

SurePOS 500/600 Series



Hardware Service Guide

SurePOS 500/600 Series



Hardware Service Guide

Note

Before using this information and the product it supports, be sure to read the “Safety and notice information” on page xiii, and the general information under Appendix G, “Notices”, on page 225 and “Electronic emission notices” on page 226.

Fifth Edition (May 2002)

This edition applies to the IBM SurePOS 500/600 Series system. This publication is available on the IBM Retail Store Solutions Publications Web site.

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Safety and notice information

Before you begin to install this product, read the safety information in Appendix H, "Safety Information", on page 231, the general information under Appendix G, "Notices", on page 225 and "Electronic emission notices" on page 226.

About this manual

This manual describes the problem determination and field-replaceable-unit (FRU) replacement procedures for the SurePOS 500/600. This manual is organized as follows:

- **Chapter 1, “Introducing the SurePOS 500/600 Series”** provides architecture and migration statements; introduces the various models, features, and mounting options; and identifies the attachable I/O devices.
- **Chapter 2, “Connecting input/output devices”** provides information about the connector panels used to attached I/O devices to the system.
- **Chapter 3, “Resolving problems”** explains how to diagnose and correct problems.
- **Chapter 4, “Removing and replacing FRUs”** consists of FRU removal and replacement procedures for SurePOS 500/600.
- **Chapter 5, “Installing SurePOS 500/600 with Wall Mount feature options”** consists of FRU removal and replacement procedures for SurePOS 500/600 with Wall Mount feature.
- **Chapter 6, “Control procedures for the SurePOS 500/600 Series”** explains how to update the flash BIOS and to run the Setup Utility.
- **Chapter 7, “Keyboard– Removing and Replacing”, on page 167** provides removal and replacement procedures for the Compact ANPOS keyboard.
- **Appendix A, “SurePOS 500/600 Series parts catalog”** provides illustrations of the assemblies and replacement part numbers for the SurePOS 500/600 Series FRUs.
- **Appendix B, “Power cords”** provides information about the cables and power cords used with SurePOS 500/600 Series systems.
- **Appendix C, “Connector-pin assignments”, on page 205** provides connector pin assignments for cables and connectors in the system.
- **Appendix D, “IRQ and DMA channel assignments”, on page 213** gives you the system IRQ and DMA assignments.
- **Appendix E, “Operating and maintaining the system”, on page 215** provides useful information about operating and maintaining the SurePOS 500/600 system.
- **Appendix F, “SurePOS 500/600 Series tips”** provides information for service personnel who may replace components, such as the system board and processor.
- **Appendix G, “Notices”** provides legal notices, electronic emission notices, and trademark information.
- **Appendix H, “Safety Information”, on page 231** gives you safety information and electronic emission notices.

Who should use this manual

This manual is to be used by trained point-of-sale equipment service representatives.

Related publications

The following IBM publications are also available from the Retail Store Solutions Web site:

- *Safety Information – Read This First*, GA27–4004
- *SurePOS 500/600 Series Installation and Operation Guide*, GA27–4254
- *4610 SureMark Point-of-Sale Printers Hardware Service Manual*, GY27–0355
- *4610 SureMark Point-of-Sale Printers User's Guide*, GA27–4151
- *Space Saver Keyboard User's Guide*, Part Number 37L1381
- *4820 SurePoint Solutions System Reference*, SY27–4249
- *4820 SurePoint Solutions System Reference*, SY27–4249

To access these publications:

1. Go to www.ibm.com/solutions/retail/store/.
2. Select **Support**, then select **Publications**.

Service diskette, device drivers and diagnostic information

The following driver and diagnostic programs are available on the IBM Retail Store Solutions Web site at www.ibm.com/solutions/retail/store/.

- SurePOS 500/600 Series Service Diskette
- SurePOS 500/600 Series Device Drivers
- 4820 SurePoint Service Diskette

To access these programs:

1. Go to www.ibm.com/solutions/retail/store/.
2. Select **Support**.
3. Select the device, such as **IBM SurePOS 500/600 Series**.
4. Under Download, select the appropriate item.

For more information about using the Service Diskette, see “Using the Service Diskette” on page 165.

Summary of Changes

Web Only Update for GY27-0396-03 (August 2002)

This edition includes updates to Appendix A, SurePOS 500/600 Series Parts Catalog. Changed or new information is indicated by a revision character (I) in the left margin. (May 7, 2003 - corrected some part numbers on page 179.)

Web Only Update for GY27-0396-03 (May 2002)

This section summarizes the changes included in the latest edition of this manual.

- Information about new SurePOS 500/600 Series models 532, 542, 552, 562, 622, 642, and 652.
- Information about the 1.2 GHz processor for the new models.
- Information about the new system board and new tailgate connectors.
- New part numbers.
- New appendix: Appendix C, "Connector-pin assignments", on page 205.
- New appendix: Appendix D, "IRQ and DMA channel assignments", on page 213.
- Miscellaneous editorial changes.
- Compact ANPOS keyboard
- Information about the Model 611 (previously removed)

Chapter 1. Introducing the SurePOS 500/600 Series

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The IBM SurePOS 500/600 Series (*SurePOS 500/600*) enables you to provide fast, accurate customer service and to manage your restaurant or store efficiently. The machine type for the SurePOS 500/600 is 4840. The 4840 models are listed in Table 1 on page 2. The SurePOS 500 is designed for the food service specialties, while the SurePOS 600 is designed for retail specialties. You can configure the SurePOS 500/600 systems to support a wide variety of both IBM and non-IBM I/O devices – everything from standard serial-attached devices, such as the IBM Kitchen Subsystem or IBM 4610 SureMark printer, to USB-attached devices. The SurePOS 500/600 can only be mounted to a wall if ordered as a SurePOS 500/600 with Wall Mount feature.

System resources and the operating system may limit the use of ports. Figure 1 on page 2 shows a sample SurePOS 500/600 configuration.

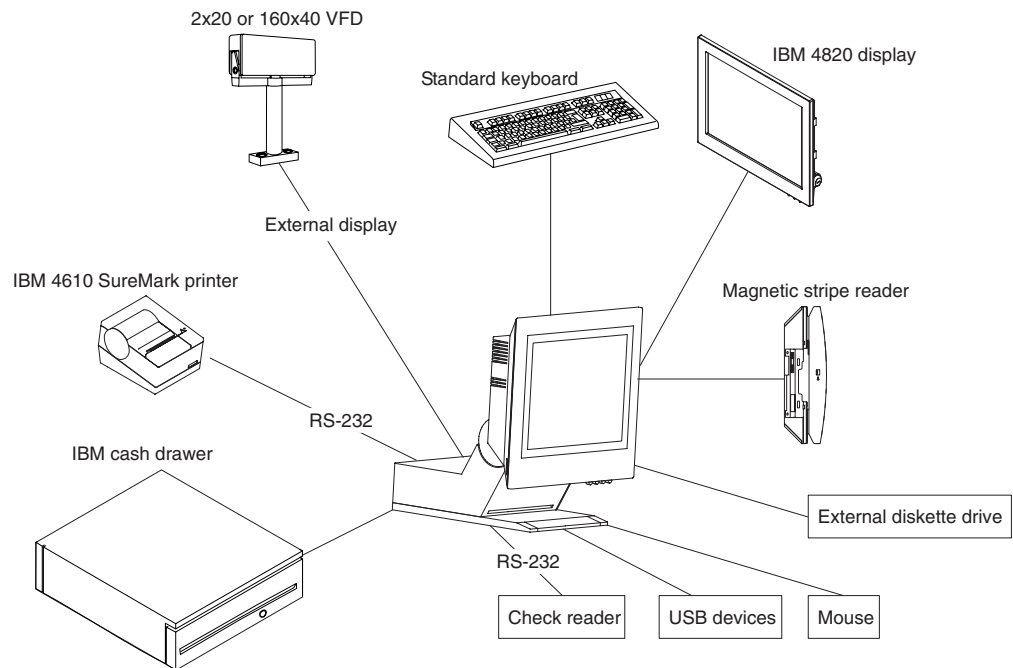


Figure 1. SurePOS 500/600 configuration with optional features

SurePOS 500/600 models

The SurePOS 500/600 Series is available in 30 models.

All models whose model numbers end with "1" use an AMD K6-2 400-MHz processor with PC100 synchronous DRAM system memory. Models whose numbers end with "2" use an Intel Celeron 1.2-GHz processor with PC133 synchronous DRAM system memory.

Models 521, 53x, 54x, 55x, 56x and 65x provide a resistive touch screen, 10/100-Mbps networking, and all standard PC ports. Models 62x also provide 10/100-Mbps networking and all standard PC ports. However, models 62x do not have a resistive touch screen; a keyboard is used instead. Table 1 and Table 2 on page 3 list the distinctive differences in the features among the models. Additional standard features and optional features are listed following the table.

SurePOS 500 Models

The SurePOS 500 models are designed for food service or hospitality retailers.

Table 1. SurePOS 500 Features

Model	Operator terminal	Audio	PC card	Presence detector
4840–521	12.1 in. Dual Bulb, Passive (DSTN) Color LCD	No		No
4840–531, 532	12.1 in. Single Bulb, Active (TFT) Color LCD	No		No
4840–551, 552	12.1 in. Single Bulb, Active (TFT) Color LCD	Yes		No

Table 1. SurePOS 500 Features (continued)

Model	Operator terminal	Audio	PC card	Presence detector
4840–541, 542	12.1 in., Dual Bulb, Ultra-bright Active Color Display	No		No
4840–561, 562		Yes		Yes

SurePOS 600 Models

The SurePOS 600 models are designed for the retail environment.

Table 2. SurePOS 600 Features

Model	Operator terminal	Audio	PC card	Presence detector
4840–611, 621, 622	12.1 in. Single Bulb, Active (TFT) Color LCD, Non-touch	No		No
4840– 642	12.1 in., Dual Bulb, Ultra-bright Active Color Display	No		No
4840–651, 652	12.1 in. Single Bulb, Active (TFT) Color LCD	Yes		No

Standard features:

The following features are standard on all models.

- Integrated power supply
- 3.5-in., IDE, hard disk drive (HDD) or optional CompactFlash (Model 532 only)
- Three RS-232 serial ports (Models xx1) or three RJ-45 serial ports (Models xx2)
- Two cash-drawer ports
- External video port
- Parallel port
- Two universal serial bus (USB) ports
- External diskette-drive port
- Magnetic stripe reader (MSR) connector
- Integrated and distributed character display connectors
- Advanced cooling-pipe technology

System resources and operating systems may limit the use of ports.

Optional features

The following options are available on all models unless otherwise specified:

- SurePOS 500/600 with Wall Mount feature (Models 521, 531, 532, 541, 542, 551, 561, 642, and 651 only)
- Full-size cash drawer, locking till, till insert (fixed and adjustable), and lock
- Compact cash drawer, locking till, till insert (fixed and adjustable), and lock
- Full-size, non-keyboard-integration tray for cash drawer and countertop
- Full-size, keyboard-integration tray for cash drawer and countertop
- Compact keyboard-integration tray for cash drawer
- 32-MB, 64-MB, 128-MB, and 256-MB additional memory upgrades (256-MB upgrade for Models xx2 only)
- Integrated character display
- Distributed character display (pole mount)
- All points addressable (APA) character-graphic display
- IBM 1.44-MB, external diskette drive
- Three-Track MSR
- Dual-sided, single-track MSR (Japan and Korea only)
- Mouse and keyboard "Y" cable
- IBM SurePOS 500/600 Series Compact ANPOS Keyboard
- 4610 SureMark Printer (Models TF6, TF7, IF6 TG3, TG4, TG5, TI3, TI4, TI5, DG3, and DG4)

Note: The **D** in the models DG3 and DG4 stands for Depot warranty. The **I** in model IF6, TI3, TI4, and TI5 stands for IBM on-site repair (IOR) warranty.

