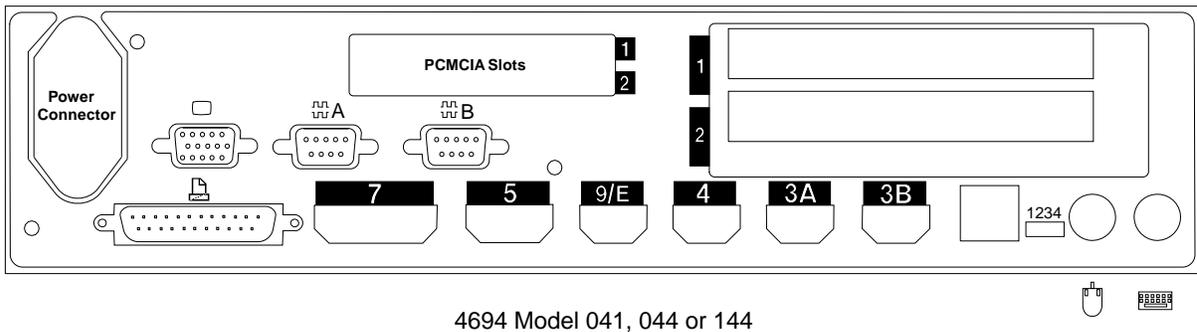
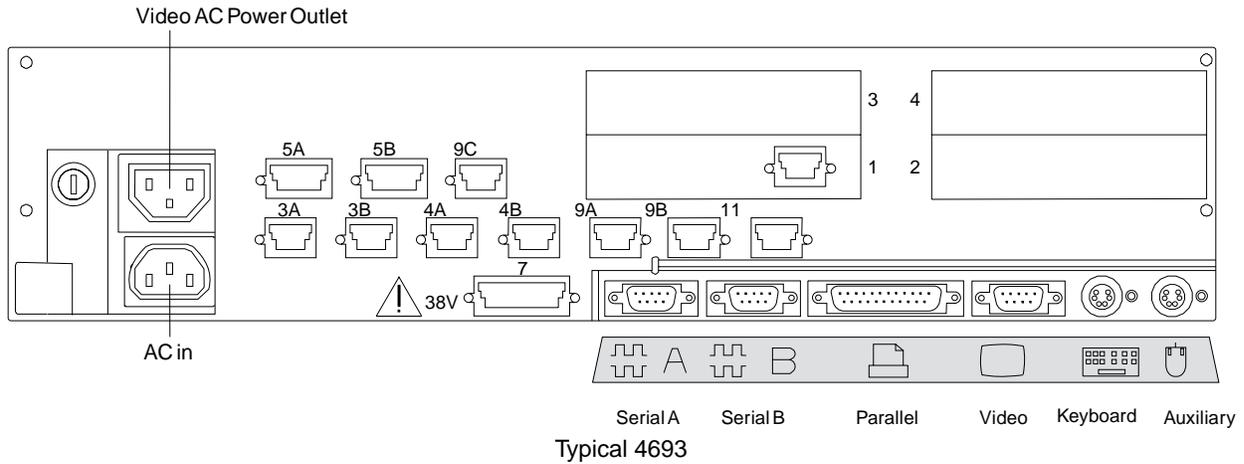


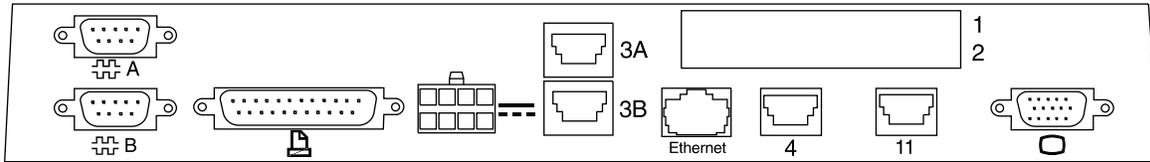
Figure 1-1. Point-of-Sale Terminal with I/O Devices

Installing I/O Devices

Note: This section provides information to set up I/O devices most often found on point-of-sale terminals.

The figure below shows typical socket panels at the rear of the system unit. The panels differ slightly, depending on the model of your terminal. Refer to Table 1-1 on page 1-4 when plugging your cables.





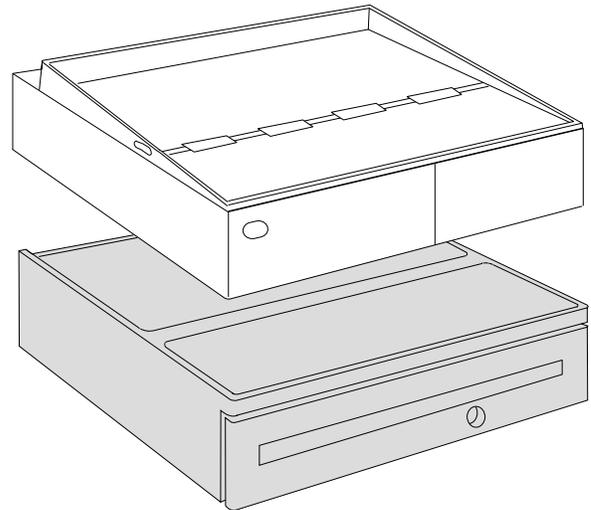
4695 Model 201 or 211

Table 1-1. Plug Locations for I/O Devices

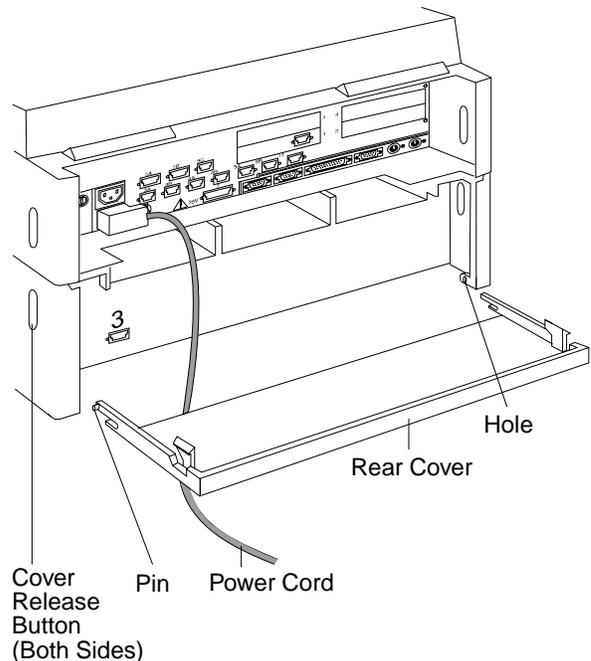
Type of Device	Box No.	Cable No.	System Unit Socket	Notes
Cash Drawer	3	3	3A or 3B	1
40-Character Vacuum Fluorescent Display 40-Character VFD II, 40-Character Liquid Crystal Display, Character/Graphics Display, Shopper Display	4	4	4, 4A, 4B, 9A, 9B	1
Flat Panel Display	LCD	4 and LCD	4 and 	2
Video Display				
Keyboard	5	5	5, 5A, 5B, or 	1
Printer	7	7	7	
Scanner or Hand-held Bar Code Reader			9, 9C, or 9/E	1
4693 Model 202 (satellite terminal)		11	11	
RS232C Device			 A or  B	1
Parallel Printer			 , option adapter slots 1 or 2	
Mouse				
Option Adapters				2
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. Follow your Store Planner's instructions for connecting any cables to these adapters.				

Installing the Cash Drawer and the 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 cash drawer cable to the 3A or 3B socket on the rear panel of the system unit.
- 5 Connect the other end of the cable to the rear of the cash draw (socket 3).
- 6 Connect the AC power cord to the system unit.
Do not plug the other end of power cord to an outlet yet.
- 7 Route the power cord down toward the bottom of the cash drawer.
- 8 Install the cash drawer rear cover.

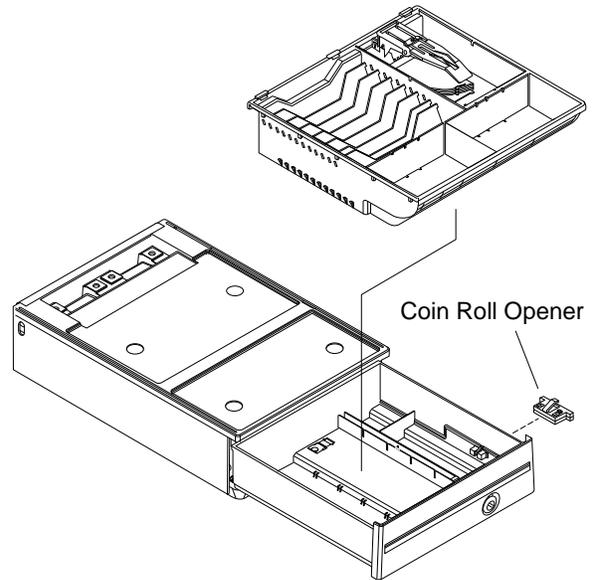


Note: Other models may vary.

- 9 The cash drawer is installed. Install any other I/O devices at this time, otherwise go to "Installing the System Unit Rear Cover" on page 1-21.

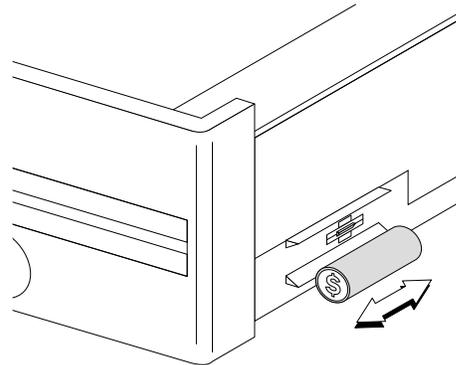
Installing the Compact Cash Drawer Coin Roll Cutter

- 1 Open the cash drawer and pull it all the way out.
- 2 Remove the till.
- 3 From inside the drawer, squeeze the cutter latches together with your fingers and push the cutter outward until it can be removed from the outside.
- 4 To exchange the cutter, snap the new one into position from the outside.
- 5 Reassemble.



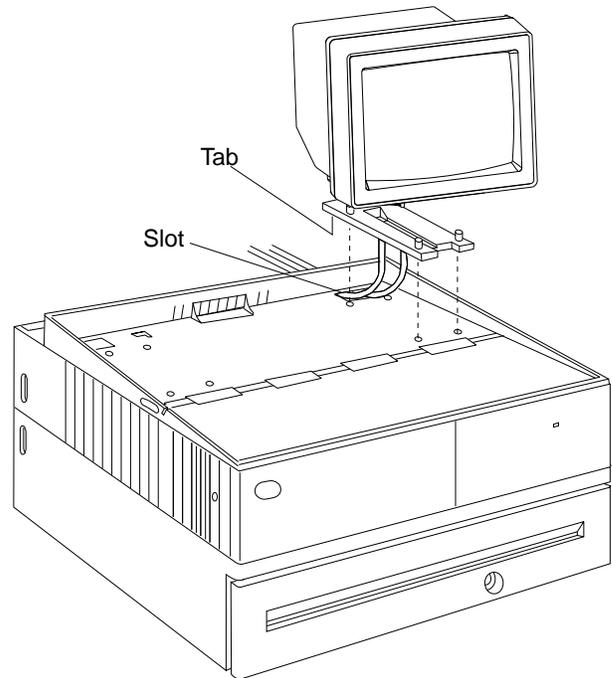
Using the Compact Cash Drawer Coin Roll Cutter

1. Either push or pull the roll against the coin roll cutter until a score is made in the outside cover.
2. Then break roll open with your hands.



Installing the 9-Inch Video Display

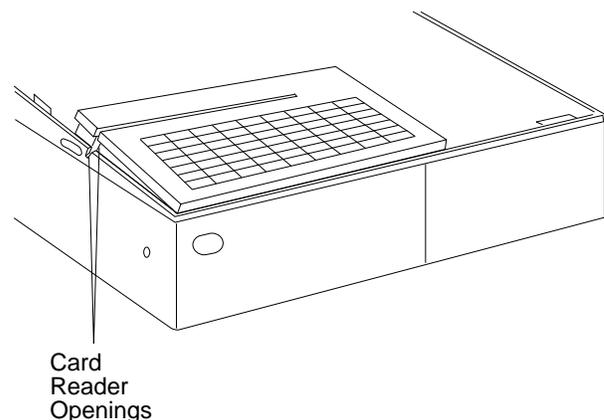
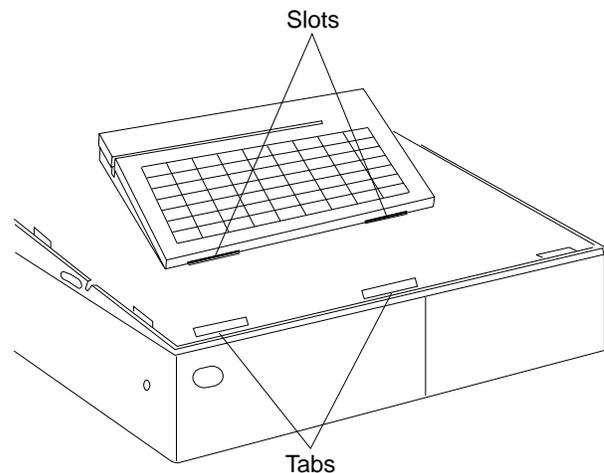
- 1 Hold the display and its base over the system unit and route the two cables through the opening at the rear of the base.
 - 2 Ensure that two tabs at bottom rear of the display base fit into slots in top of system unit.
 - 3 Place the display base over the three screw holes in top of the system unit and tighten the screws.
- Note:** The display should be mounted on the left side when used with the Model 3R or 4R printer.
- 4 The display is installed. Install any other I/O devices at this time, otherwise go to "Installing the System Unit Rear Cover" on page 1-21.



Installing an Integrated Keyboard

Note: If your keyboard cable has a **round plug** on one end, it may be easier to first connect the round plug to the system unit and then route the cable **up** through the opening of the system unit that is inline with the keyboard socket. If the plug is not round, follow these instructions.