- 4820 SurePoint Solutions (Models 4FT and 4FD)
- CompactFlash (Model 532 only)

The following features are available only on SurePOS 500/600 Models 551, 552, 561, 562, 621, 622, 651, and 652:

- Audio (speaker kit, microphone port, headphone port)
- PC card support, including wireless

Dual-display feature

The SurePOS 500/600 provides dual-display capability. Information displayed on the SurePOS 500/600 display is presented simultaneously on an attached display. The 4820 SurePoint Solutions (Models 4FT and 4FD) can be integrated onto the base of the SurePOS 500/600 or attached as a distributed model. Other external VGA devices can be connected to the SurePOS 500/600 Series 15-pin port.

PC Card subsystem

Models 551, 552, 561, 562, 621, 622, 651, and 652, provide a PC Card subsystem that accepts a single Type 1 or Type 2 PC Card. The subsystem allows you to use a wireless card on these models. An optional PC Card filler panel is available for use with wireless PC Card cards.

Note: RPL and power up (wake) on LAN or Ring are not supported for PC Card cards.

System software features

The SurePOS 500/600 supports the following operating systems:

- DOS 2000 (USB, audio and PC card are not supported)
- Windows® 98 Second Edition
- Windows 2000
- Windows NT 4.0 (Service Pack 6, limitations on PC card, USB not supported)

System software includes:

- Basic input/output software (BIOS)
- Plug-and-Play BIOS
- Power-on self-test (POST)
- Configuration/Setup Utility program
- Advanced Power Management (APM)¹
- Advanced Configuration and Power Interface (ACPI)²
- Touch-screen calibration utility during POST
- Flash-update utility program
- SurePOS 500/600 Diagnostic Service Diskette

Understanding the architecture

The SurePOS 500/600 meets standard PC architecture requirements. The external video-display connector is compatible with Super Video Graphics Array (SVGA). The displays connect to the system through a serial port. The three-track MSR communicates with the system through a MSR connector using a serial interface or the PS/2 keyboard interface, selectable by means of a switch on the MSR. The dual-sided, single-track MSR communicates serially.

The SurePOS 500/600 does not require POS drivers to access the I/O devices; the following application programming interfaces (APIs) allow access:

- Direct hardware (allows you to access function not supported by OPOS and JavaPOS)
- POSS Win
- OLE for Retail POS (OPOS)
- JavaPOS

OPOS drivers are available for the MSR (serial mode only), character display, and cash drawer. POSS Win drivers are available for fiscal printer and customer LCD features only. For more information, access the Retail Store Solutions Internet site at: www.ibm.com/solutions/retail/store/, select **Support**, and under Point of Sale Support, select **IBM SurePOS 500/600 Series**.

For baud rate settings, go to “Peripheral default baud rates” on page 165

1. APM is fully supported on Windows 98, and supported on Windows 2000 with the exceptions of suspend and resume.

2. ACPI is supported only on Windows 98 and Windows 2000.

Mounting options

You can mount the SurePOS 500/600 in the following ways:

- Free standing on a counter top
- Secured to a counter top (with or without an integration tray)
- Secured to a full-size drawer (with an integration tray)
- Secured to a wall. The Wall Mount feature must be specified when ordering your SurePOS 500/600. (This mounting option is not available for Models 552, 562, 611, 621, 622, 652.)

Free-standing mounting option

Figure 2 illustrates the free-standing mounting option.

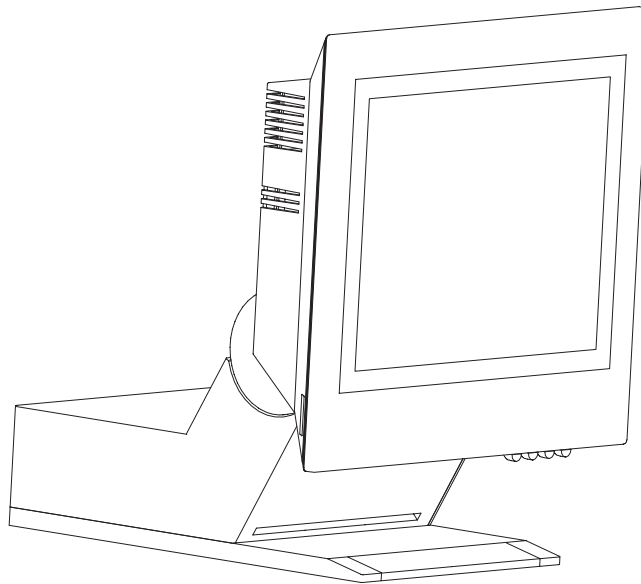


Figure 2. Free-standing mounting option

Countertop mounting options

There are two variations of the countertop mounting option. You can mount the free-standing base foot to the counter or you can use the countertop integration tray. If you are using a countertop integration tray, the base foot on the SurePOS 500/600 is replaced with an mounting bracket. The SurePOS 500/600 is then securely attached to the integration tray with two screws. Figure 3 shows a SurePOS 500/600 and an IBM 4610 SureMark printer mounted to a countertop integration tray.

Note: With the countertop integration tray option, the IBM 4610 SureMark printer must be mounted along with the SurePOS 500/600. The countertop integration tray option should not be used if you are not using the printer.

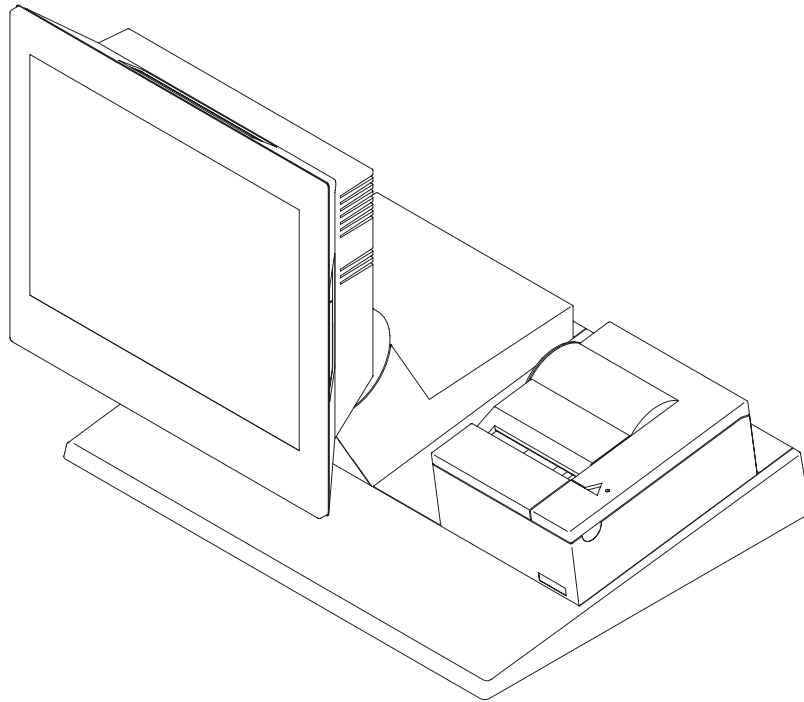


Figure 3. Countertop mounting option with integration tray

Figure 4 shows a SurePOS 500/600, a keyboard and a IBM 4610 SureMark printer mounted to a countertop keyboard-integration tray.

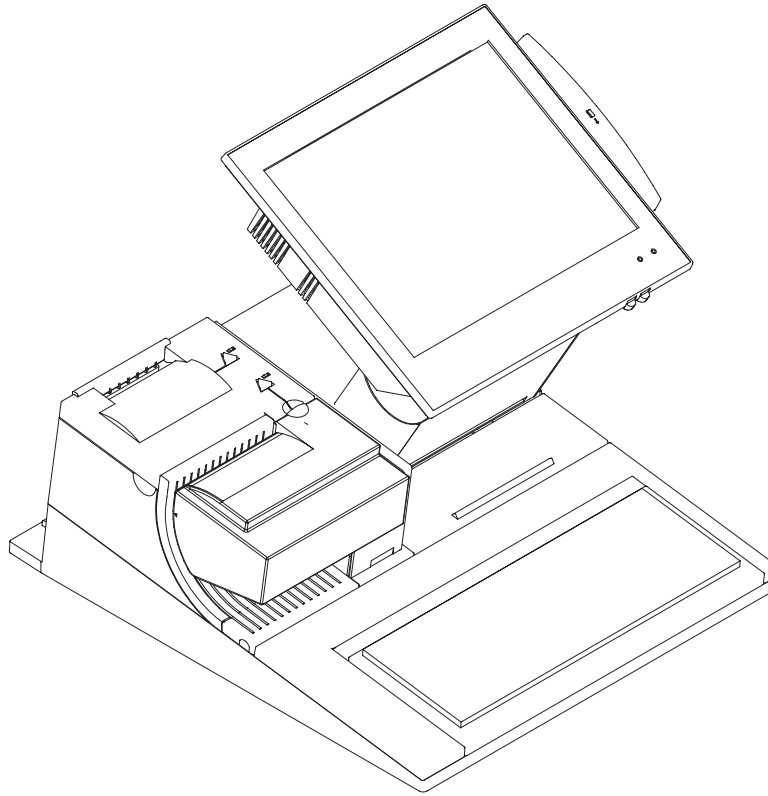


Figure 4. Countertop mounting option with keyboard integration tray

Cash-drawer mounting option

The SurePOS 500/600 cash-drawer mounting option is similar to the countertop option, except that the system attaches to the cash drawer by means of an integration tray and the cash drawer can be secured to a counter top. Figure 5 shows the full-size cash-drawer mounting option.

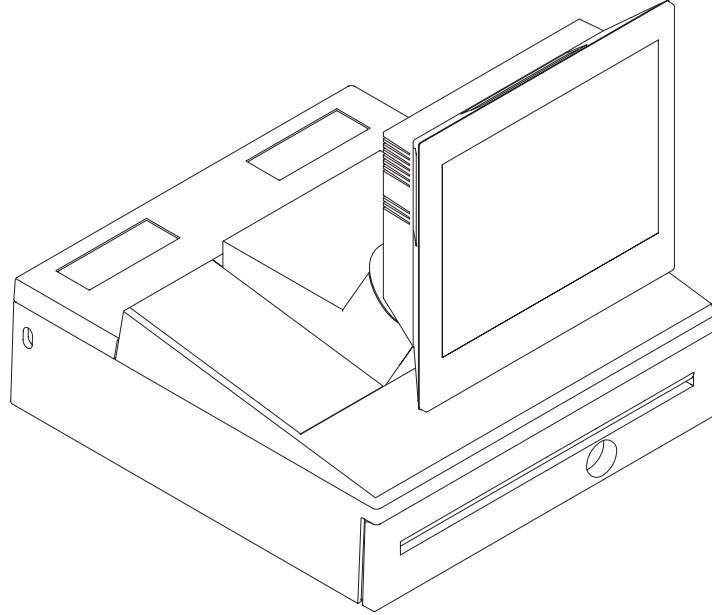


Figure 5. Cash-drawer mounting option

Figure 6 shows the full-size, cash-drawer mounting option with keyboard-integration tray.

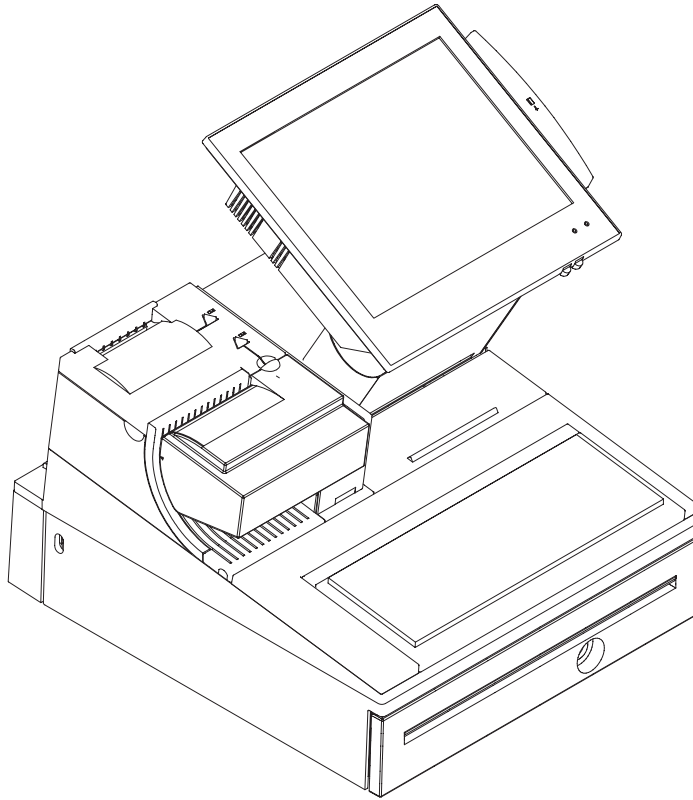


Figure 6. Full-size cash-drawer mounting option with keyboard-integration tray

Figure 7 shows the full-size cash-drawer mounting option with keyboard integration tray, integrated character display and 4820 SurePoint Solution display option.

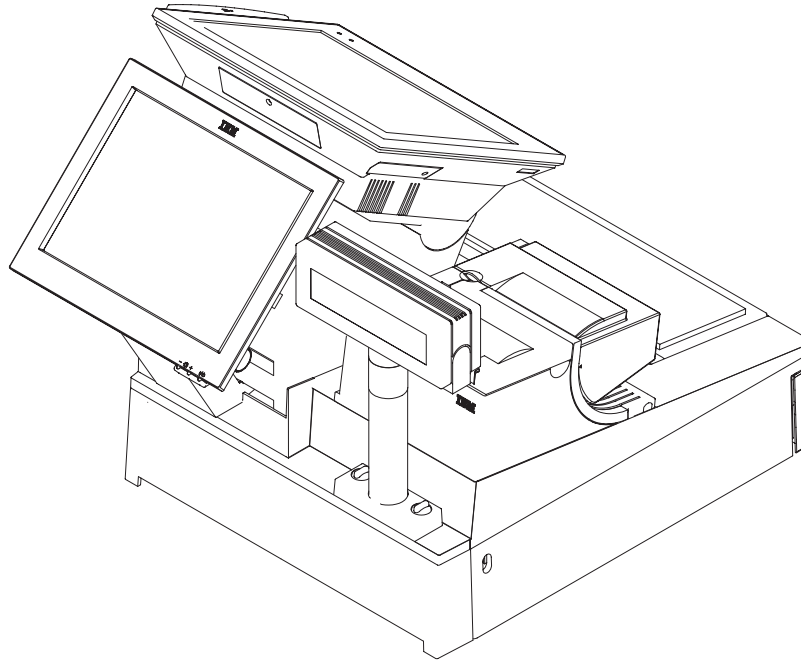


Figure 7. Cash-drawer mounting option with keyboard integration tray, integrated character display and 4820 SurePoint Solution display options

Figure 8 shows the compact-size cash-drawer with keyboard-integration tray mounting option.

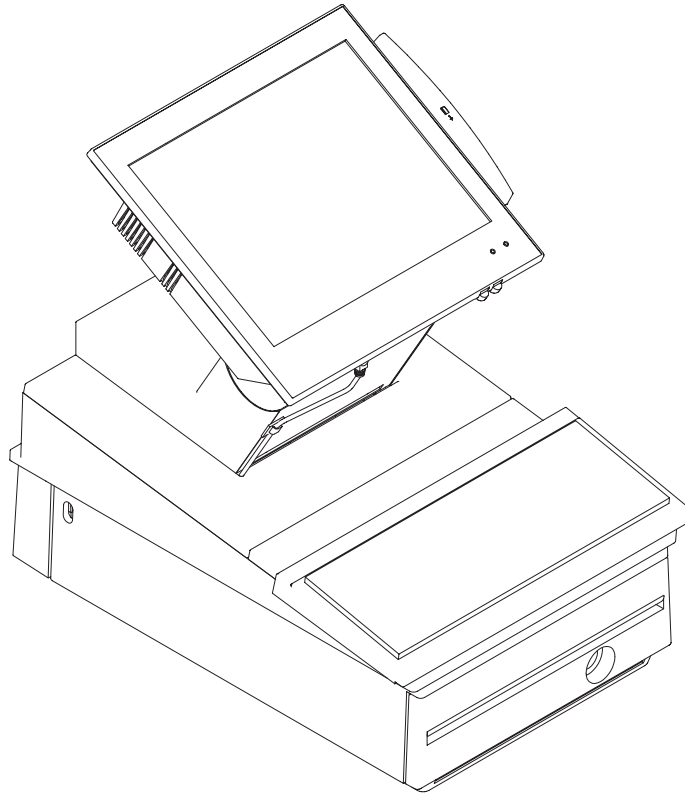


Figure 8. Compact-size cash-drawer with keyboard-integration tray mounting option

Wall-mounting feature

The following figure illustrates the SurePOS 500/600 with the Wall Mount feature. You must specify the wall-mounting feature when ordering your SurePOS 500/600. The wall-mounting feature is not available for models 552, 562, 611, 621, 622, and 652.

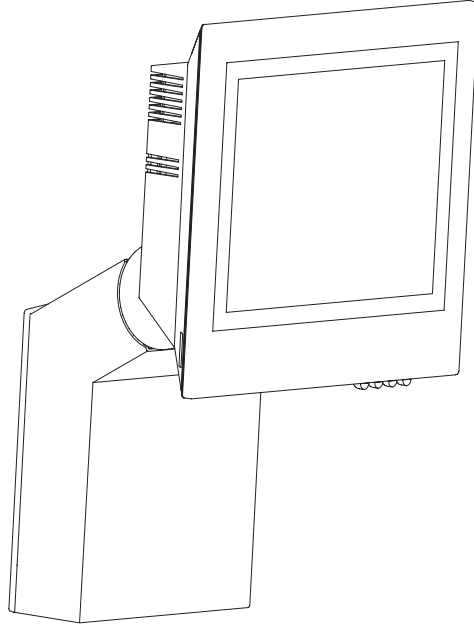


Figure 9. Wall-mounting option

System management

This section describes the types of system management available with the SurePOS 500/600.

System management programs

The SurePOS 500/600 supports the following system and power management programs:

Desktop Management Interface

The SurePOS 500 supports System Management BIOS (SMBIOS) 2.3, providing a DMI-compliant agent such as Tivoli®. This allows access to low-level information. Examples of information that can be accessed are the BIOS level, processor type, speed, manufacturer, system-board information, and detailed memory information.

LAN Client Control Manager

LAN Client Control Manager (LCCM) is a key component in IBM's Universal Management offering for POS systems running in a Windows-based environment.

APM APM consists of several layers of software that allow the operating system, applications, and BIOS to work together to reduce power consumption.

Advanced Configuration and Power Interface

Advanced Configuration and Power Interface (ACPI) V1.0 defines a hardware and software interface and tables by which the operating system can alter the characteristics of the hardware-specific devices.

Power up (wake) on LAN

This feature enables the system to power on when it receives a specific frame over the LAN through the 10/100-Mbps Ethernet feature. You can enable power up (wake) on LAN by enabling **Power up on LAN** in the Setup Utility program.

Power up (wake) on ring

This feature enables the system to power on when it receives a ring from an external modem connected to a serial port. You can enable power up (wake) on ring by enabling **Power up on Ring** in the Setup Utility program.

Power up (wake) on daily alarm

This feature enables the system to turn on at the same time every day. You can enable power up (wake) on daily alarm by enabling **Power up on Daily Alarm** in the Setup Utility program.

Remote management

The SurePOS 500/600 supports remote system management over the network. The following functions are supported:

- Selectable startup sequence
- Update POST/BIOS from the network
- Ethernet setup
- Power up (wake) on LAN

Compatible products

The IBM SurePOS 500/600 Series models are most similar to the SureOne POS workstations and are not compatible with any IBM food service POS workstation. IBM designed the SurePOS 500/600 to operate with the many POS PC applications. These applications are available in the marketplace through retail, mail order, or independent dealers.

You can use the following products with the SurePOS 500/600:

- 4610 SureMark Single Station Thermal Printer (RS-232 models)
- 4610 SureMark Printer
- 4820 SurePoint Solution Terminal
- IBM Kitchen System
- OEM USB devices
- OEM RS-232 printers
- OEM parallel printers
- CRT displays

System port specifications

Table 3 shows the default serial-port assignments in the configuration.

Table 3. Default serial-port assignments

Port assignment	Address range (hex)	IRQ	Assignment
Serial A	03F8–03FF	4	User available
Serial B	02F8–02FF	3	User available
Serial C	Disabled	None	None
Serial D	02E8–02EF	11	character display (If not using character display and cash drawer, serial D is user available)
Serial E	03E8–03EF	10	MSR
Serial F	02E0–02E7	15	Touch

Table 4 shows the default parallel-port assignment used in the configuration.

Table 4. Default parallel-port assignment

Port Assignment	Address Range (hex)	IRQ
Parallel	0378–037F	7

Table 5 shows the default port assignment used in the configurations for keyboard and mouse.

Table 5. PS/2 keyboard/mouse port assignment

Port Assignment	Addresses	IRQ Level
PS/2 Keyboard	60 and 64	1
Mouse	60 and 64	12

The SurePOS 500/600 Series has an integrated Ethernet subsystem. The Ethernet connector on the rear connector panel has two LEDs, which indicate the following link status:

Left indicator	On: 100-Mbps line speed
	Off: 10-Mbps line speed
Right indicator	On: Link established
	Off: Link broken

Chapter 2. Connecting input/output devices

Front and tailgate connector panels	17
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This chapter describes the front and rear connector panels of the SurePOS 500/600. Locate the connectors for attaching external peripheral devices under the front edge of the display and on the tailgate between the display and the base. The MSR connector is on the right side of the display. The front connectors are for:

- Keyboard/mouse (Models xx1 only)
- Diskette drive
- Headphone (Models 551, 552, 561, 562, 621, 622, 651, and 652 only)
- Microphone (Models 551, 552, 561, 562, 621, 622, 651, and 652 only)
- Stereo speaker kit (bottom right under display edge) (Models 551, 552, 561, 562, 621, 622, 651, and 652 only)
- Two USB ports (Models xx2 only)

The rear (tailgate) connectors are:

- Keyboard/mouse (Models xx2 only)
- Three Standard serial (Models xx1) or RJ45 ports (Models xx2)
- Parallel
- Cash drawer (2)
- Powered, serial, 15-pin, distributed character display (2x20 or 160x40 APA)
- External video display
- Ethernet
- USB (2)

Front and tailgate connector panels

A symbol, located directly above each connector, identifies connectors on the tailgate for features integrated into the system board. A connector located on an adapter might not have an identifying icon.