- 1 Connect cable 5 to the keyboard.
- 2 Route the keyboard cable **straight back** and through the nearest opening at the rear of the system unit.
- 3 Place the keyboard so the slots in the front of keyboard engage with tabs at the front edge of system unit.
- 4 Be sure the side of the keyboard overlaps the tabs on the side of the system unit.
- 5 Be sure the carder reader opening is aligned with the slot in the system unit.
- 6 The keyboard is installed. Install any other I/O devices at this time, otherwise go to "Installing the System Unit Rear Cover" on page 1-21.



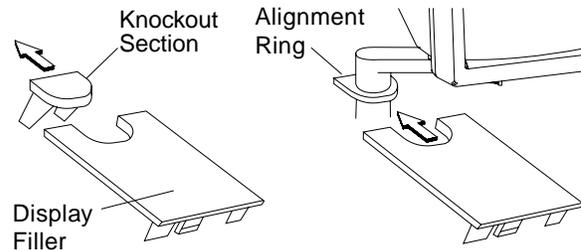
Installing the Fillers

Notes:

1. On an integrated unit, pull out on the locking lever at the left side of system unit.
2. Ensure that the side of each filler overlaps the tab on the side of the system unit.

1 If you have a video display on an integrated terminal:

- a** Move the display on its arm to the side and remove any tape holding the alignment ring.
- b** Remove knockout section of display filler.
- c** Align the display filler with the alignment ring and slide the filler onto the ring. Press the display filler into place.

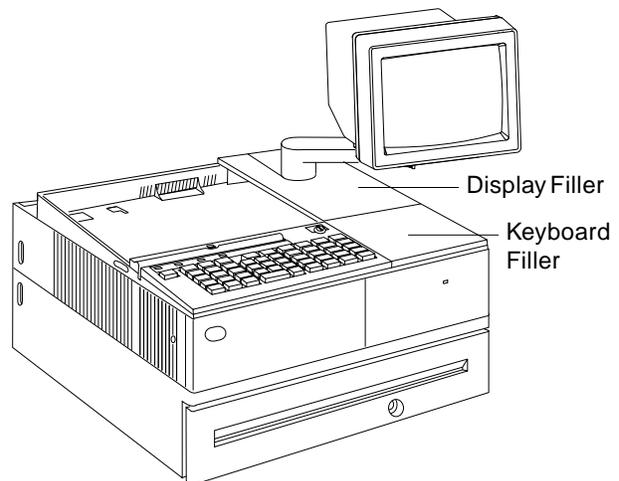


2 If you do not have a video display:

- a** Place the display filler on the system unit. **DO NOT REMOVE** the knockout section.

3 If you have a short keyboard:

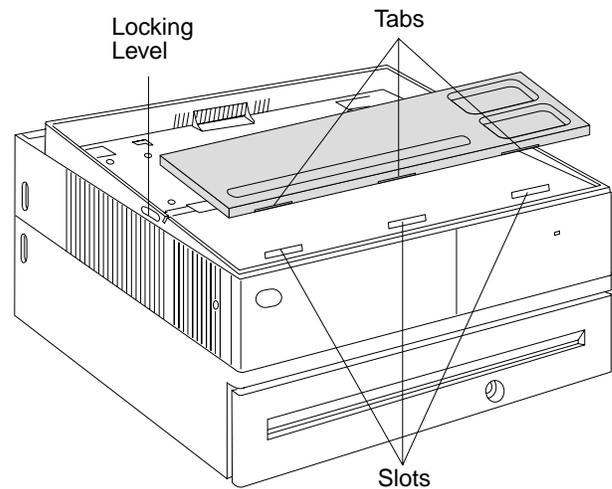
- a** Place the keyboard filler beside the keyboard. The fillers are installed. Install any other I/O devices at this time, otherwise go to "Installing the System Unit Rear Cover" on page 1-21.



Installing the Keyboard Filler Panel:

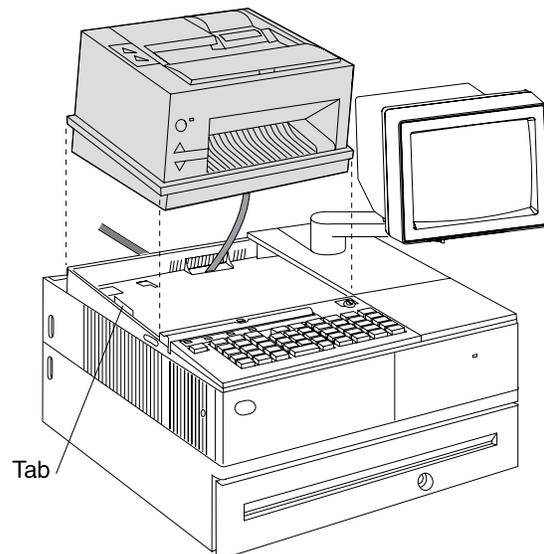
The keyboard filler panel is available on the following models with a Sure Point Touch Screen: 4693, 4694 Models 041, 044, and on the Cash Drawer I/O Integration Kit.

- 1 Place the filler so the slots in the front of filler engage with tabs at the front edge of system unit.
- 2 Make sure the side of the filler overlaps the tabs on the side of the system unit.
- 3 Press in on the locking levers at the left side of the integration kit so that its lugs engage the filler. Check to be sure the locking lever securely holds the filler to the integration kit.



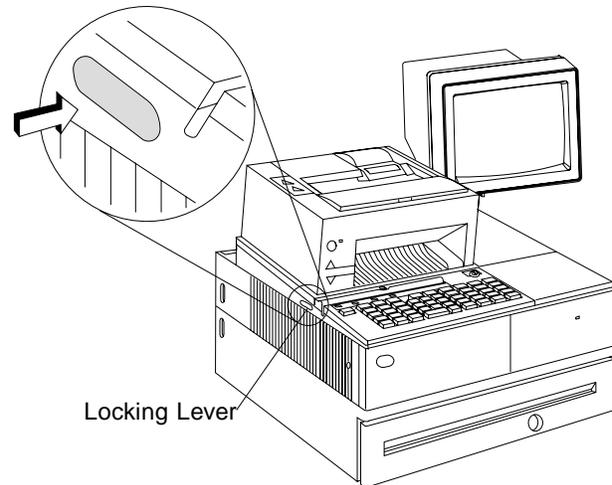
Installing the Printer

- 1 Remove any packing material from inside or under the printer.
- 2 Connect cable 7 at the bottom of the printer. Route the cable through the center opening and place the printer on the system unit.
- 3 Be sure the side of the printer overlaps the tab on the side of system unit. On an integrated unit pull out on the locking lever at the left side of system unit. The printer is installed. Install any other I/O devices at this time, otherwise go to "Installing the System Unit Rear Cover" on page 1-21.



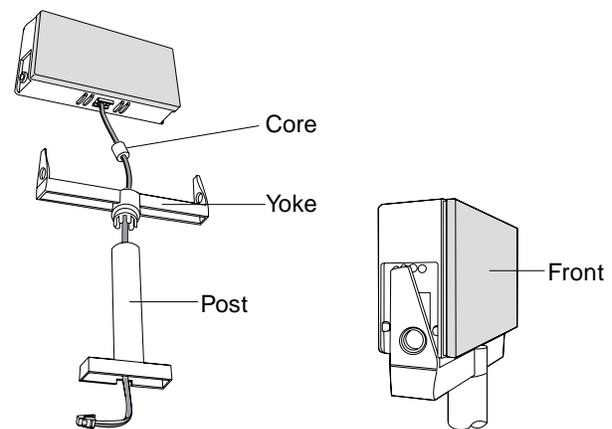
Securing I/O Devices to the System Unit

- 1 Press in on the locking lever at left side of system unit so that its lugs engage the keyboard, printer, and fillers.
- 2 Check to be sure that the locking lever securely holds the I/O devices and fillers to the system unit.

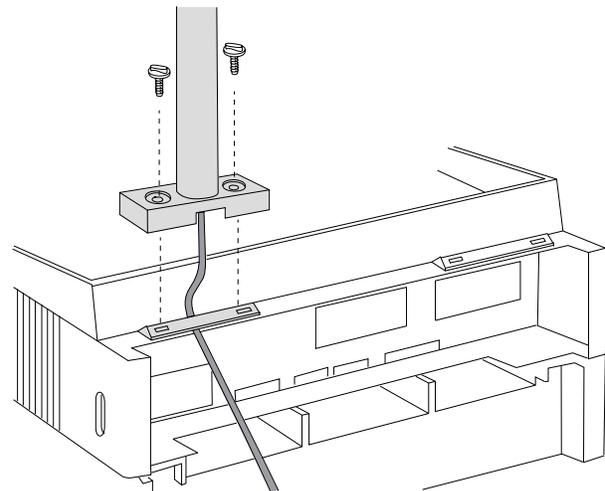


Installing the Alphanumeric Display

- 1 Plug display cable 4 to the display and route it through the yoke and post as shown. The end of the cable that has the round core connects to the display.
- 2 Spread the arms of the yoke open slightly and slide the display into the yoke.

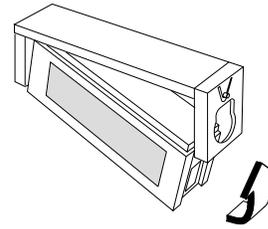


- 3 Route the cable through opening in the system unit at base of display.
- 4 Attach the display post to the system unit, using two plastic thumbscrews. The notch in the base of the post faces the rear.
- 5 The display is installed. Install any other I/O devices at this time, otherwise go to "Installing the System Unit Rear Cover" on page 1-21.

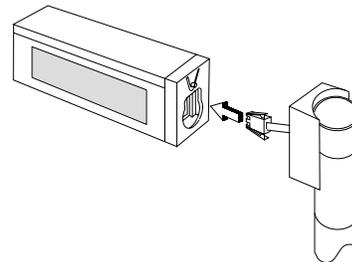


Installing the 40-Character Liquid Crystal Display

- 1 Slide the display up into its holder until it latches securely in place.



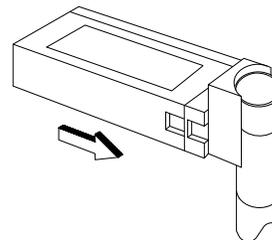
- 2 Route display cable 4 up through the post. The end of the cable that has the round core connects to the display.



- 3 Plug the cable into the display unit.

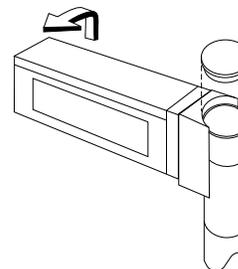
- 4 Hold the display holder against the post as shown so the interlocking surfaces contact each other.

- 5 Rotate the display holder toward you to its final position. Make sure the display is securely attached to the post.



- 6 Snap the round top cover onto the post.

- 7 Route the cable through opening in the system unit at the base of display.

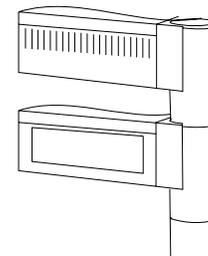


- 8 Attach the display post to the system unit, using two plastic thumbscrews. The notch in the base of the post faces the rear.

- 9 The display is installed. Install any other I/O devices at this time, otherwise go to "Installing the System Unit Rear Cover" on page 1-21.

Notes:

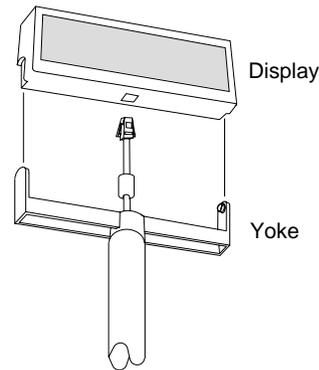
- a. Two displays can be stacked on a single post. The displays can face toward the front or the rear.
- b. The optional 'Y' cable is required when connecting two LCD displays to a 4694.



Install 40-Character Vacuum Fluorescent Display II

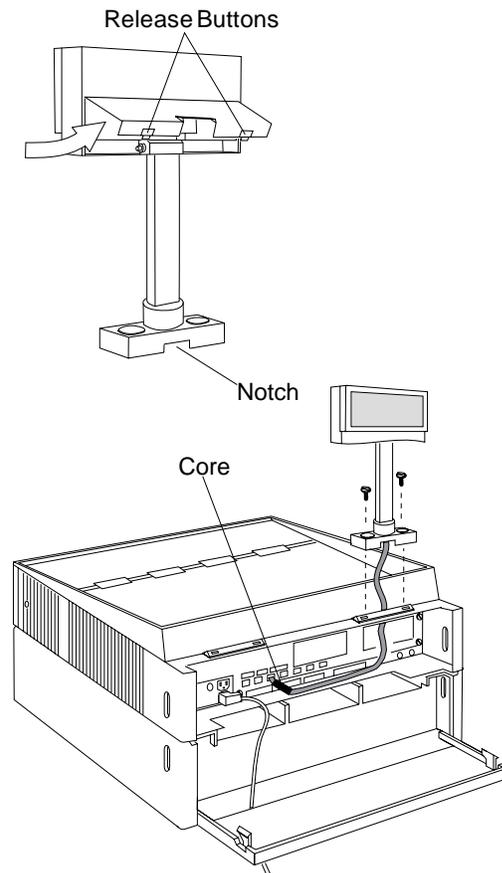
Note: The yoke for a two-sided display is taller than the yoke for a single-sided display. The installation procedure is the same for both.

- 1** Plug display cable 4 into the display. The end of the cable that has the round core connects to the display.
- 2** Spread the arms of the yoke open slightly and slide the display into the yoke.
- 3** Route the cable through opening in the system unit at the base of display.
- 4** Attach the display post to the system unit, using two plastic thumbscrews. The notch in the base of the post faces the rear.
- 5** The display is installed. Install any other I/O devices at this time, otherwise go to "Installing the System Unit Rear Cover" on page 1-21.