Figure 10 and Figure 11 on page 18 show the front connector panel, located under the front edge of the display.

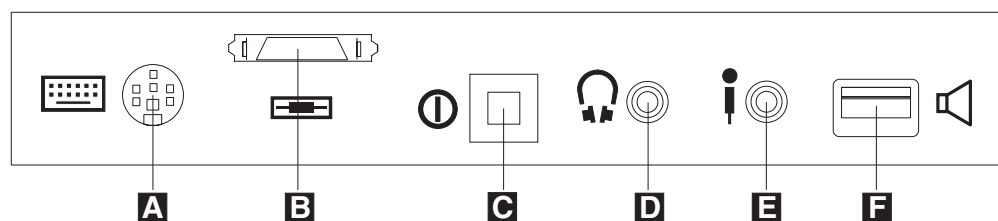


Figure 10. Front connector panel, Model xx1

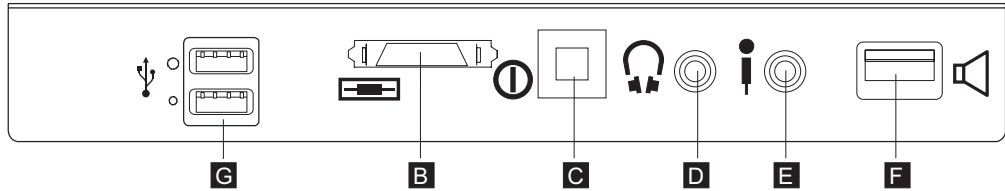


Figure 11. Front connector panel, Model xx2

- | | |
|---|--|
| A Keyboard/mouse connector (Models xx1 only) | D Headphone connector (Models 551, 552, 561, 562, 621, 622, 651, and 652 only) |
| B Diskette-drive connector | E Microphone connector (Models 551, 552, 561, 562, 621, 622, 651, and 652 only) |
| C Power switch | F Stereo-speaker kit connector (Models 551, 552, 561, 562, 621, 622, 651, and 652 only) |

Figure 12 and Figure 13 on page 19 show the rear connector panel, located on the tailgate between the display and the base.

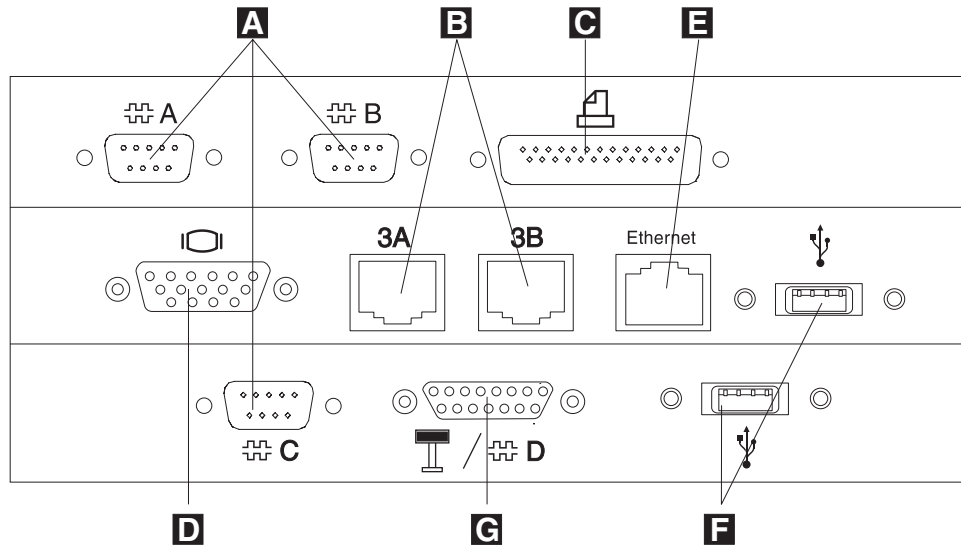


Figure 12. Rear connector panel for Models xx1

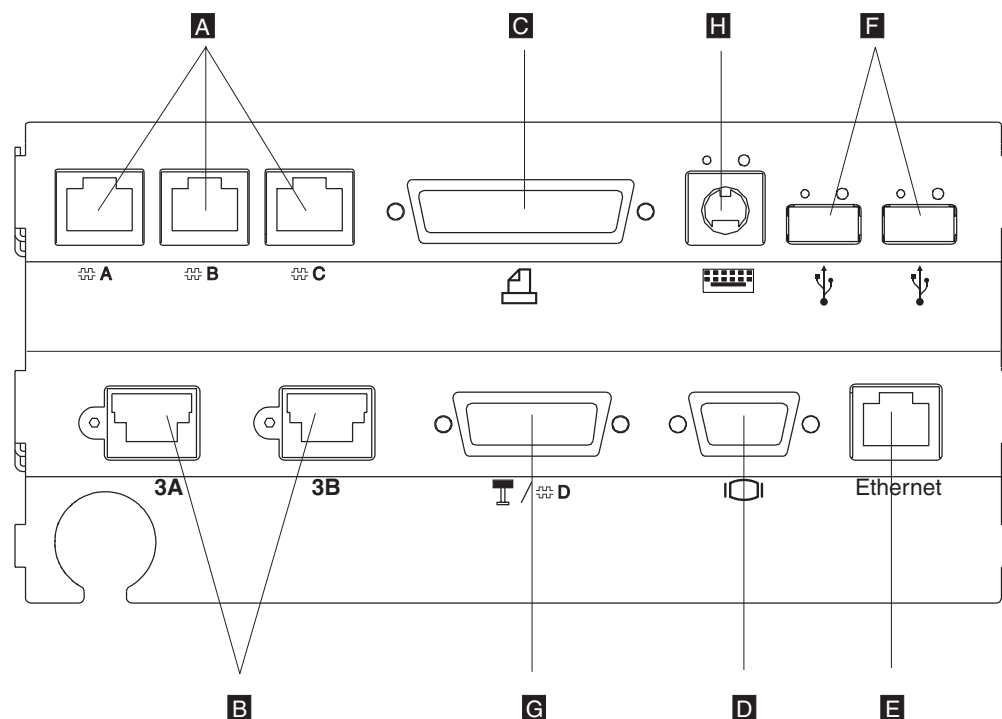


Figure 13. Rear connector panel for Models xx2

- | | | | |
|----------|----------------------------|----------|--|
| A | Serial connectors (3) | E | Ethernet connector |
| B | Cash drawer connectors (2) | F | USB connectors (2) |
| C | Parallel connector | G | 15-pin serial connector for a character display. |
| D | External video connector | H | Keyboard/mouse connector (Models xx2 only) |

Chapter 3. Resolving problems

Start problem diagnosis here	21
Preliminary checklist	22
Troubleshooting	23
Error codes	27
POST error codes	27
POST beep codes	29
CMOS recovery	30

This chapter contains the problem determination procedures for the SurePOS 500/600 and peripheral I/O devices.

A software error or a hardware failure can cause a problem with the system. The following topics contain problem analysis instructions to help you determine the cause of a problem and resolve it.

Start problem diagnosis here

If you are experiencing a problem with the system, start each service call by performing the appropriate task listed in Table 6.

Table 6. SurePOS 500/600 task information

Task	Go to
Start to diagnose a problem.	"Preliminary checklist" on page 22.
Look up an error code or beep code.	"POST error codes" on page 27 or "POST beep codes" on page 29.
Remove or replace a FRU.	Chapter 4, "Removing and replacing FRUs", on page 31.
Update the flash BIOS.	"Updating the flash BIOS" on page 157.
Run the Setup Utility.	"Using the Setup Utility" on page 158.
Use the Service Diskette.	"Using the Service Diskette" on page 165.
Look up a part number.	Appendix A, "SurePOS 500/600 Series parts catalog", on page 175.
Review service tips.	Appendix F, "SurePOS 500/600 Series tips", on page 223.

Preliminary checklist

When you power ON the SurePOS 500/600, it performs a power-on self-test (POST). The system indicates a successful POST with a single beep. If it displays an error message or beeps more than once, see either “POST error codes” on page 27 or “POST beep codes” on page 29. Otherwise, perform the following steps to diagnose the problem.

1. Ensure that all AC power is connected and observe all power lights to make sure that they are lit.
2. Ensure that all cables and I/O devices are connected correctly and securely.
3. Make sure that you correctly adjust the contrast settings and brightness settings, using the controls at the bottom right side of the display.
4. Record any error messages or symptoms for troubleshooting.

If you do not observe a specific error indication, continue problem resolution at “Troubleshooting” on page 23.

Notes:

1. For internal options and peripheral devices, you can use the Service Diskette to help resolve problems. See “Using the Service Diskette” on page 165 for further information.
2. Some devices that attach to the system have test instructions. Refer to those instructions when testing those devices.
3. When using application software, you may receive error messages that pertain to the software. Refer to the software manual for a description of those messages.

Troubleshooting

If the SurePOS 500/600 system fails and there is no error code or beep code, see Table 7 to find problem symptoms and take the related action.

Note: Corrupted CMOS may cause unpredictable problems. Before exchanging the system board in an attempt to fix a problem, go to “CMOS recovery” on page 30 and reset CMOS to see if corrupted CMOS is the source of the trouble.

Table 7. Symptoms and actions

If the problem is...	Here's what to do...
No power light on the operator display .	1. Ensure that the system unit is plugged into a working electrical outlet and replug the power cable at the power supply. 2. Verify the power cable is plugged into the system board. 3. Replace the power supply. See “Power supply – removing and replacing” on page 34. 4. Replace the system board. See “System board – removing and replacing” on page 91.
Operator display—exhibits: Blank screen No cursor displayed Screen is unreadable Other display problems.	1. Ensure that the operator display (LCD) cables are securely connected. 2. Check to see if the operator display (LCD) card is loose. 3. Adjust the contrast and brightness controls at the bottom right side of the display. 4. Run the operator display test using the Service Diskette. 5. Replace the LCD card. 6. Replace the display. See “Operator display (LCD) – removing and replacing” on page 88.
Cash drawer does not open when cash drawer key is turned to the open position.	1. Replace the keylock insert if the lock does not turn with the key. See “Removing and replacing the keylock insert” on page 116. 2. Gently pull the drawer open while holding the key turned to the open position to determine if the slide assembly is binding. Look for items that may cause binds, such as pens or paper clips. Replace the slide assembly if necessary. See “Removing and replacing a full-size slide assembly” on page 106 or “Removing and replacing the compact slide assembly” on page 109. 3. Replace the cam, pawl, and spring kit. See “Removing and replacing components of the latch and sensor assembly” on page 115. 4. Check for a bent actuator rod. Replace the actuator rod if necessary. See “Removing and replacing the keylock assembly” on page 113.

Table 7. Symptoms and actions (continued)

Cash drawer does not stay closed.	1. Make sure the keylock is not bound in the open position. Replace the keylock if necessary. See "Removing and replacing the keylock assembly" on page 113. 2. Replace the cam, pawl, and spring kit. See "Removing and replacing components of the latch and sensor assembly" on page 115. 3. Replace the latch and the sensor assembly card. See "Removing and replacing the latch and sensor assembly" on page 114. 4. Replace the cash drawer. See "Removing and replacing a full-size drawer" on page 105 or "Removing and replacing a compact cash drawer" on page 108. 5. Replace the system board. See "System board – removing and replacing" on page 91.
Cash drawer does not open or close smoothly, or appears to be binding.	1. Look for items that could cause binding. Pens or paper clips trapped between the drawer and cover or the drawer and base could cause binding. 2. Compact drawer only: Remove the drawer and the rollers at the rear of the drawer and at the front of the base. Replace the rollers if necessary. See "Removing and replacing the rollers" on page 110. 3. Determine if the slide assembly in the base is binding. Replace the slide assembly if necessary. See "Removing and replacing a full-size slide assembly" on page 106 or "Removing and replacing the compact slide assembly" on page 109.
Cash drawer not opening	1. Run Setup to make sure IBM cash drawer setting is enabled. 2. Run the cash drawer test using the Service Diskette. 3. Ensure that the cash drawer cable is securely connected. 4. Replace the cash drawer cable. 5. Replace the cash drawer latch assembly. See "Removing and replacing the latch and sensor assembly" on page 114.
Cash drawer does not open when performing store transactions or running cash drawer tests, but it opens when the cash drawer key is turned to the open position.	1. Replace the latch and the sensor assembly card. See "Removing and replacing the latch and sensor assembly" on page 114. 2. Replace the cash drawer cable. 3. Replace the system board. See "System board – removing and replacing" on page 91.
The status displayed by the cash drawer tests does not match the physical status of the cash drawer being tested. For example, the test indicates that cash drawer A IS CLOSED when cash drawer A is actually open.	1. Replace cable. 2. Replace the latch and the sensor assembly card. See "Removing and replacing the latch and sensor assembly" on page 114. 3. Replace the planar board. See "System board – removing and replacing" on page 91.

Table 7. Symptoms and actions (continued)

Magnetic stripe reader (MSR) not reading.	1. Check the three-track MSR dip switch settings for either RS-232 or keyboard interface. 2. Run Setup and check the setting in the MSR serial port. 3. Ensure that the MSR cable is securely connected. 4. Run the MSR test using the Service Diskette. 5. Replace the MSR. See "Magnetic stripe reader (MSR) – removing and replacing" on page 72.
Integrated character display not working.	1. Ensure that the character display cable is securely connected. 2. Run Setup and check the setting in the integrated character display Serial Port. 3. Run the integrated character display test using the Service Diskette. 4. Replace the customer display. See "Integrated character display – removing and replacing" on page 70.
Operator display backlight: dark, dim, or partially lit.	1. Adjust the contrast and brightness using the buttons located on the front of the display. 2. Ensure that the backlight cable is securely connected. 3. Reseat operator display card. 4. Replace operator display card. 5. Replace operator display, see "Operator display (LCD) – removing and replacing" on page 88.
Touch screen not working.	1. Run the touch screen test using the Service Diskette. 2. Relinearize the touch screen. 3. Ensure that the touch screen cable is securely plugged into its connector. 4. Reinstall touch driver. 5. Replace the touch screen. See "Touch screen – removing and replacing" on page 80. 6. Replace the system board. See "System board – removing and replacing" on page 91.
Touch screen not calibrated.	1. Recalibrate the touch screen. See "Calibrating the touch screen in Windows[®]" on page 216. 2. Replace the touch screen. See "Touch screen – removing and replacing" on page 80.
Presence sensor not working.	1. Run the presence sensor test using the Service Diskette. 2. Ensure that the presence sensor cable is securely connected. 3. Check calibration. See "Calibrating the presence sensor (Models 561 and 562)" on page 220. 4. Replace the presence sensor. See "Presence sensor – removing and replacing" on page 85.
Keyboard does not work or only some keys work.	1. Ensure that the keyboard cable is securely connected. 2. Move your fingers across the keys, making sure that no keys are stuck. 3. Ensure that you are on a screen that allows typing. Some screens do not allow you to type on them. 4. Replace the keyboard.

Table 7. Symptoms and actions (continued)

Compact ANPOS Keyboard problem solving.	1. See Chapter 7, "Keyboard— Removing and Replacing", on page 167 for CANPOS Keyboard problem solving.
Diskette drive does not work.	1. Check the diskette drive cable connections. 2. Run Setup Utility to make sure the diskette drive controller is enabled. 3. Verify the hardware by attempting to load the Service Diskette or a bootable diskette from the diskette drive. 4. If the drive will not boot to either diskette, replace the diskette drive and cable.
Audio is not working.	1. Check the speaker cable connection. See "Stereo-speaker kit – removing and replacing" on page 76. 2. Run Setup Utility to make sure the audio is enabled. 3. Run the Audio Test using the Service Diskette. 4. Replace speaker.

Notes:

1. Some devices that attach to the system have test instructions. Refer to those instructions when testing those devices.
2. Record any error messages or symptoms for future reference.
3. When using application programs, you may receive error messages that pertain to the application software. See the application program manual for a description of those messages.

Error codes

The SurePOS 500/600 may issue the messages or codes listed in this section.

POST error codes

POST error messages display during start-up if POST detects problems with the hardware or a change in the hardware configuration. POST error messages are 3-, 4-, 5-, 8-, or 12-character alphanumeric messages. Table 8 lists the error codes, the cause, and the recommended action.

Table 8. POST error codes

Code	Condition	Action
01xx	System errors.	Replace the system board.
02xx	Extended errors.	
0200	Hard disk drive failure or CompactFlash failure (Model 532 only).	1. Replace the hard disk drive or CompactFlash. 2. Replace the ribbon cable. 3. Replace the system board.
0210	Key is stuck.	1. Remove any objects lying on the keyboard. 2. Replace the keyboard.
0211	Keyboard error.	1. Replace the keyboard. 2. Replace the system board.
0212	Keyboard controller failed.	Replace the system board.
0220	Monitor type does not match CMOS.	Run Setup Utility.
0230	System RAM failed at offset xxxx.	1. Replace memory. 2. Replace the system board.
0231	Shadow RAM failed at offset xxxx.	1. Replace memory. 2. Replace the system board.
0232	Extended RAM failed at address line: xxxxxxxx.	1. Replace memory. 2. Replace the system board.
0250	System battery is dead.	1. Replace the battery and run Setup Utility. 2. Replace the system board.
0251	System CMOS checksum failed; default configuration used	Run Setup Utility.
0260	System timer error.	Replace the system board.
0270	Real-time clock error.	1. Run Setup Utility. 2. Replace the battery. 3. Replace the system board.
0271	Check date and time settings.	1. Run Setup Utility. 2. Replace the battery. 3. Replace the system board.
0280	Previous boot incomplete; default configuration used.	Run Setup Utility.

Table 8. POST error codes (continued)

Code	Condition	Action
02A0	Co-processor error.	1. Replace the processor. 2. Replace the system board.
02B0	Diskette drive error.	1. Replug cable. 2. Check for bad diskette. 3. Replace the diskette drive. 4. Replace the system board.
02B2	Incorrect diskette drive type.	Run Setup Utility.
02D0	System cache error; cache disabled.	1. Replace the processor. 2. Replace the system board.
02E0	I/O error.	Replace the system board.
02F5	DMA test failed.	Replace the system board.
02F6	Software NMI failed.	1. Power OFF and then ON. 2. Replace the system board.
02F7	Fail-safe timer NMI failed.	Replace the system board.
04xx	PnP ISA errors.	1. Run Setup Utility. 2. Replace the system board.
05xx	PCI errors.	1. Run Setup Utility. 2. Replace the system board.
06xx	Motherboard Configurable Devices (MCD) errors.	
0611	IDE configuration changed.	Run Setup Utility.
0612	IDE configuration error; device disabled.	1. Run Setup Utility. 2. Replace the hard disk drive. 3. Replace the system board.
0613	Serial port A configuration changed.	Run Setup Utility.
0614	Serial port A configuration error; device disabled.	1. Run Setup Utility. 2. Replace the system board.
0615	Serial port B configuration changed.	Run Setup Utility.
0616	Serial port B configuration error - device disabled.	1. Run Setup Utility. 2. Replace the system board.
0617	Diskette drive configuration changed.	Run Setup Utility.
0618	Diskette drive configuration error; device disabled.	1. Run Setup Utility. 2. Replace the system board.
0619	Parallel port configuration changed.	Run Setup Utility.
061A	Parallel port configuration error; device disabled.	1. Run Setup Utility. 2. Replace the system board.
07xx	USB errors.	Run Setup Utility.
8100	Memory decreased in size.	Run Setup Utility.

POST beep codes

A beep code is a series of tones in sets of two or three that sound if a POST error occurs. The beep pattern represents numeric values and provides further information about the location of a potential problem. Table 9 lists the error codes, the causes, and the recommended actions.

Table 9. POST beep codes

Code	Description	Action
1-3-1-1	DRAM refresh failed.	1. Remove and reinstall the DIMM. 2. Switch the DIMM to another socket. 3. Replace the DIMM. 4. Replace the system board.
1-3-1-3	Keyboard controller failed.	1. Try another PS/2 keyboard that is known to be good. 2. Replace the system board.
1-3-3-1	Autosize DRAM failed.	1. Remove and reinstall the DIMM. 2. Switch the DIMM to another socket. 3. Replace the DIMM. 4. Replace the system board.
1-3-4-1	RAM failed on address line xxxx.	1. Remove and reinstall the DIMM. 2. Switch the DIMM to another socket. 3. Replace the DIMM. 4. Replace the system board.
1-3-4-3	RAM failed on data bits xxxx of low byte of memory bus.	1. Remove and reinstall the DIMM. 2. Switch the DIMM to another socket. 3. Replace the DIMM. 4. Replace the system board.
2-2-3-1	Unexpected interrupts.	1. Remove any installed PC cards. 2. Replace the system board.
1 long, 2 short beeps	BIOS primary and secondary checksum failed.	1. Remove any installed PC cards. 2. Replace the system board.
2 short beeps before boot	POST did not complete successfully.	See "POST error codes" on page 27 for the error that is displayed and the action that should be taken.
1 long, then 1 short beep and system powers off	System processor is over temperature.	1. Check the power supply fan and the processor fan to ensure that they are operating. 2. Check the processor heat sink to make sure that it is installed correctly with wired clamp and contains thermal pad between the processor and the heat sink. 3. Replace processor. 4. Replace the system board.
1 short beep before boot	POST was successful.	No action required.

CMOS recovery

The SurePOS 500/600 uses 242 bytes of battery-backed-up complementary metal-oxide semiconductor (CMOS) memory to store system settings. If the CMOS memory becomes corrupted and the system does not boot, restore the factory default values by following the procedure described in “Restoring the default CMOS settings” on page 165.

Chapter 4. Removing and replacing FRUs

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This chapter contains the FRU removal and replacement procedures for all SurePOS 500/600 Series models, although some procedures are for features that are not available on all models. **Attention:** Before you perform any removal and replacement procedures, see the section titled “Safety and notice information” on page xiii.

The following removal and replacement procedures are described in this chapter:

Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Facing the rear of the system, remove the **base cover** by pressing in on latch **A**, if present, and lifting the rear of the cover up from the base. Some units have no latch and require only lifting the cover.
3. While rotating the rear of the cover upward, slide the cover toward the rear until it is free.