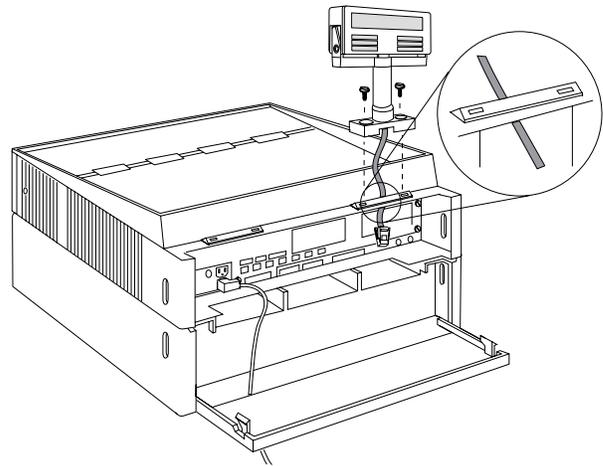
Installing the Character Graphics Display

- 1** Press the release buttons at bottom of display to open the rear cover.
- 2** Display cable 4 has a black core near one end. Plug that end into the correct socket on the system unit. See Table 1-1 on page 1-4 for plug locations.
- 3** Route the cable up through the opening in the system unit and up through the display post.
- 4** Plug the cable into the display.
- 5** Attach the display post to the system unit, using two plastic thumbscrews. The notch in the base of the post faces the rear.
- 6** Snap the rear cover closed.
- 7** The display is installed. Install any other I/O devices at this time, otherwise go to "Installing the System Unit Rear Cover" on page 1-21.



Installing the Shopper Display

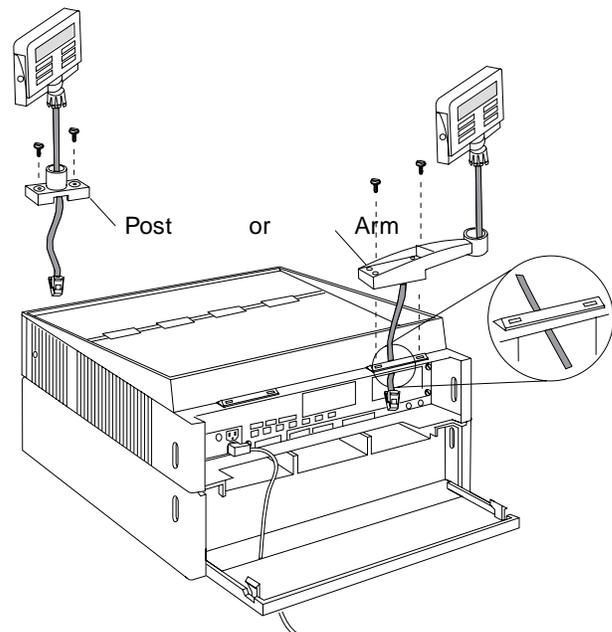
- 1 Route the cable through the post or arm.
- 2 Firmly press the display into the post or arm until it snaps into place.
- 3 If the display is mounted on an arm, press the cable into two notches on the underside of the arm.



- 4 Route the cable through the opening in system unit at the base of the display.
- 5 Attach the display post or arm to the system unit, using two plastic thumbscrews.

Note: The notch in the base of post faces the rear.

- 6 The display is installed. Install any other I/O devices at this time, otherwise go to "Installing the System Unit Rear Cover" on page 1-21.



Installing a Flat Panel or Sure Point Touch Display

This section explains the installation of the flat panel or touch display and its accessory kits.

Before Installing the Display

The adapter for this display (if required), should be installed before setting up the display. See the *IBM Store System Adapters: Installation and Service, GA27-4009*.

- 1 Connect the two cables to the connectors on the rear of the touch display.
- 2 Attach the display to the display holder. See Figure 1-2.
- 3 Continue to page 1-15 and choose either the integration or distribution installation instructions.

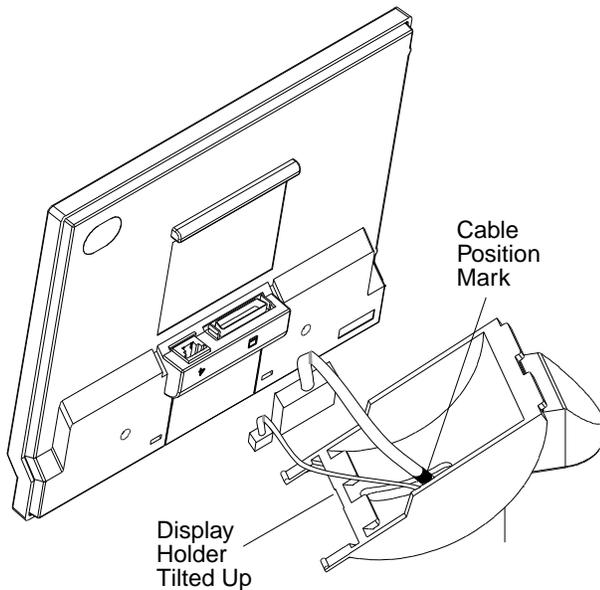


Figure 1-2. Display Holder Tilted Up

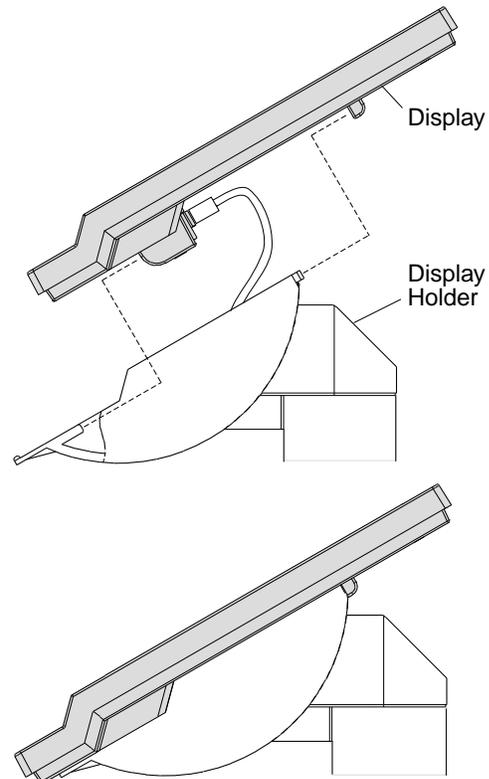


Figure 1-3. Installing the Display Unit

Installing the Distribution Kit

- 1 Place the distribution kit on the checkstand.
- 2 If required, install an M5 screw (not provided) to the bottom to secure the distribution kit to the checkstand.
Note: If it is necessary for the operator to change the tilt and rotate positions of the display, the distribution kit must be secured to the checkstand.
- 3 Plug the large cable into the socket of the adapter card or system unit LCD socket.
- 4 Plug the small cable into socket 4, 4A, 4B, 9A, or 9B.
- 5 Refer to testing information in the reference documentation for your system and run the Touch Display Test.

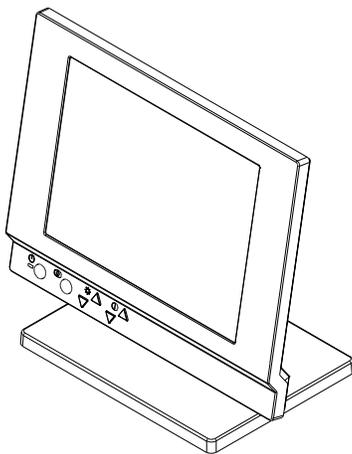


Figure 1-4. Distribution Kit with Display Attached

Installing the Integration Kit

- 1 Ask your Store Planner to determine whether the integration kit should be installed on the left or right side of the system unit or cash drawer.
- 2 Hold the integration kit over the system unit and route the two cables through the opening at the rear. Be sure the cables are completely pulled through the opening.
- 3 Place the integration kit over the two screw holes of the system unit or cash drawer. There are alignment slots to ensure proper positioning of the integration kit.
- 4 Tighten two thumbscrews on the base to secure the integration kit to the system unit.
- 5 Plug the large cable into the socket of the adapter card or system unit LCD socket.
- 6 Plug the small cable into socket 4, 4A, 4B, 9A, or 9B.
- 7 To install the filler panel and rear panel, see the *IBM Store Systems: Installation and Operation Guide for Point-of-Sale Input/Output Devices, GA27-4028*.
- 8 Refer to testing information in the reference documentation for your system and run the Touch Display Test.

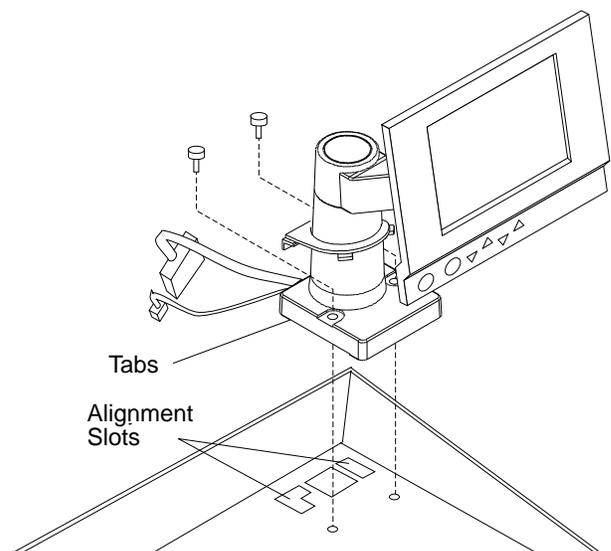
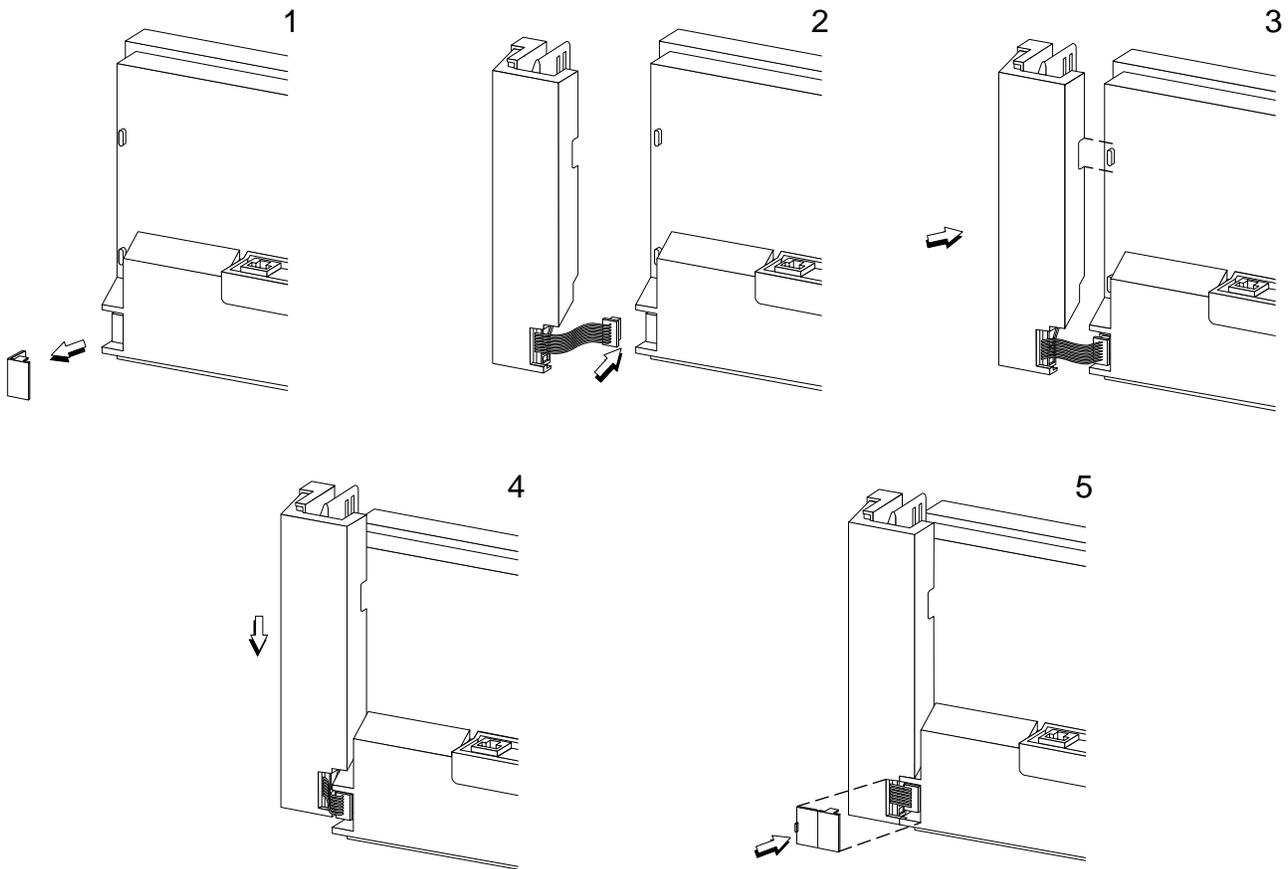


Figure 1-5. Integration Kit with Display Attached

Installing the Optional MSR Kit on the Sure Point Touch Display

- 1 Remove the tab on the back of the touch display.
- 2 Plug in the MSR cable.
- 3 Align the MSR into position.
- 4 Slide it into the attached position.
- 5 Reinstall the MSR tab.



Installing the Signature Capture Device

There are two different models of the signature capture device that attach to an IBM 4683, 4684, 4693, or a 4694 Point of Sale Terminal:

- Checkmate** 2020 Model A01 consists of an electromagnetic tablet, pen, and RS485 interface cable.
- Checkmate 2020 Model A02 consists of an electromagnetic tablet, pen, and RS232 interface cable and AC adapter.

Note: The pen refill is a supply item that is exchanged by the user.

Installing the RS232 Interface Model

- 1** Connect the pen cable to the rear four-pin modular socket.
- 2** Connect the RS232 interface cable to the remaining rear socket. Connect the other end of the cable to an available RS232 port on the point-of-sale terminal.
- 3** Connect the AC adapter cable to the RS232 connector.
- 4** Plug the AC adapter in the upright position into an AC electrical outlet.