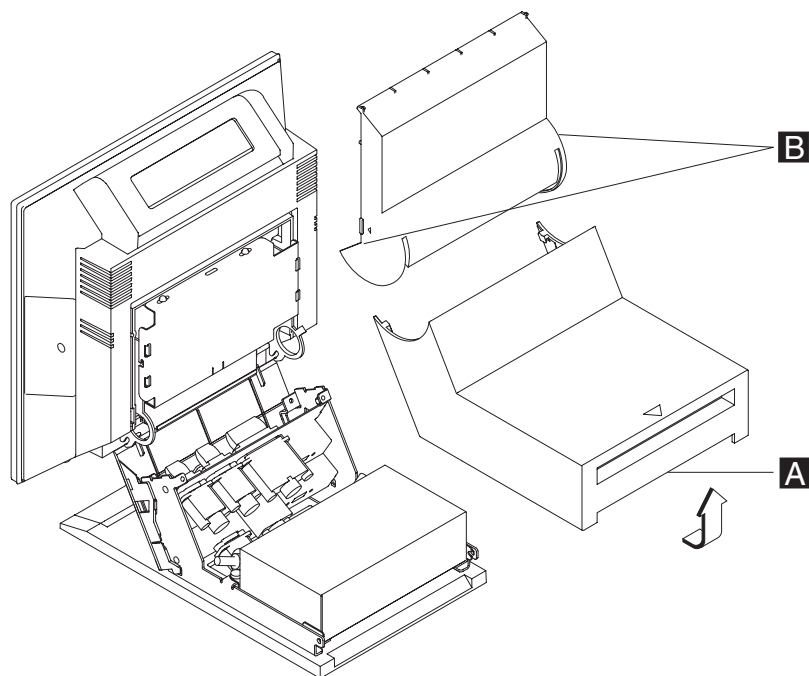


Figure 14. Removing the base and display covers

4. To remove the **rear cover**, press in on tabs **B** on each side of the cover and slide the cover down and to the rear.

Power supply – removing and replacing

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply. Figure 16 shows the location of the power supply.
3. Unplug the ac power cord **A** to the power supply, as shown in Figure 15.
4. Disconnect the power connector cable **B** to the power supply by pressing the tab on the power connector and pull.

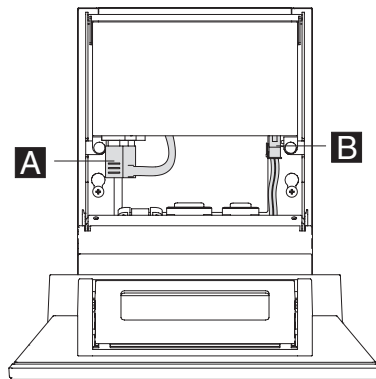


Figure 15. Location of power supply cords (top view of system)

5. Loosen the two captive power supply thumb screws **A** as show in Figure 16.

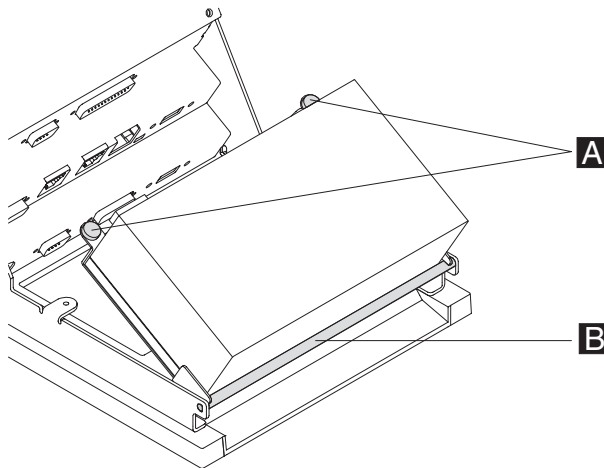
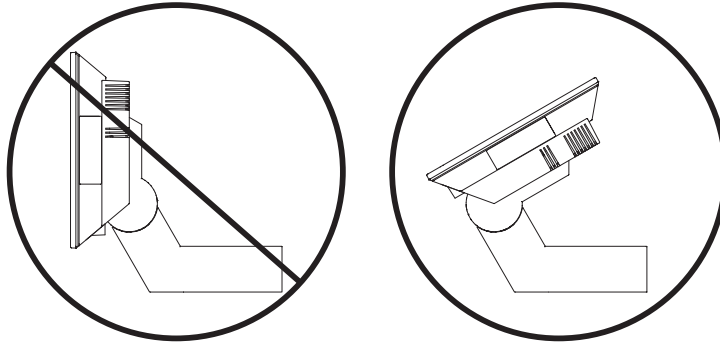


Figure 16. Removing the power supply

Attention: The SurePOS 500/600 is top-heavy and may **fall forward** if it is not attached to a base foot, countertop, or integration tray. To prevent this, tilt the operator display to its rearmost position.



6. Rotate the power supply back and lift it out.
7. To replace the power supply, reverse this procedure.

Note: When replacing the power supply, make sure that the U-shaped ends of the power supply bracket are on the metal bar **B** in Figure 16 on page 34

Connecting the cables and using cable-ties for counter mount system

To access the front connector panel (under the front edge of the display), tilt the display to its rearmost position. To access the rear connector panel, tilt the display to its vertical position, and remove the base cover using the procedure at “Base cover and rear cover for the SurePOS 500/600 Series— removing and replacing” on page 32.

Note: For connecting the cables and using cable-ties for the SurePOS 500/600 with Wall Mount feature, see “Connector panel (tailgate) – removal and replacing” on page 147.

Connecting cables to the front panel

This section explains how to connect cables to the front connector panel. The following figures show the connector locations and description.

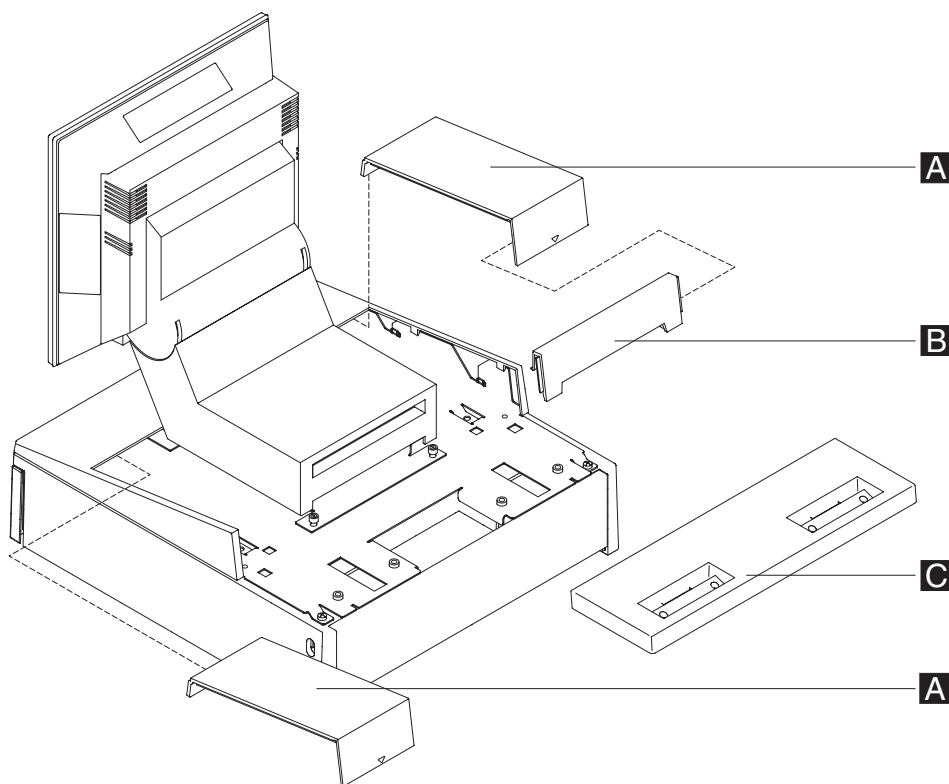


Figure 17. Front connector panel callouts

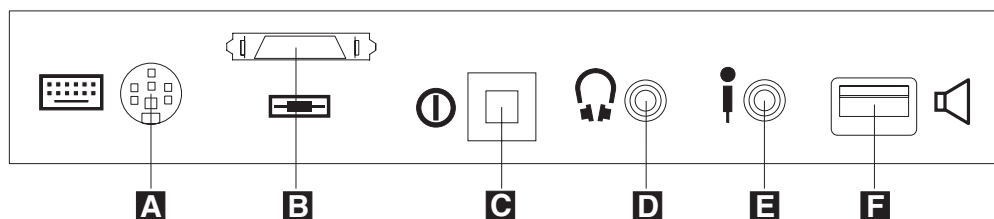


Figure 18. Front connector panel description for a Model 561

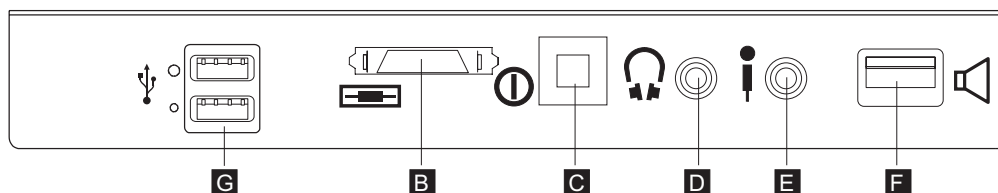


Figure 19. Front connector panel description for a Model 562

- | | |
|---|---|
| A Keyboard/mouse connector (Models xx1 only) | D Headphone connector (Models 551, 561, 621, and 651 only) |
| B Diskette drive connector | E Microphone connector (Models 551, 561, 621, and 651 only) |
| C Power switch | F Speaker kit connector (Models 551, 561, 621, and 651 only) |

1. Switch OFF the power to the SurePOS 500/600.
2. Connect the cables for the keyboard/mouse (A "Y" cable is needed to connect a mouse), diskette drive, microphone, headphone, and speaker kit as shown in Figure 18 on page 36.

Connecting cables to the rear connector panel

This section explains how to connect cables to the rear connector panel (shown in Figure 20 and Figure 21 on page 38), using cable-ties. Connect the cables in the lowest row first, then work upwards connecting any additional cables.

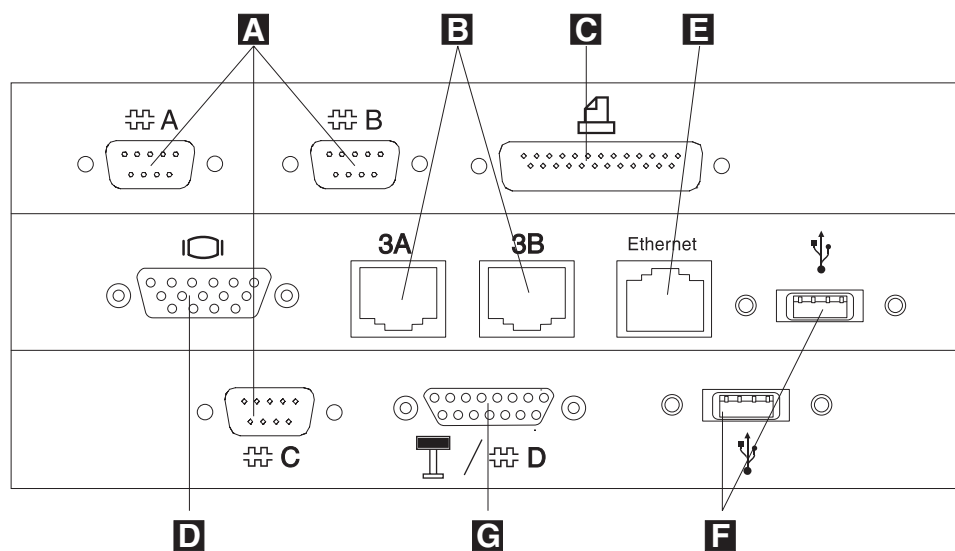


Figure 20. Rear Connector Panel, Models xx1

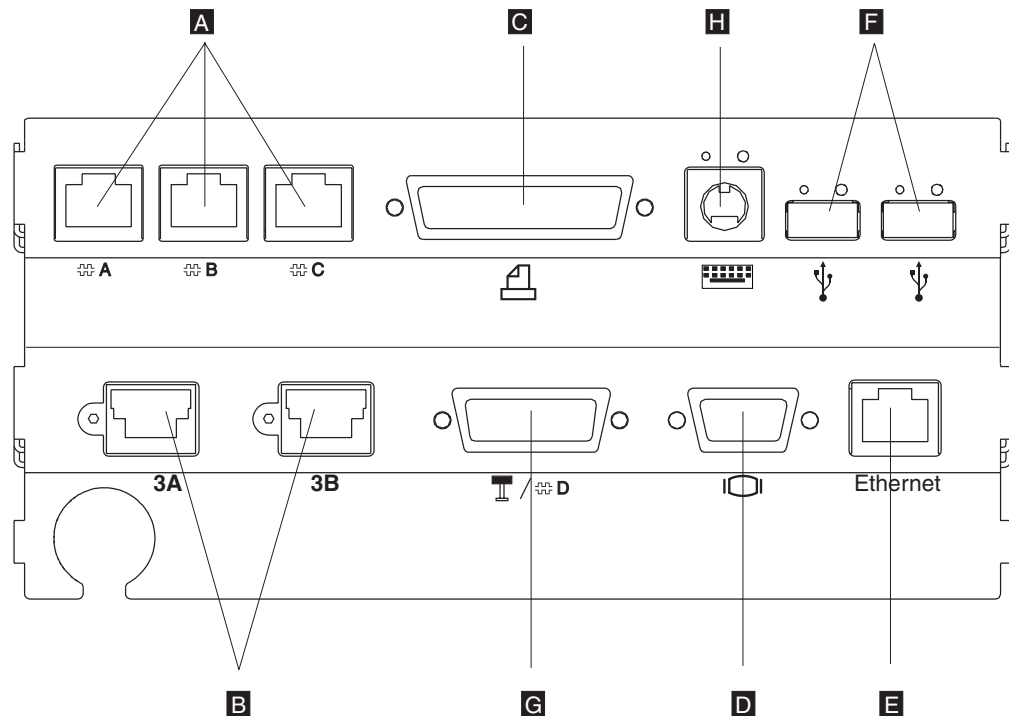


Figure 21. Rear Connector Panel, Models xx2

A	Serial connectors (3)	E	Ethernet connector
B	Cash drawer connectors (2)	F	USB connectors (2)
C	Parallel connector	G	15-pin serial connector (distributed character display or APA VFD)
D	External video connector	H	Keyboard/mouse cable (Models xx2 only)

1. Switch OFF the power at the system. Unplug the power cord from both the system and the external power source.
2. Remove the power supply for easier access to the tailgate connector panel. See "Power supply – removing and replacing" on page 34.
3. Route the cables according to your configuration.
4. Connect the cables on the bottom row first, then work upward connecting any additional cables as shown in as shown in Figure 20 on page 37.
5. Secure the cables, especially the USB cables to the mounting plate with tie-warps, see Figure 22 on page 39 for an example. Cut the end of the tie-wraps flush so there are no jagged edges sticking out.

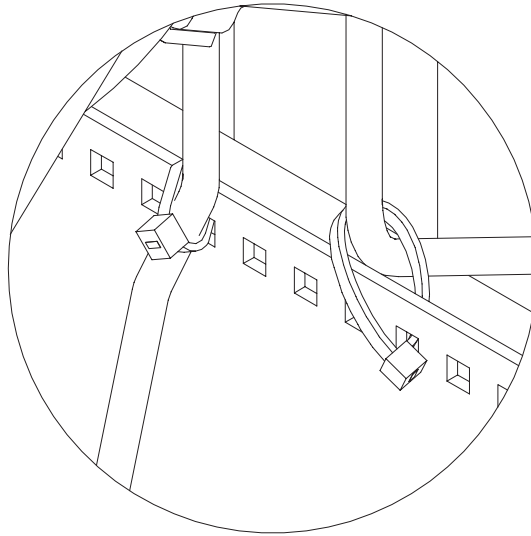


Figure 22. Exploded view of tie-wraps with ends cut flush.

6. For cables routed under the counter, install a cable-tie around all rear connector panel cables exiting through the hole to form one group. Allow sufficient length for cleaning and servicing.
7. Route the ac power cord under the power supply support bar.
8. Reinstall the power supply.

Note: When replacing the power supply, make sure that the U-shaped ends of the power supply bracket are on the metal bar **B** in Figure 16 on page 34. Tighten the two captive power supply thumb screws.

9. Connect the power connector cable **B** to the power supply as shown in Figure 23.
10. Plug the ac power cord **A** to the power supply.

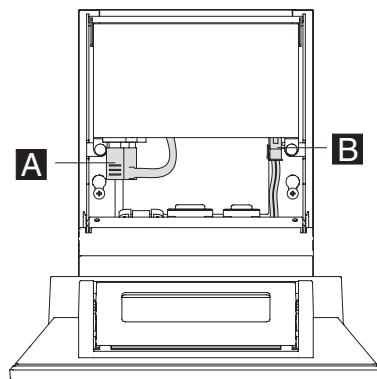


Figure 23. Location of power supply cords (top view of system)

Mounting options – removing and replacing

The SurePOS 500/600 can be mounted in a variety of configurations. See the appropriate mounting configuration for removal and replacement procedure of its components:

- For a **Free-standing** SurePOS 500/600, the base foot that comes attached from the factory and the base foot mounting plate can be attached to a countertop with screws, see “Free-standing SurePOS 500/600 – removing and replacing”.
- Mounted to a **non-keyboard integration tray** that can be attached to a countertop, full-size cash drawer or a compact cash drawer, see “Non-keyboard integration tray – removing and replacing” on page 42.
- Mounted to a **keyboard integration tray** that can be attached to a countertop, a full-size cash drawer or a compact cash drawer, see “Keyboard integration tray mounting for countertop and cash drawer” on page 52.

Free-standing SurePOS 500/600 – removing and replacing

Figure 24 is an example of a freestanding SurePOS 500/600.

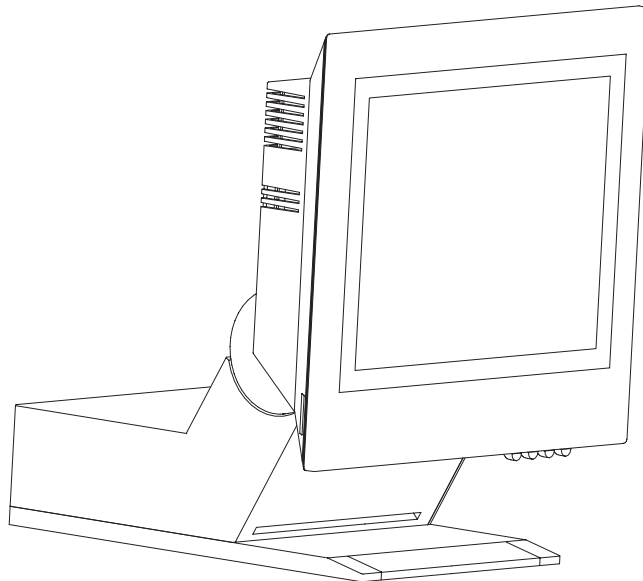
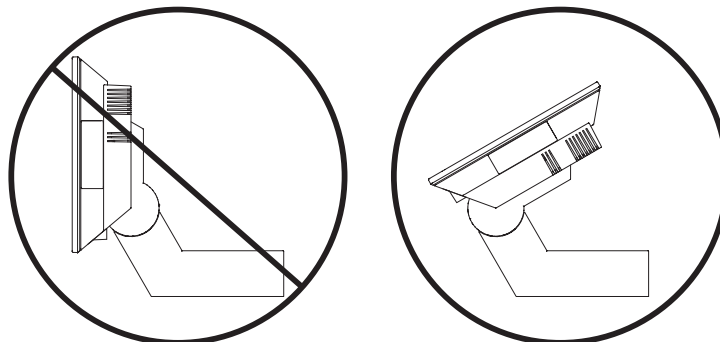


Figure 24. Free-standing SurePOS 500/600

Attention: The SurePOS 500/600 is top-heavy and may **fall forward** if it is not attached to a base foot, countertop, or integration tray. To help prevent this, tilt the operator display to its rearmost position.



1. Switch OFF the power to the SurePOS 500/600. Unplug the system power cord from the external power source.
2. Remove the base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32.
3. Remove the power supply as described at “Power supply – removing and replacing” on page 34.
4. Unplug the peripheral cables from the front and rear connector panels.
5. Remove the screws (4) securing the system base to the foot, and lift system base off of the base system.

To replace a free standing system, reverse this procedure.

Note: Secure the cables, especially the USB cables to the mounting plate with tie-warps, see Figure 135 on page 153 for an example. Cut the end of the tie-wraps flush so there are no jagged edges sticking out as shown in

Non-keyboard integration tray – removing and replacing

The removal and replacement procedures for removing components on a non-keyboard integration tray are different for the countertop and cash drawer. Go to the appropriate procedure for your non-keyboard integration tray configuration:

- For **countertop systems with a non-keyboard integration tray**, go to “Countertop non-keyboard integration tray systems – removing and replacing”.
- For **cash drawer systems with a non-keyboard integration tray**, go to “Non-keyboard integration tray cash drawer – removing and replacing” on page 47.

Countertop non-keyboard integration tray systems – removing and replacing

Figure 25 is an example of a SurePOS 500/600 mounted on a countertop with a non-keyboard integration tray.

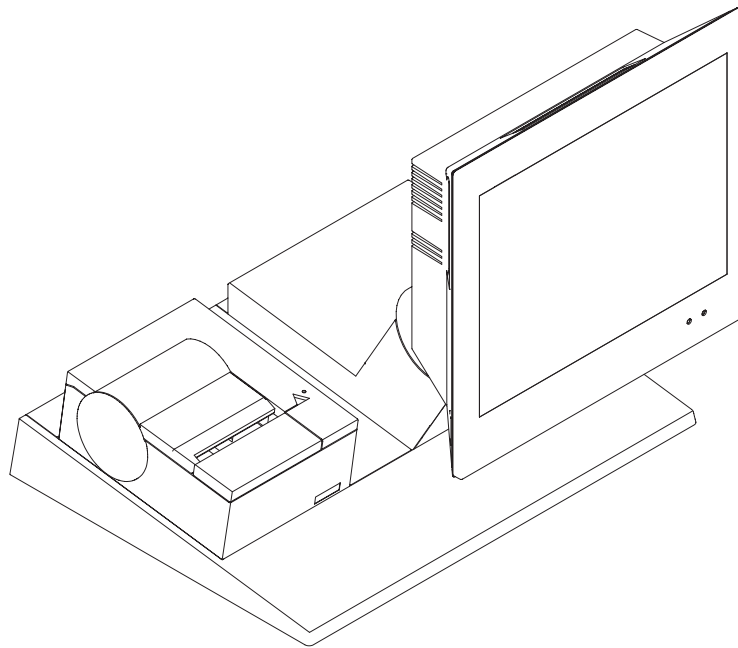
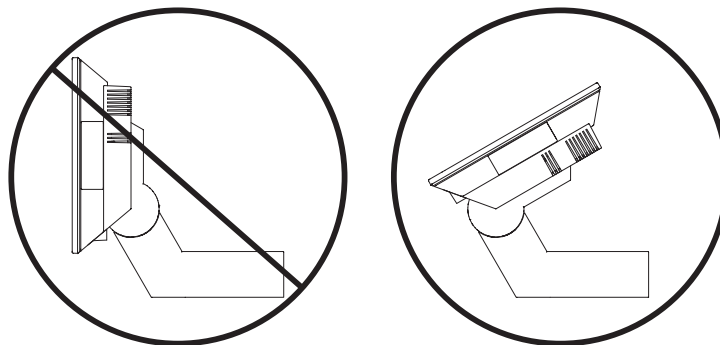


Figure 25. Countertop mount on a non-keyboard integration tray for the SurePOS 500/600

Attention: The SurePOS 500/600 Series is top-heavy and may **fall forward** if it is not attached to a base foot, countertop, or integration tray. To help prevent this, tilt the operator display to its rearmost position.