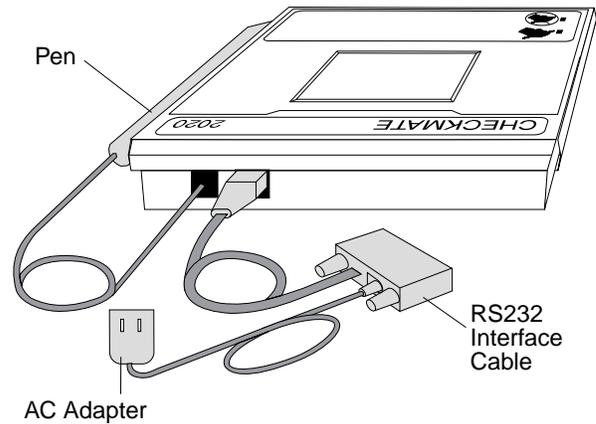


Figure 1-6. Signature Capture Device RS232 Interface Model

Installing the RS485 Interface Model

- 1** Connect the pen cable to the rear four-pin modular socket.
- 2** Connect the RS485 cable to the remaining rear socket.
- 3** Connect the other end of the cable to an available port on the rear panel of the point-of-sale terminal: 4B, 9A, 9B, 9C, or 9/E.

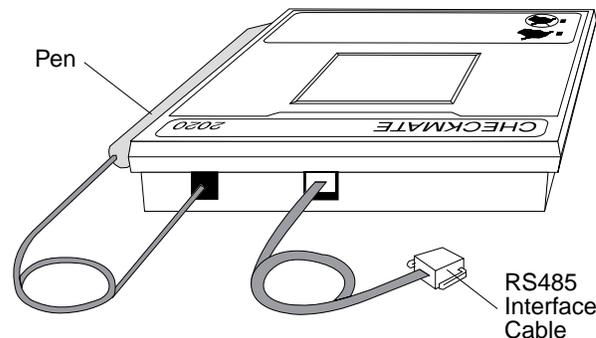


Figure 1-7. Signature Capture Device RS485 Interface Model

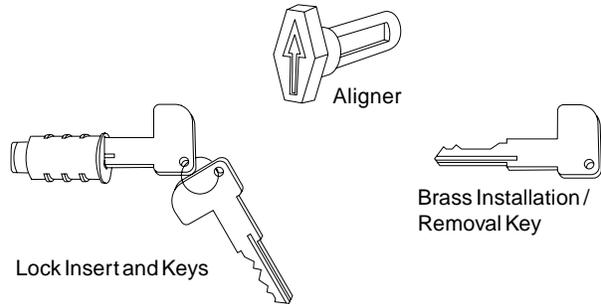
Installing and Removing Keylocks

The system unit, cash drawer, keyboard, and printer can have optional keylocks that prevent 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.

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



The aligner is a tool used to ensure that the slot at the bottom of the lock cylinder aligns with the lock insert being installed.

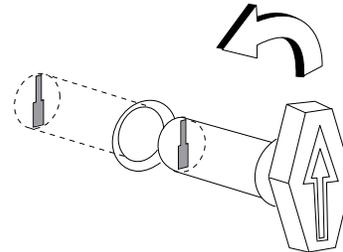
The figure shows the aligner in place in the lock cylinder of different devices. Note that when the aligner is in place, the arrow points in different directions, depending on the kind of device. Refer to this figure for reference when you install a lock in the different devices.



Installing a Lock Insert

The example shows how to install a lock insert in a cash drawer. However, the procedure is the same for installing a lock in any device. To check that the slot at the bottom of the lock cylinder aligns with the end of the lock insert:

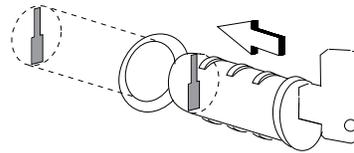
- 1 Put the aligner into the empty lock cylinder.
- 2 Gently turn the aligner until you feel it go into the slot at the bottom of the lock cylinder.
- 3 Turn the aligner so that the arrow points in the proper direction for this device.
- 4 Remove the aligner.



Note: Some cash drawers may have a different style lock. If the lock for your cash drawer is different than the one described here, refer to the instructions that came with the lock.

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

- 1 Remove the keys from 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 **fully** into the empty lock cylinder.
- 5 Hold the lock insert in place with your finger and remove the brass key.



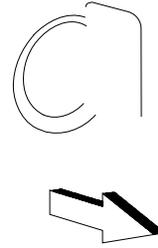
The lock insert is now installed.

- 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 into the lock until you hear it click into place.
- 2** Gently pull the brass key.
The brass key and the lock insert should come out of the lock cylinder together. Pressing down on the brass key as you pull makes it easier for the lock insert to come out along with the brass key.



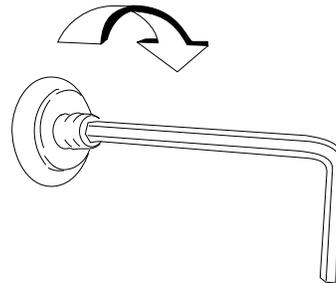
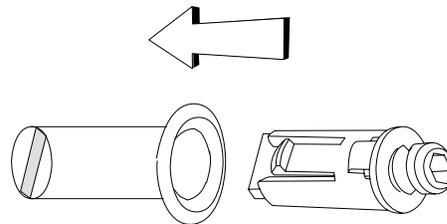
Installing a Blank Lock Insert

Blank lock inserts are used to cover the opening at the lock cylinder if no lock has been installed.

- 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.



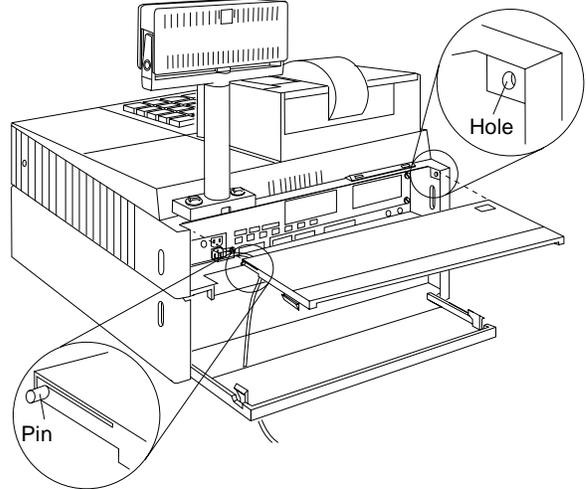
Removing a Blank Lock Insert

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.

Installing the System Unit Rear Cover

- 1** Hold the system unit rear cover in position as shown.
- 2** Choose one end of the rear cover, insert the pin on the cover into the hole in the system unit.
- 3** At the other end of the cover, press the flexible strip holding the pin to permit the cover to snap into place.
- 4** Arrange the cables neatly and close the rear cover.



Note: See "Installing and Removing Keylocks" on page 1-18 to install any locks or blank lock inserts that go in your I/O devices.

You have completed installation of the I/O devices. Save any publications or diskettes that came in the OPEN FIRST box.

If you have not yet configured the terminal, refer to one of the following guides:

- *IBM 4693 Point of Sale Terminal: Installation and Operation Guide, SA27-3978*
- *IBM 4694 Point of Sale Terminal: Installation and Operation Guide, SA27-4005*
- *IBM 4695 Point of Sale Terminals: Installation and Operation Guide, GA27-4031.*

Chapter 2. Operating Point-of-Sale I/O Devices

This chapter describes and illustrates the input and output devices on point-of-sale terminals and tells how to operate them. For illustration purposes, we show the devices on an IBM 4693 Point of Sale Terminal.

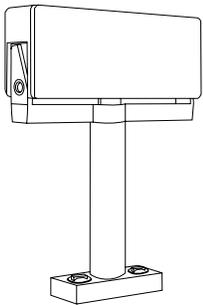
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Replacing the Pen Refill – Version 2	2-20

Displays

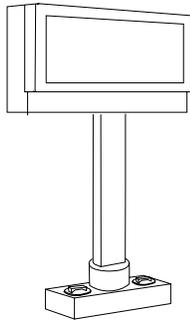
The 40-character vacuum fluorescent display, 40-character liquid crystal display, and the character/graphics each displays two lines of 20 characters each. The 40-character display can be used in graphic mode.

The terminal can have a 9 inch monitor; either monochrome or color. The monitor can be integrated with the terminal or distributed in a desired location.

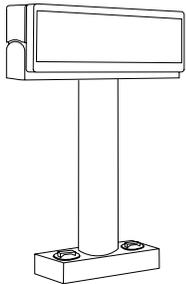
The flat panel display has 640(H) x 480(V) dots.



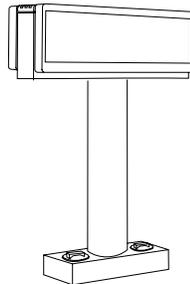
Alphanumeric Display



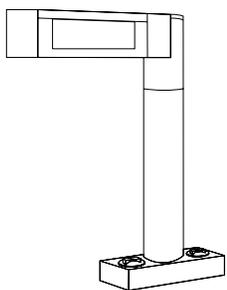
Character/Graphics Display



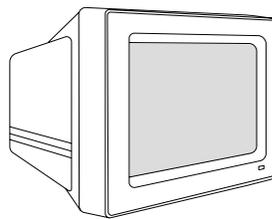
40 Character Vacuum Fluorescent Display II (single sided)



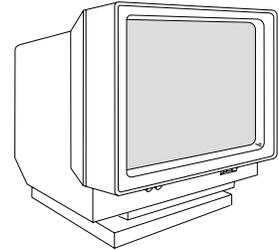
40 Character Vacuum Fluorescent Display II (Two sided)



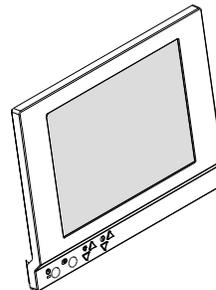
Liquid Crystal Display



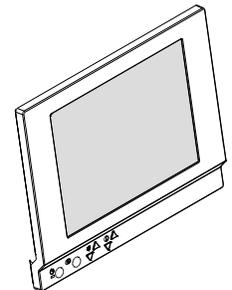
Distributed 9-Inch Color Display



Distributed 9-Inch Monochrome Display



Flat Panel Display



Monochrome and Color Sure Point Touch Screen

The Sure Point Touch Screens are 9.5 inch liquid crystal displays with a touch screen panel. They can be setup in an integrated arrangement or they can be placed by themselves in a distributed arrangement.

The shopper display can display one row of eight characters, with commas and decimal points. It also has six indicator lights to further provide information to the customer.

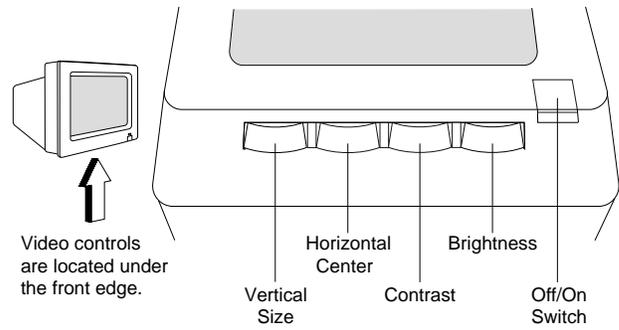
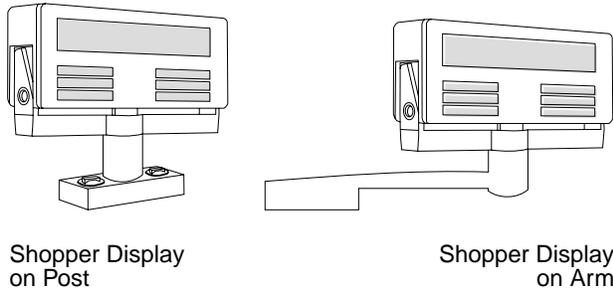


Figure 2-2. Controls on 9-Inch Monochrome Display

The 9-inch color display has an ON/OFF switch and has five video controls for adjusting the screen.

Adjusting the Controls on Video Displays

There are two versions of the 9-inch monochrome display. One version has an ON/OFF switch and has brightness and contrast controls. See Figure 2-1. The other version has an ON/OFF switch and has brightness contrast, vertical size, and horizontal center controls. See Figure 2-2.

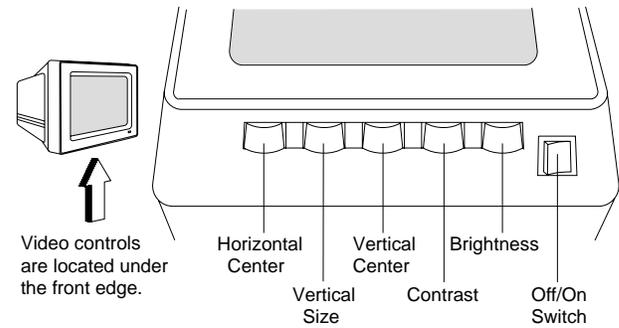


Figure 2-3. Controls on 9-Inch Color Display

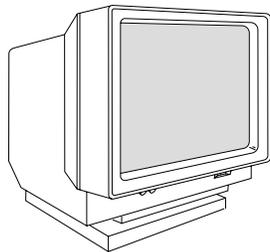
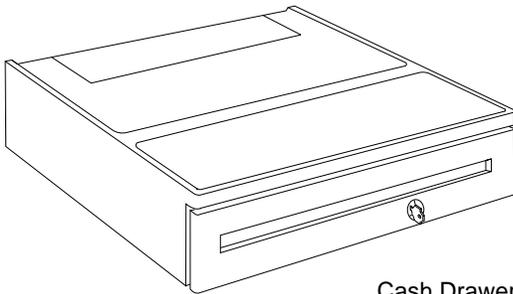


Figure 2-1. Controls on 9-Inch Monochrome Display

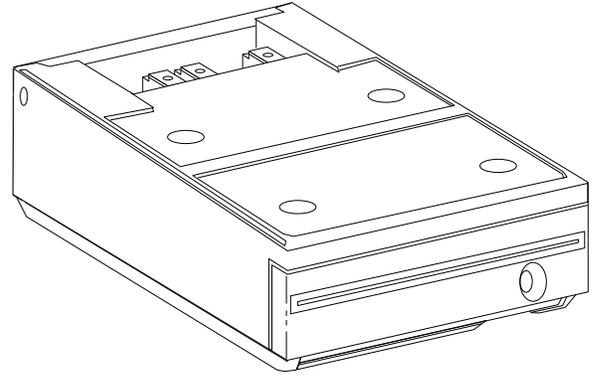
Cash Drawers

There are three kinds of cash drawers. All three cash drawers can have removable cash tills and till covers with locks. Two cash drawers are similar in size to the system unit and opens toward the front. One fits wide system units and one fits small systems. They can serve as the base for the terminal in an integrated arrangement or placed by themselves in a distributed arrangement. An optional keylock permits them to open under an application program control or by means of a key.

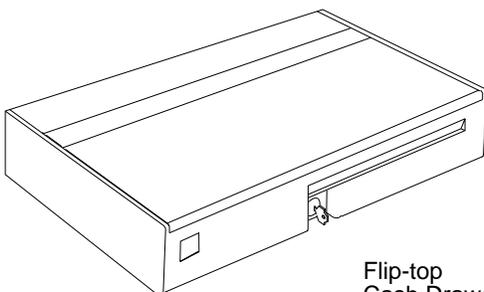


Cash Drawer

The compact drawer, is smaller in size. It can serve as the base for the terminal in an integrated arrangement or it can be placed by itself in a distributed arrangement. An optional keylock permits it to open under application program control or by means of a key.



The flip-top cash drawer, is smaller in size. It can be used in distributed arrangements where space may be limited. Its top cover hinges up. It, too, can have an optional keylock to permit the top cover to open under application program control or by means of a key.



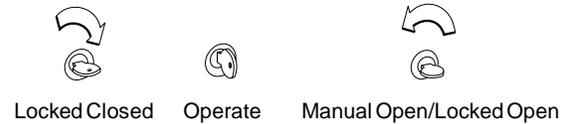
Flip-top
Cash Drawer

Keylock Positions

The cash drawer keylock has three positions:

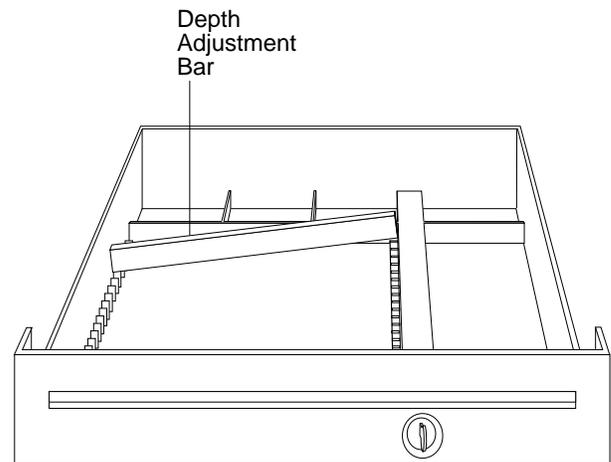
- Locked closed
- Operate
- Manual open/locked open

The Operate position permits the cash drawer to open under application program control. The key is normally turned to this position while the terminal is in operation. The key can be removed while in any of the three positions.



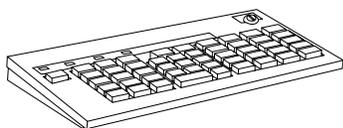
Document Storage Area Under Cash Till

Space is available under the cash till for storing documents. Use the slot at the front of the cash drawer for depositing documents. An adjustment bar inside lets you adjust the size of the document storage area to suit your needs.

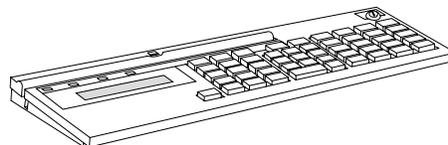


Keyboards

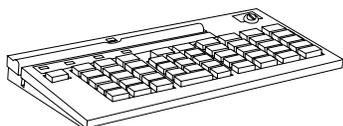
Several kinds of keyboards are available with a variety of features. Most have a built-in magnetic card reader.



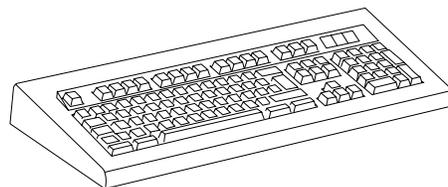
Retail Point of Sale Keyboard



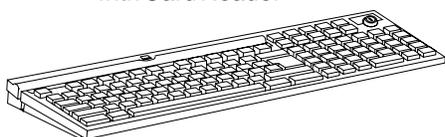
Retail Point of Sale Keyboard with Card Reader and Display



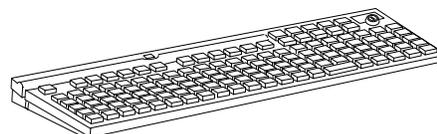
Retail Point of Sale Keyboard with Card Reader



Enhanced Alphanumeric Keyboard



Retail Alphanumeric Point of Sale Keyboard with Card Reader



Modifiable Layout Keyboard with Card Reader

Function Keys

Function keys, such as **S1** and **S2**, permit the terminal to perform certain functions or operations with few keystrokes by the operator.

On keyboards that have a **Ctrl** (Control) 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, you need only to press the **S1** or **S2** key. Figure 2-4 illustrates the keys on a typical keyboard.

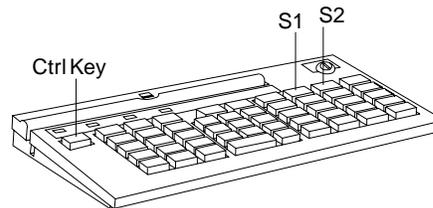


Figure 2-4. Example of S1 and S2 Function Keys

Enhanced Alphanumeric Keyboard:

On the enhanced alphanumeric keyboard:

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

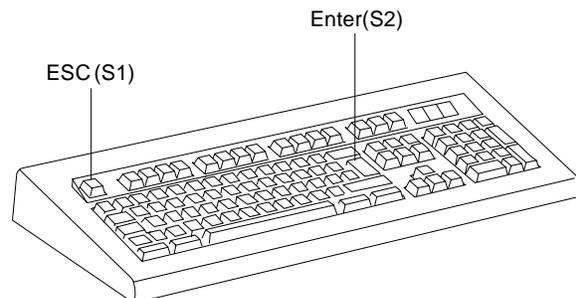


Figure 2-5. Example of Function Keys on Enhanced Alphanumeric Keyboard

Manager's Keylock

The keyboards can be equipped with a manager's keylock, for special override functions as determined by your store procedures.

During normal operations, the keylock is in the OFF position. When needed, it can be turned to the ON position to enable special keying functions, and then turned OFF again. The key cannot be removed while it is in the ON position.

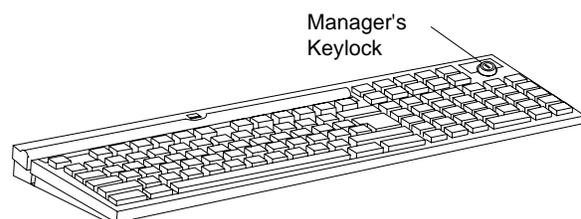


Figure 2-6. Manager's Keylock

Keyboard Lights (Status Indicators)

Four lights, or status indicators, on the keyboard provide information about the system. Three of the lights are labeled: Wait, Offline, and Message Pending. The fourth light is not labeled.

The lights operate under application program control. The following table describes the typical use of these lights. Refer to your store operating procedures for specific information on how these lights work.

Light	Meaning
Wait	The application program running on the terminal is waiting for an action to complete (for example, waiting for a program to load).
Offline	Normal online operations have been interrupted and you can display an offline message using system function keys. An offline message gives you information related to the offline condition.
Message Pending	A system message is waiting to be displayed on the terminal, and can be displayed using system function keys.
Unlabeled	Reserved

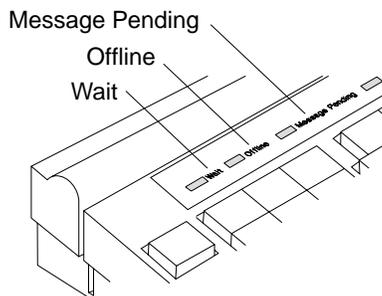


Figure 2-7. Keyboard Status Lights

Printers

The Model 4 Printer is designed for a 4693 system unit that has a slanted fence on top.

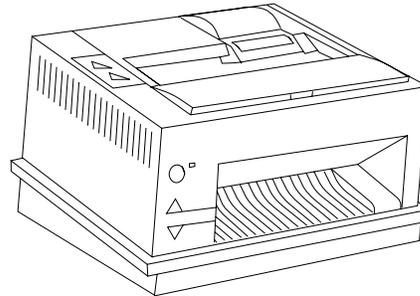


Figure 2-8. Point-of-Sale Printer Model 4

A base is available for the Model 2 and 3 printers, that allows them to be placed on an I/O integration kit. The base holds the printer in a slanted position, in the same manner in which a Model 4 printer is held.

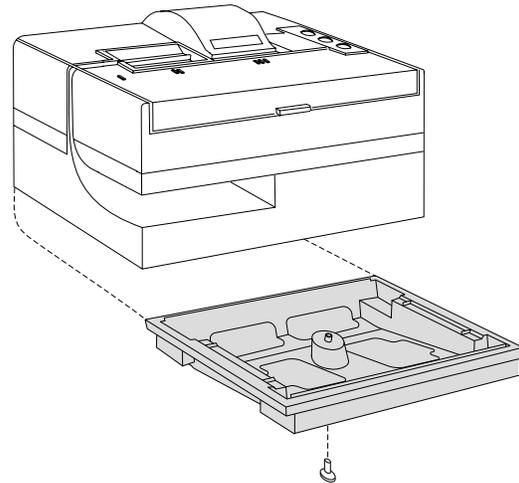


Figure 2-9. Point-of-Sale Printer Model 2

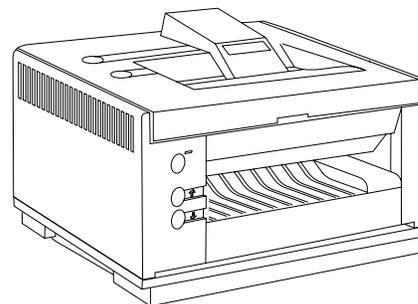


Figure 2-10. Point-of-Sale Printer Model 3

Operating the Model 2 Point of Sale Printer

Note: Consult your store procedures for information on the correct method of operating the document insert station.

The Model 2 printer has four buttons located on the top of the printer. These buttons are used to:

- III** Advance paper at the journal station
- II** Advance paper at the customer receipt station
- I** Open and close the document insert station
- T** Test the printer

Three of the buttons are visible when the printer cover is closed. The test button is visible only when the printer cover is raised.

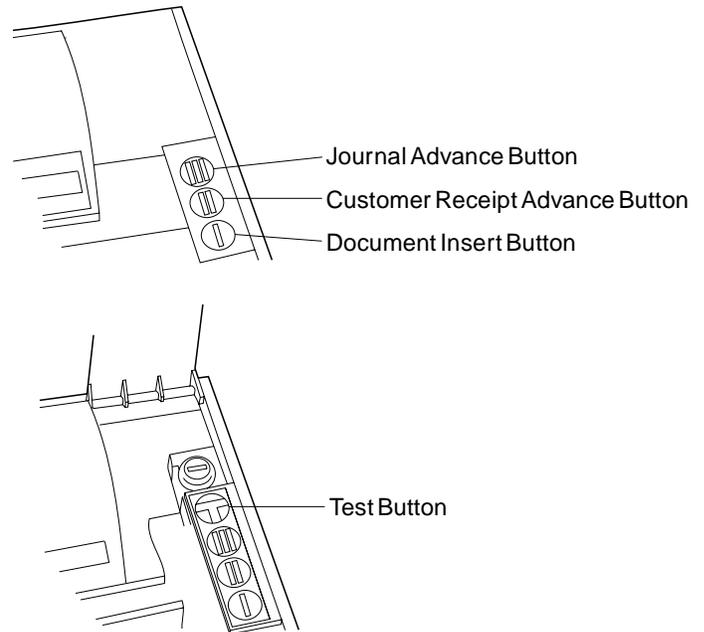


Figure 2-11. Buttons on a Model 2 Printer

Opening/Closing the Document Insert Station

The document insert station can be opened or closed under application program control or it can be operated manually using the document insert button.

The document insert station is normally open and ready for insertion of a document.

- 1** Insert the document. (The following sections describe how to insert documents.)
- 2** Press the **I** button to manually close the station.

Note: Pressing the **I** button is not necessary if your printer has been programmed to close the document insert station automatically.

Inserting Documents in the Model 2 Printer

Note: Consult your store procedures for information on the correct method of operating the document insert station.

When you want to print on a check or form, insert the document into the document insert station. You can insert the document at either the front or the side. Consult your store procedures or authorized personnel at your store for information on inserting documents. You can insert documents that are fastened together, provided they are not fastened together on the right side.

Note: Do not insert a document with staples, metal inserts, or holes in the area to be printed.

Inserting a Document at the Front

- 1 Insert the document with the side to be printed facing up.
- 2 Push the document against the right wall of the insert station and forward until it comes to a stop.

Inserting a Document at the Side

Your store procedures or a message on your terminal display may tell you which documents should be inserted at the side. Use the raised mark on the left side of the printer to help you line up documents.

- 1 Insert the document, sliding it to the right as far as it can go.
- 2 Be sure to line up your document correctly; the first line of printing begins where the mark is located.
- 3 Press the document insert button marked **I** to manually close the station after the document is lined up correctly. Pressing the **I** button is not necessary if the printer has been programmed to close automatically.

If the document needs to be adjusted after you have closed the document insert station, press the document insert button marked **I** and adjust the document. Press the button marked **I** again to close the document insert station.

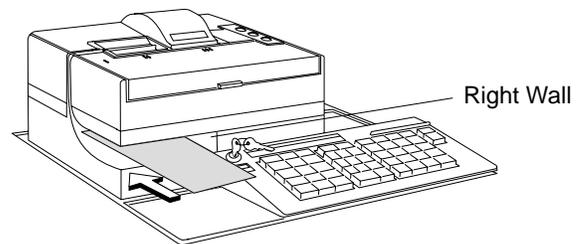


Figure 2-12. Inserting a Document at the Front of Model 2 Printer

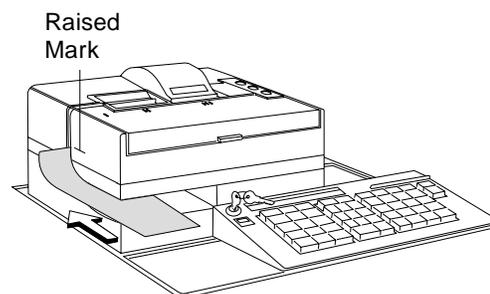


Figure 2-13. Inserting a Document at the Side of Model 2 Printer

Advancing the Journal Paper on the Model 2 Printer

To advance the journal paper:

- 1 Press the III button.
- 2 The journal roll advances one line each time you press the button, or it continues to advance if you press and hold the button.

Advancing the Customer Receipt

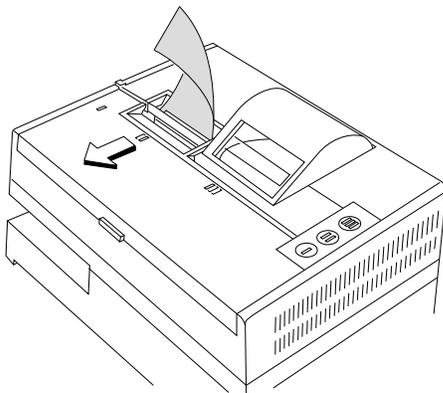
To advance the customer receipt:

- 1 Press the II button.
- 2 The customer receipt advances one line each time you press the button, or it continues to advance if you press and hold the button.

Note: If you have a document inserted in the document insert station, pressing the II button advances the document. Be sure to remove all documents from the document insert station before pressing the II button to advance the customer receipt.

Tearing the Customer Receipt

To tear off the customer receipt, pull the paper toward the front of the printer (not toward the sides) and tear it against the tear bar.

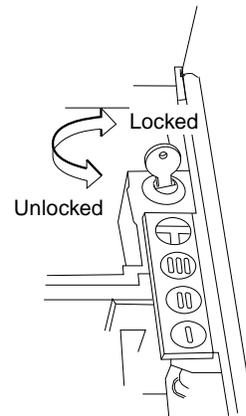


Unlocking the Journal Cover

Your terminal may have an optional keylock for securing the journal cover. This keylock is located under the printer cover near the printer buttons.

To unlock the journal cover:

- 1 Raise the printer cover.
- 2 Insert the journal cover key into the journal keylock and turn it to the unlocked position.
- 3 Open the journal cover.
- 4 To lock the journal cover, reverse these steps. Be sure to remove the journal cover key. The printer cover does not close until the key is removed.



Testing the Model 2 Printer

The printer test button is located under the printer cover and can only be used when the cover is open. This button runs a test that lets you know that the print head is seated properly and the printer is working correctly. Use this button each time you install the paper, ribbon cartridge, or print head.

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.

To run the printer test:

- 1 Raise the printer cover.
- 2 Press the **T** button.

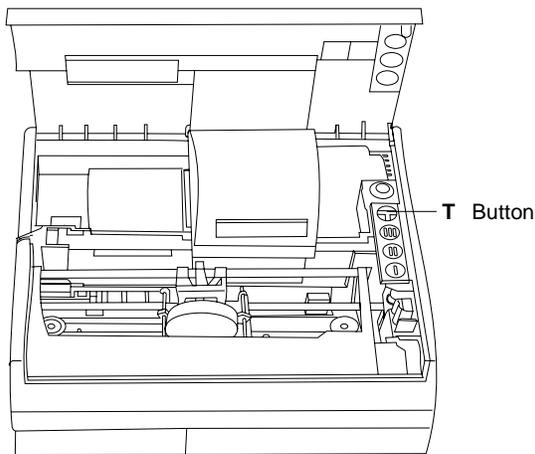


Figure 2-14. Test Button on Model 2 Printer

- 3 A test begins that prints two lines of 38 characters in both stations. A quick visual scan verifies that the printer is printing correctly.

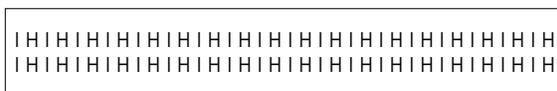


Figure 2-15. Printer Test Pattern

- 4 Tear off the customer receipt paper before closing the cover.

Operating the Model 3 or 4 Point of Sale Printer

Note: Consult your store procedures or authorized personnel at your store for information on inserting documents.

Model 3 and 4 printers have two buttons located on the top and three on the front. These buttons are used to:

- Advance journal station paper
- Advance customer receipt station paper
- Advance an inserted document a preset number of lines (Ready)
- Advance an inserted document
- Withdraw an inserted document
- Run tests on the printer

The buttons on a Model 3 printer differ slightly in appearance, but their function remains the same.

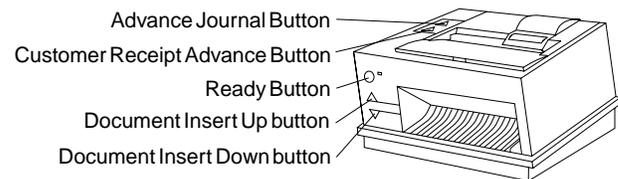


Figure 2-16. Buttons on Model 4 Printer

Inserting Documents in the Model 3 or 4 Printer

When you want to print on a check or form, insert the document into the printer at the front or at the top.

Inserting a Document at the Front

To insert a document at the front:

- 1 With the side to be printed facing up, insert the document into the front of the document insert station until it stops.

Note: The form must be inserted into the document insert station with enough force so that it moves between the rollers.

- 2 When the green light next to the Ready button goes ON:
 - Consult your store procedures or authorized personnel at your store for information on completing the document insert transaction.
 - Press the Ready button to move the document a preset number of lines into the printer.
 - Press the document insert button **Up** button to move the document into the printer one line at a time.

Note: If the document is not inserted correctly, press the document insert button **Down** button to back it out. Return to Step 1 and try again.

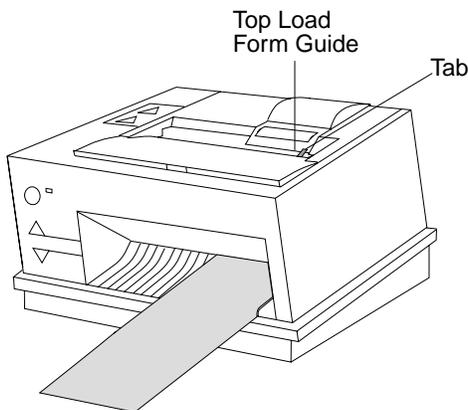


Figure 2-17. Inserting a Document at the Front of Model 4 Printer

Inserting a Document at the Top

- 1 With the side to be printed facing you, insert the document into the top of the document insert station until it stops.

- 2 When the green light next to the Ready button goes ON:

- Consult your store procedures or authorized personnel at your store for information on completing the document insert transaction.
- Press the Ready button to move the document a preset number of lines into the printer.
- Press the document insert button **Down** button to move the document into the printer one line at a time.

Note: If the document is not inserted correctly, the document insert button **Up** button to back it out. Return to Step 1 and try again.

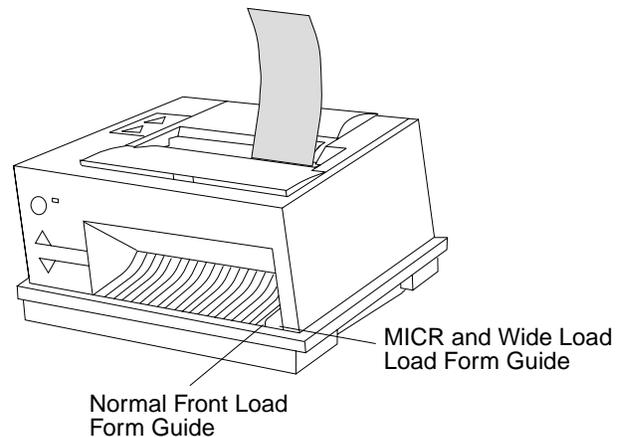


Figure 2-18. Inserting a Document at the Top of Model 4 Printer

Aligning the Print Line on an Inserted Document

To align an inserted document:

Press the Ready button to move the document a preset number of lines into the printer.

- or -

Press the document insert button **Up** or the document insert button **Down** to move the document into the printer one line at a time.

Advancing the Customer Receipt Paper or Journal Paper

To advance the customer receipt, press the customer receipt button. To advance the journal station, press the journal button. See page 2-11.

The customer receipt advances or the journal station advances one line each time you press the button with the cover open or 12 lines each time you press the button with the cover closed. They continue to advance if you press and hold the button with the cover open or closed.

Note: If the document insert station is occupied, you will be able to advance the customer receipt paper or journal paper, but the printer does not print at the customer receipt station.

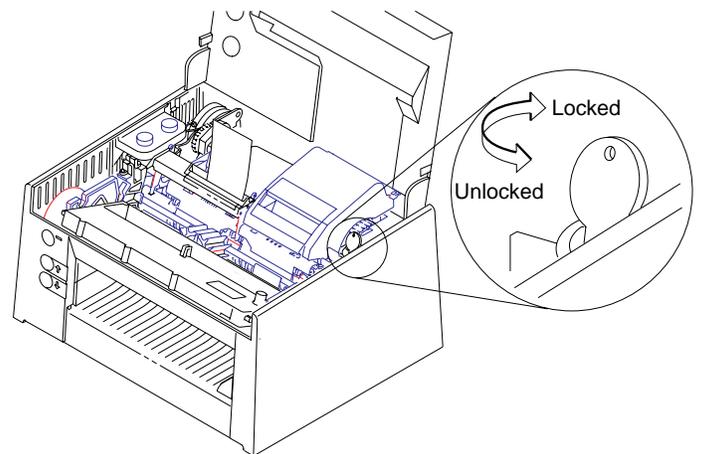
Unlocking the Journal Cover

Your terminal may have an optional keylock for securing the journal cover. This keylock is located under the printer cover, to the right of the journal cover.

To unlock the journal cover:

- 1** Raise the printer cover.
- 2** Insert the journal cover key into the journal keylock (on the right side of the journal cover).
- 3** Turn the key to the unlocked position.
- 4** Open the journal cover.

To lock the journal cover, reverse these steps. Be sure to remove the journal cover key. The printer cover does not close until the key is removed.



Testing the Model 3 or 4 Printer

The printer test lets you know the printer is working correctly. It can only be run when the cover is open and the printer has power.

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.

To run the printer test on the journal station:

- 1 Close the printer cover. Then open the cover to clear any outstanding journal errors.
- 2 Press and hold the Ready button and then press the journal advance button.
- 3 The test begins and prints 50 lines of 38 characters at the journal station.

You can stop the test at any point by pressing the Ready button.



Figure 2-19. Printer Test Pattern

A quick visual scan verifies that the printer is printing correctly. You can stop the test at any point by pressing the Ready button.

To run the printer test on the customer receipt station:

- 1 Raise the printer cover.
- 2 Press and hold the ready button and then press the customer advance receipt button.
- 3 The test begins and prints 50 lines of 38 characters at the customer receipt station.

A quick visual scan verifies that the printer is printing correctly. You can stop the test at any point by pressing the Ready button. If necessary, tear off the customer receipt paper before closing the cover.

Note: Pressing the Ready button while the test is running stops the test and causes the customer receipt paper cutter to cut the paper. This verifies that the cutter is functioning correctly.

To run the printer test on the document station:

- 1 Raise the printer cover.
- 2 Insert a blank document into:
The top of the printer and move it into the printer by pressing the document insert button **Down** button.
- or -
The front of the printer and move it into the printer by pressing the document insert button **Up** button.
- 3 Press and hold the Ready button and then press:
The document insert button **Up** button to run the test and move the document out the top of the printer.
- or -
The document insert button **Down** button to run the test and move the document out the front of the printer.
- 4 The test begins and prints 50 lines of 38 test pattern characters on the inserted document.
- 5 Remove the document from the printer by pressing:
The document insert button **Up** button to move the document out the top of the printer.
- or -
The document insert button **Down** button to move the document out the front of the printer.

A quick visual scan verifies that the printer is printing correctly. You can stop the test at any point by pressing the Ready button.

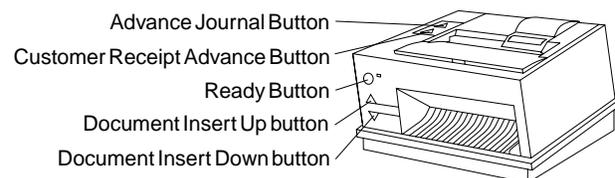


Figure 2-20. Testing the Model 4 Printer

Model 4A Point of Sale Printer

Installing a model 4A Printer

The Model 4A Point of Sale Printer is available on the IBM 4693 and 4694 Point of Sale Terminal. This model is similar to the Model 4, but in addition, contains non-volatile (FLASH) memory. FLASH memory provides the capability for the user to download any country-specific character sets (fonts) into the printer.

There is no unique installation procedure or planning required for the Model 4A Point of Sale Printer. Use the *IBM 4693 Point of Sale Terminals: Setup Instructions*, PN 73G1012 and

the *IBM 4693 Point of Sale Terminals: Introduction and Planning Guide*, SA27-3977.

Operating the Model 4A Point of Sale Printer

For DOS systems, the FLASH memory loading procedure is described in the FL.DOC file in the \FL directory on diskette 2 of the *Point of Sale Subsystem/DOS Drivers*, SX27-3960 and SX27-3961, Version 1.20 or later.

For POSS/2 systems, the FLASH memory loading procedure is described in *Point of Sale Subsystem/2 Programming Reference and User's Guide* Version 1.1 (or later), SC30-3560.

Model 3R and Model 4R Point of Sale Printers

Introduction

Model 3R and Model 4R Point of Sale Printers read the magnetic ink characters printed at the bottom of most checks, while maintaining the functions of the standard Model 3 and Model 4 printers. The Magnetic Ink Character Recognition (MICR) device consists of a read head, located in the document insert station and the associated circuitry on the printer extension card and printer logic card. Model 3R and 4R printers are identified by the presence of a check orientation label at the front of the printer. Figure 2-21 shows the location of the label on a Model 4R printer.

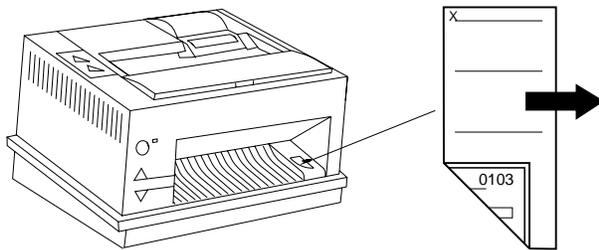


Figure 2-21. Model 4R Printer With Check Orientation Label

Installing and Planning

Model 3R and 4R printers are designed to read *E13B* and *CMC7* MICR character fonts.

Model 3R and 4R printers automatically position checks for franking at the completion of a MICR read operation. Franking is limited to a maximum of 20 characters per line at 15 characters per inch. If more characters per line are required the check must be reinserted at the normal document stop.

Video Display Placement

Terminals should be configured with the video display to the left of the printer. If a video display is installed too close to the right side of the Model 3R or 4R printer, check reading failures may occur. If you experience this problem, move the display away from the printer as far as practical. A spacing of 25 mm or more should be maintained between a video display and the side of the Model 3R or Model 4R printer.

Operating the Model 3R and Model 4R Printer

MICR Read Head Cleaning: A cleaning kit consisting of 10 individually wrapped cleaners is available using order number 73G2600. Cleaning instructions are printed on each package.

Installing the Ribbon Cartridge: When installing or replacing the ribbon cartridge on a Model 3R or 4R printer, make sure that the ribbon does not get caught behind the MICR pressure pad.

To help prevent this, install the ribbon cartridge in the printer before placing the ribbon holder onto the print head.

Inserting MICR Checks in the Printer: Checks are automatically positioned for franking at the end of a MICR read operation. Do not insert a check with staples, paper clips, or other items that may hinder the check movement.

- With the check face down and the bottom of the check against the right side frame (not the normal document stop), push the check inward until it is stopped. The green light next to the Ready button comes ON.

Notes:

1. Model 3R and 4R printers cannot read punched card checks.
2. Model 3R and 4R printers cannot read checks that have data printed in the last 33 mm of the character line (amount field).
3. Consult the store procedures or authorized personnel at your store for information on completing the check reading operation.

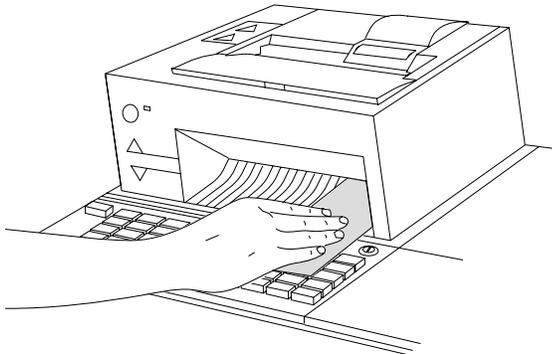


Figure 2-22. Inserting a Check in the MICR Printer

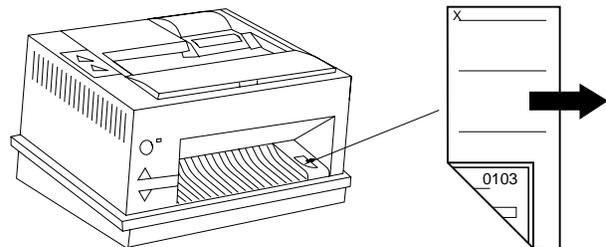


Figure 2-23. Check Orientation Label on Printer

Running the Stand-Alone MICR Test: When the printer access cover is open, the Ready button functions as a test button. The other four buttons, when pressed individually, function as paper advance buttons. See Figure 2-24 on page 2-17.

Note: Order P/N 73G2601 for a package of 10 checks.

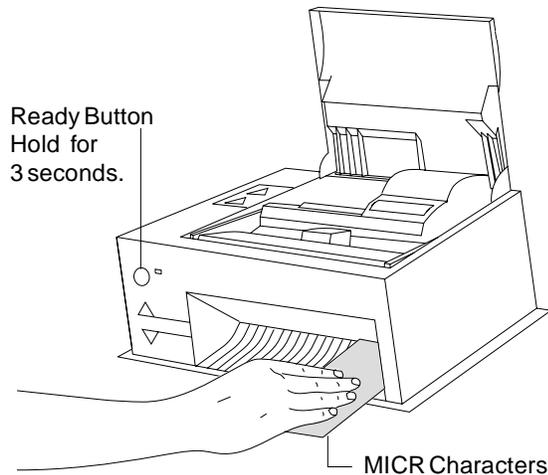


Figure 2-24. Printer Buttons

CAUTION:

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

MICR Check Reading Failure

Magnetic interference from a nearby video display, transformer, power supply, or other electrical device can cause MICR check reading failures. If you experience this problem, try moving any suspected electrical devices away from the printer as far as practical.

- 1** Open the cover on the printer.
- 2** Ensure the following conditions are met:
 - The printer is attached to the POS terminal.
 - The power is ON at the POS terminal.
 - There is no document inserted in the document insert station.

- The paper is installed correctly in the customer receipt print station. For installation instructions, see the reference documentation for your system.

3 With the check face down and against the right side frame, push the check inward until it stops. The green Ready LED comes ON.

4 Press and hold the green Ready button for three seconds to initiate the MICR test.

Note: If you continue to hold the Ready button, the test repeats every three seconds.

The check is fed into the printer until it gets to the top. The checkfeed is reversed and the MICR characters are read while feeding out the front. The MICR characters read are then printed at the customer receipt station.

When the test detects failures on the first read operation, it automatically feeds and reads the check a second time. After the check is read a second time, the characters that were read are printed, regardless of any read errors.

5 Compare the characters at the bottom of the check with those that are printed. The numeric characters should be the same. See Table 2-1 on page 2-18 for special characters.

- The test does not detect the presence of a check (Green Ready LED does not come ON).
- No characters are printed after the check is read.
- The printed characters are different than those printed on the check.
- Two passes of the check are required to read the characters.
- The checks jam.

6 The stand-alone MICR test is complete.

Special MICR Characters: Some of the special MICR characters at the bottom of a check cannot be printed. Table 2-1 illustrates the characters that print when these special characters are read.

Table 2-1. Printing Special MICR Characters

Special Character	Printed Character
⌈	\$
⌋	A
⌌	T
⌍	- (dash)

Table 2-2. CMC7 Special Characters

Special Character	Printed Character
⌈⌋⌌⌍	a
⌈⌋⌌⌍	b
⌈⌋⌌⌍	c
⌈⌋⌌⌍	d
⌈⌋⌌⌍	e

Entering Data at Your Terminal

The following sections show how to enter sales transaction data at your terminal using the card reader and bar code readers and scanners.

Operating Card Readers and Bar Code Readers

The card reader is also referred to as a magnetic stripe reader (MSR). To enter data:

- 1 Hold the magnetic stripe card horizontally with the stripe at the bottom and facing you.
- 2 Place the card in the card reader.
- 3 With a steady, smooth motion, pass the card through the reader. You can pass the card through the reader in either direction; from the left or from the right.

The response you receive is controlled by the application program for your store. If the data was not accepted, check to see if you positioned the card correctly. If you did not, turn the card to the correct position and pass the card through the reader again with a steady, smooth motion.

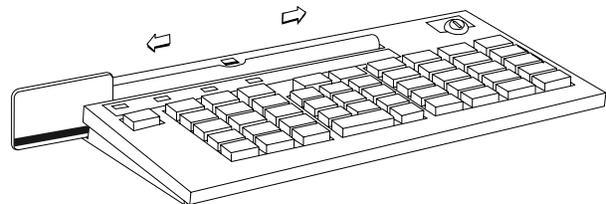


Figure 2-25. Reading a Magnetic Stripe Card

Cleaning the Card Reader

If you are using the card reader correctly and get a large number of misreads, you may need to clean the read head with an MSR cleaning card. The cleaning card, Part Number 6019483, is available through your IBM Marketing Representative. The card reader should be cleaned about every 10,000 passes. To clean the card reader:

- 1 Locate the special cleaning card.
- 2 Hold the card horizontally with the stripe at the bottom and facing you.
- 3 Pass the card through the reader several times in either direction, using a smooth, steady motion.

Entering Data with the Hand-Held Bar Code Readers

To read the barcode label on an item, do the following:

- 1 Holding the item in one hand, put the bar code reader steadily over the bar code label so that it is square with the label. *Do not move the bar code reader from side to side.*
- 2 Gently touch the reader to the label.

If you have used the bar code reader correctly, some action takes place at your terminal, depending on your application. For example, a “beep” may sound, the display may change, or the printer may start printing.

If the reading was not successful:

- 1 Check to see that the bar code label is not blocked by debris or damaged.
- 2 Make sure the bar code label is perpendicular to the reader, and not angled sideways. The bars on the label should be in a vertical position for successful reading.

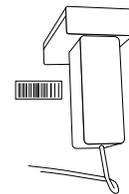


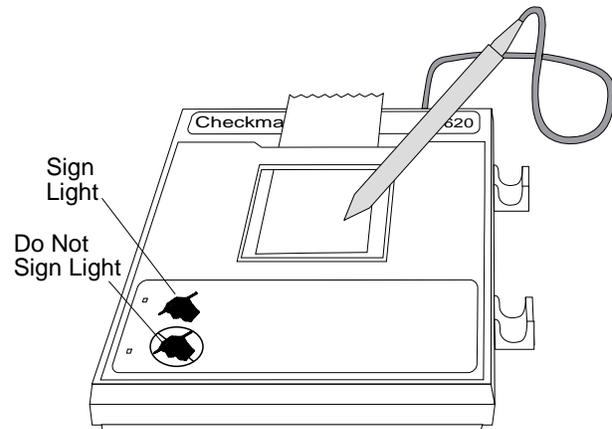
Figure 2-26. Hand-Held Bar Code Reader

Operating the Signature Capture Device

This section describes how to operate the signature capture device.

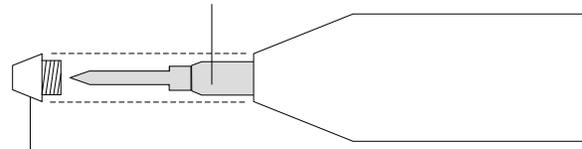
Signature Submission

- 1 The Sales Associate should slide the document under the document guide.
- 2 Start the signature when the green SIGN light comes on.
Note: The length of time the SIGN light is on can be varied (10–100 seconds), dependent on the application program. The default is set at 20 seconds.



Replacing the Pen Refill – Version 1

- 1 Unscrew the nose cone.
- 2 Pull out the old pen refill.
- 3 Install the new pen refill, ensuring it is firmly inserted into the pen until the end bottoms out on the refill holder.
- 4 Screw the nose cone back onto the end of the pen.

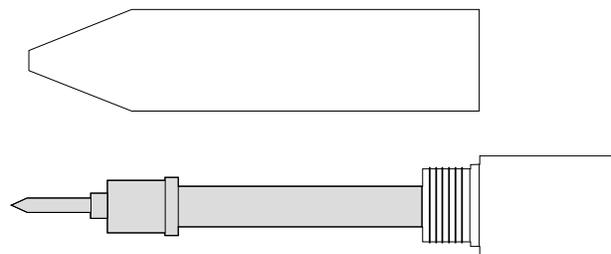


Version 2

Replacing the Pen Refill – Version 2

- 1 Unscrew the two halves of the pen.
- 2 Pull out the pen refill. Install the new pen refill, ensuring it is firmly inserted into the pen until the end bottoms out on the refill holder.
- 3 Screw the pen halves back together.

Note: Use a Cross** pen refill or the equivalent.



Appendix A. Expendable Supplies and Replaceable Parts

This appendix describes expendable supplies and replaceable parts for your terminal and identifies how to order them.

How to Order Expendable Supplies

In the U.S.A, order expendable supplies from IBM Direct. In IBM World Trade countries, order from IBM Direct, if it is available in your country. If IBM Direct is not available in your country, order through your IBM Marketing Representative or your dealer.

Table A-1. Expendable Supplies

Item	IBM Part Number
Ribbon cartridges for Point-of-Sale Printer Model 2	4483015 (black ink) 1040247 (purple ink)
Ribbon cartridges for Point-of-Sale Printer Models 3 and 4	1040888 (black ink) 1040875 (purple ink) 1040900 (black Auto-Inking)
Roll paper for IBM point-of-sale printers	432767 (1 case, 50 rolls per case)
Storage retention battery (standard duration)	93F1135
Storage retention battery (extended duration/4693 only)	93F1785
Notes:	
1. These batteries have a shelf life of two years and should not be purchased in bulk as spares.	
2. These batteries are of nickel-cadmium (Ni Cd) composition. Due to laws in some countries, they require special disposal procedures according to local country regulations. Return used storage retention batteries to IBM for disposal.	
3-1/2 inch - 2.0 MB High Density Diskettes	6404078 (Box of 10) or 6404083 (Box of 10)
3-1/2 inch - 4.0 MB Diskettes	72X6111 (Box of 10)
MICR cleaning cards for Model 3R and Model 4R Printers	7362600 (Box of 10)

Ribbon Cartridge for Point-of-Sale Printers

A ribbon cartridge, two rolls of paper, and a printer cable are shipped as a kit with IBM Model 2 printers. A ribbon cartridge and two rolls of paper are shipped as a kit with IBM Model 3 and 4 printers.

Note: Use the IBM printer ribbons listed in Table A-1 or other equivalent ribbons that use dye-based ink. The use of carbon-particle ribbons or other ribbons that are not equivalent to the IBM ribbons affect print head life and print quality.

Roll Paper for Point-of-Sale Printers

Two rolls of paper are shipped with the printer cable. One for the journal print station and the other for the document insert customer receipt station. For additional rolls, you can order the IBM part numbers listed in Table A-1 on page A-1 or equivalent. Both print stations use standard adding machine roll paper. The roll paper must meet the specifications in the following table:

Table A-2. Specifications for Roll Paper used in Point-of-Sale Printers

Width	69.85 + 0.5 mm – 0.76 mm (2.75 +0.02 in. – 0.03 in.) The maximum the core may protrude on either side is 0.76 mm (0.030 in.).
Outside diameter	89 mm (3.5 in.) maximum (for Model 2 printers) 81 mm (3.2 in.) maximum (for Model 3 or 4 printers)
Thickness	0.076 ±10% (0.003 ±10%)
Weight	61 grams/m ² (16 lb)
Grade	Service or high grade (economy or bond)
Attachment	The inner end of the roll must be secured by a reverse-tuck-start with a 19 mm (0.75 in.) maximum fold back. <i>Paper must not be attached to the core in any way.</i>
Splices	There must be no splices within the paper roll.
Marking	There must be dye stripes on the paper beginning 122 ±15 cm (48 ±6 in.) from the inner end of the roll and extending to within 30 cm (12 in.) of the end of the roll.
Core	Core material and center hole diameter are optional.

Additional Forms for Point-of-Sale Printer Model 2

The use of printed forms at the document insert station is optional. The following specifications apply to forms that may be used at the document insert station:

Table A-3. Specifications for Document Insert Forms used in the Model 2 Printer

Form Type	Specifications
Single-part form	216 mm x 330 mm (8.5 in. x 13 in.) is the recommended maximum. 69.9 mm x 152.4 mm (2.75 in. x 6 in.) is the recommended minimum. 69.9 mm x 82.5 mm (2.75 in. x 3.25 in.) is the minimum single-part form that can be used, but it only allows approximately three (3) lines of printing.
Multi-part form	216 mm x 330 mm (8.5 in. x 13 in.) is the recommended maximum. 82.5 mm x 187.3 mm (3.25 in. x 7.37 in.) is the recommended minimum.
Tab card	Size: 82.5 mm x 123.2 mm (3.25 in. x 4.85 in.) Weight: 57 to 90 grams/m ² (15 to 24 lb. paper or tab card stock) Thickness: 0.0762 mm (0.003 in.) paper to 0.2 mm (0.008 in.) Ledger card stock maximum (uncoated card stock only)

Multi-part Forms for Point-of-Sale Printer Model 2: Multi-part forms may be used in the document insert station. The maximum form thickness is 0.47 mm (0.0185 in.).

Top fastening is recommended on all forms regardless of size. Fastening is permitted on the left side of forms that are a minimum of 101.6 mm (4 in.) wide. Fastening on the right side is not permitted. Fastening must not extend more than 19.05 mm (.75 in.) from the top, bottom, or left edge of a form.

When bottom fastening is used, printing must start at least 63.5 mm (2.5 in.) from the fastening to help eliminate potential document feeding problems.

Note: No staples or metal inserts may be used on any area of the form that is inserted in the machine. No holes or openings are allowed on the form or its fastening. Forms with pre-printed lines or boxes located in areas to be printed can be used. However, the accuracy of printing between lines or in the boxes depends on the positioning of the document by the operator.

Additional Forms for Point-of-Sale Printer Model 3 or 4

The following specifications apply to forms that may be used for document insertion:

Table A-4. Specifications – Document Insert Forms for Models 3 and 4 Printer

Form	Specifications
Single-part form	216 mm x 330 mm (8.5 in. x 13 in.) is the recommended maximum. 82.5 mm x 69.9 mm (3.25 in. x 2.75 in.) is the recommended minimum. 69.9 mm (2.75 in.) is the minimum width for check franking.
Multi-part form	216 mm x 330 mm (8.5 in. x 13 in.) is the recommended maximum. 82.5 mm x 69.9 mm (3.25 in. x 2.75 in.) is the recommended minimum.

Multi-part Forms for Point-of-Sale Printer Model 3 or 4: Multi-part forms may be used in the document insertion station. The maximum form thickness is 0.47 mm (0.0185 in.) when inserted into the front of the printer and 0.25 mm (0.010 in.) when inserted into the top of the printer. The front sheet should not exceed 0.08 mm (0.003 in.) in thickness. If the multi-part form contains card stock, the card stock must be the last copy and not exceed 0.2 mm (0.008 in.) in thickness. Also, the sheets of a multi-part form should be the same size; not uneven or stepped.

Form Design

- Print on blank areas of the form. If printing is done inside boxes on the form, the boxes should be three characters high and the margins should be three characters wide to allow for printer tolerances and operator variances.
- Forms should allow for some amount of alignment error.
- The form layout should have the loose edge of the form going into the printer first.
 - Sometimes the operator bends the binding along the perforation line. Ensure that the forms are flat.
 - Sometimes forms are produced with a defective or marginal binding. The leading edge on the form causes most of the problems.
- Use a top margin of 29 mm or 1.14 in. or larger. This allows the operator to see the form exit the top cover before printing starts. The operator can open the top cover to stop the printer and clear out the jam before any printing occurs.
- Order the form without holes or openings. For example, tractor feed holes sometimes get dislodged inside the printer and turn on the DI sensors. Sometimes the sensors cannot sense the form because it is looking through a hole.
- No staples or metal inserts should be used on any area of the forms that are inserted into the machine and no holes or openings are allowed on the forms or their fastenings.

Appendix B. Operator and Programmer Information

This appendix has helpful techniques both for the operator and for the programmer, when using point-of-sale printers.

Operator Techniques for the Point-of-Sale Printers

The following techniques should be followed by the operator.

- The operator must insert the form so that it is engaged between the feed rollers. The green sensor light is activated before the form is between the rollers.
- The operator reduces the form twist by pushing the entire width of the form into the feed rollers.
- Bent, curled, or defective forms cause problems. The leading edge causes most of the problems. Ensure that the form is flat.
 - Crumpled or curled forms should be smoothed out or flattened as much as possible.
 - Select forms from the middle of the stack. Forms on the top tend to curl. This method minimizes form curl problems.
- Folded, wadded, crumpled, or damaged checks are difficult to feed through the printer.
 - 1 The best solution is to fill the check out using a pen rather than attempt to use the printer.
 - 2 If for some reason this cannot be done, the operator should flatten the check out as much as possible before inserting it into the printer. The entire length of the check must be pushed into the feed rollers to eliminate the form twist that occurs.
 - 3 If the check does not feed out of the printer correctly, lift the printer cover to stop the printer from tearing the check.

Note: Damaged checks may feed more reliably if they are inserted from the top rather than from the front. The application program can allow the operator to insert the check from either direction.

Application Program Techniques for Point-of-Sale Printers

If the printer jams repeatedly, there are techniques that the application programmer can use to ensure that the printer should not jam:

- 1 Move the print head into position before prompting the operator to insert the form.
 - a. On *narrow* forms, move the print head to the left-most position. A narrow form is between 70 to 130 mm or 2 1/2 in. to 5 1/8 in. wide.
 - b. On *wide* forms or very narrow forms, move the print head to the center position before prompting the operator to insert the form into the top or into the front of the printer.

Note: The application program should allow the operator to insert the form from the front and top of the printer. The application can check the direction of insertion by reading the status of the upper and lower document insert sensors.
- 2 The application program should check the status of the document insert Ready bit which gets turned on when the form activates both document insert sensors.

If the operator has pressed the key and document insert Ready bit is not turned on, prompt the operator to push the form further into the printer and press the key again.

3 Move the print head onto the form.

- For front-loaded *narrow* forms the first print line is located 20 mm or .75 in. from the top edge of the form. The cover holds the form flat so the print head can slide freely over the form.
 - a** Feed the form up past the cover.
 - b** Move the print head onto the form.
 - c** Move the form back down to the first line of print.
- For front loaded *wide* forms the first print line is located 20 mm or .75 in. from the top edge of the form. Move the print head to the center before advancing the form past the cover. Keeping the print head at the right or left position can deflect a form so that it catches on the cover inside the printer.

4 After printing is completed, eject the form. Prompt the operator to remove the form.

5 Check the document insert sensors to ensure that the operator has removed the form. Continue with normal receipt and journal printing.

Appendix C. Display Configurations and Controls

This appendix has information on display configurations and controls.

Flat Panel Display Controls

There are controls on the front to change contrast, brightness, and reverse video.

- Contrast** The right-hand pair of up and down triangle buttons control contrast. The contrast changes continuously within the allowable range while the buttons are pressed.
- Brightness** The left-hand pair of up and down triangle buttons control brightness. The brightness changes continuously while the buttons are pressed.
- Reverse Video** The right-hand round button switches the display between normal and reverse video.
- Sleep/Resume** The left-hand round button controls the Sleep and Resume functions. See "Flat Panel Display Sleep Control" on page C-2.

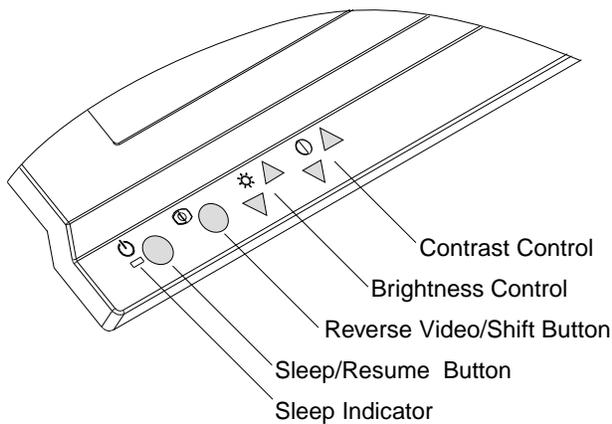


Figure C-1. Visual Controls

Sure Point Touch Display Controls

There are controls on the front of the touch display that change contrast, brightness, and reverse video.

Sleep/Resume The left-hand round button controls the sleep and resume functions.

Reverse Video The right-hand round button switches the display between normal and reverse video. This function is available on the monochrome model only.

Brightness The left-hand pair of up and down triangle buttons control the brightness. The brightness changes continuously while the buttons are pressed.

Contrast The right-hand pair of up and down triangle buttons control the contrast. The contrast changes continuously within the allowable range while the buttons are pressed.

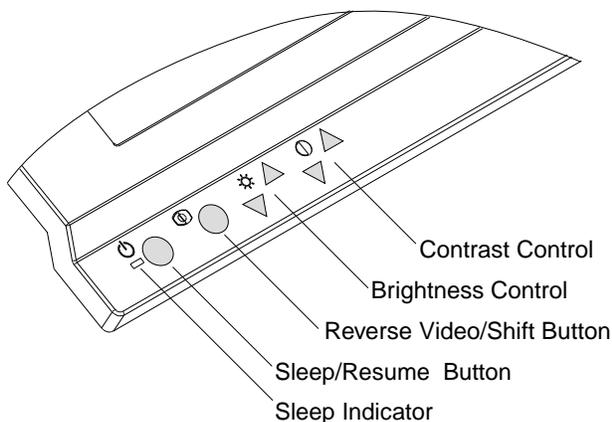
Sure Point Touch Display Beeper Controls

The controls on the front of the touch display change the frequency and loudness of the beeper.

Beeper Control

Frequency The right-hand pair of up and down triangle buttons and the reverse/shift video button pressed at the same time control the frequency of the beeper. The frequency changes continuously within the allowable range (1500-3500 Hz) while the buttons are pressed.

Loudness The left-hand pair of up and down triangle buttons and the reverse video/shift button pressed at the same time control the loudness of beeper.



Mercury Disposal

The touch display contains a cold cathode fluorescent lamp (CCFL) that contains mercury. Dispose of it in accordance with local ordinances or regulations.

Sure Point Touch Display Calibration

1. Press and hold down the Sleep/Resume button and at the same time switch Ready mode On.
2. Wait to hear three beeps, then touch the lower left corner of the screen. See Figure C-2.
3. Wait to hear two beeps, then touch the upper right corner of the screen.
4. One more beep indicates calibration is complete.
5. Load the Reference diskette (Micro Channel) or the Service diskette (ISA bus).

The menu flow to run the Calibration test is the same for IBM ISA bus and Micro Channel Point-of-Sale Terminals. The menus are dynamic and change depending upon the configuration.

6. Select Test Menu, when the Main Menu is displayed.
7. Select Run POS Device Tests.
8. Select Run Terminal X (X=terminal being tested).

The touch display test and calibration test is displayed, when the touch display is attached.

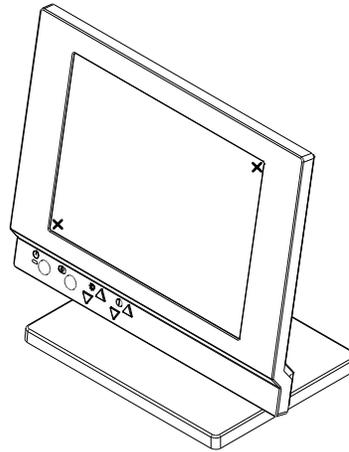


Figure C-2. Low Resolution Calibration

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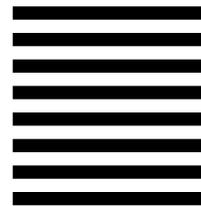
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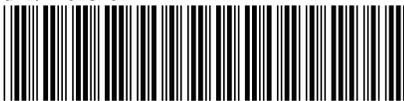


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