1. Switch OFF the power to the SurePOS 500/600. Unplug the system power cord from the external power source.

2. Remove the base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series— removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
3. Remove the power supply as described at “Power supply – removing and replacing” on page 34.
4. If the SurePOS 500/600 is attached to a countertop by means of an integration tray, go to step 5. If the system is mounted directly on a countertop using the base foot of the system unit:
 - a. Unplug the peripheral cables from the front and rear connector panels.
 - b. If you are removing the system completely, remove the screws (2) **A** securing the base foot to the countertop.

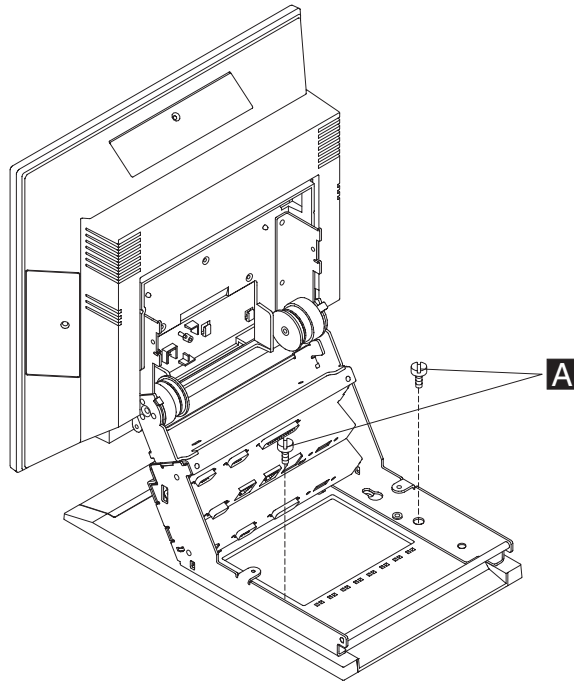


Figure 26. Removing the base foot from the SurePOS 500/600

5. If the system is attached to a countertop by means of an integration tray:
 - a. Remove the vertical rear covers **G** behind the system and remove the narrow filler panel **F** between the system and printer as shown in Figure 27.

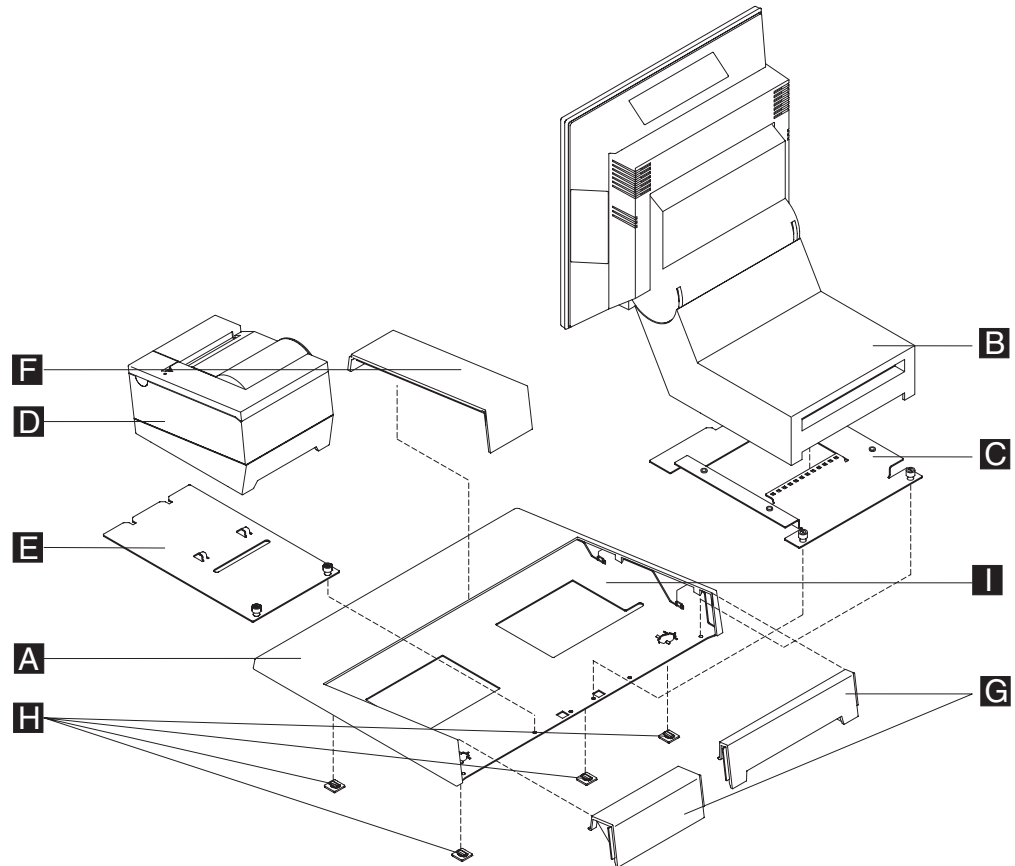


Figure 27. Countertop non-keyboard integration tray

- b. Unplug the peripheral cables from the front and rear connector panels.
- c. Remove the thumbscrews (2) securing the system adapter plate **C** to the integration tray **I**, slide the system and adapter plate to the rear as a unit to free the plate from the mounting tabs, and lift off the system.
- d. Remove the system from the adapter plate (4 screws).

To replace a system on a countertop or integration tray, reverse this procedure.

Note: Secure the cables, especially the USB cables to the mounting plate with tie-warps, see Figure 135 on page 153 for an example. Cut the end of the tie-wraps flush so there are no jagged edges sticking out.

6. The installation of the filler panels is done after all the cables have been routed to your system. To install the integration tray filler panels, see Figure 28. Note that filler panel **B** locks filler panels **A** onto the tray. The installation of the filler panels is done after all the cables have been routed to your system.
 - a. Install the outer ends of the filler panels **A** onto the integration tray. Notice that the printer filler panel, shown on the right, is narrower than the system filler panel. Also, the system filler panel has a slot underneath to allow cables to be routed out the back.
 - b. After installing the outer ends of filler panels **A** into the integration tray, use the narrow filler panel **B** to lock the filler panels together between the system and the printer.

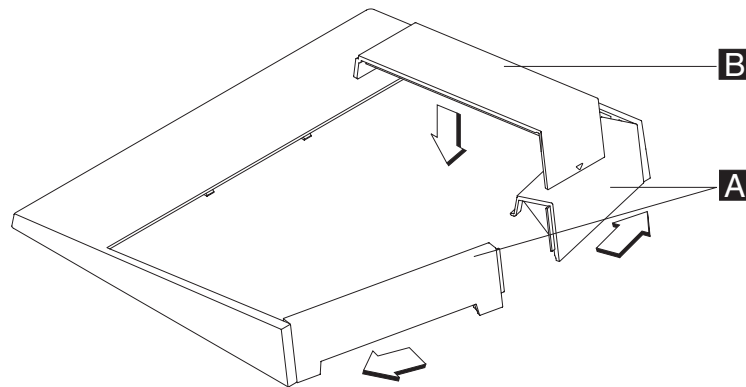
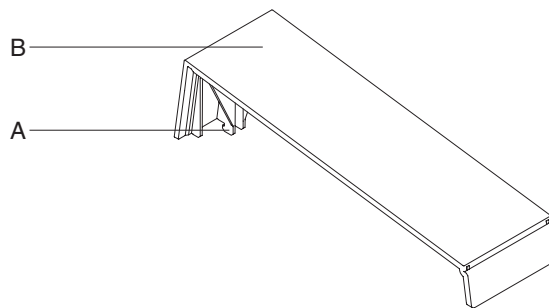


Figure 28. Connecting filler panels

Note: The hook **A** on the narrow filler panel **B** locks onto the integration tray.



Note: Depending on the configuration used, there may be unused filler panels.

7. Plug the system and printer ac power cords into an ac outlet.
8. After your installation is complete, press the printer power switch under the printer cover to power on the printer.

9. Switch ON the power to your a SurePOS 500/600 and verify that the system is operating correctly by checking the indicator lights (LEDs) on the front of the touch screen.

Status/Power Indicator

On: Logic working correctly. Source ac power present and within tolerance.

Off: System board defective or power is off

Blinking: Logic malfunction or system in suspend mode

HDD Indicator

On: HDD is reading or writing

Off: No HDD activity

Blinking: HDD is reading or writing

As an example, Figure 29 shows the front indicators of the SurePOS 500/600 Model 521 display. Looking at the exploded view, the symbols from left to right are contrast, brightness, status/power and hard disk drive indicators.

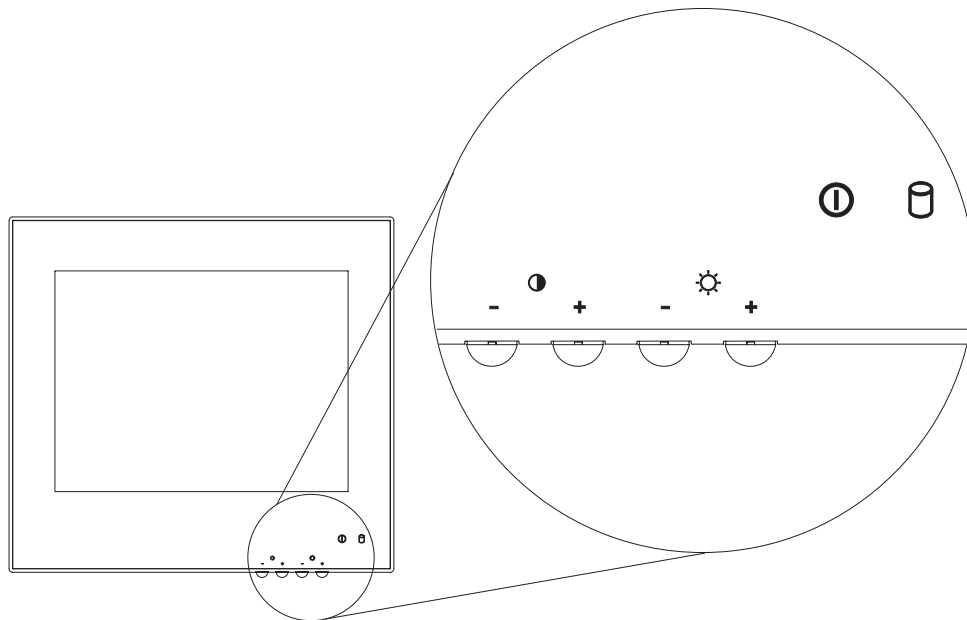


Figure 29. Locations of front panel display indicators

Note: Models 541, 542, 561, and 562 do not have the contrast buttons.

Non-keyboard integration tray cash drawer – removing and replacing

Figure 30 is an example of a SurePOS 500/600 mounted on a cash drawer with a non-keyboard integration tray.

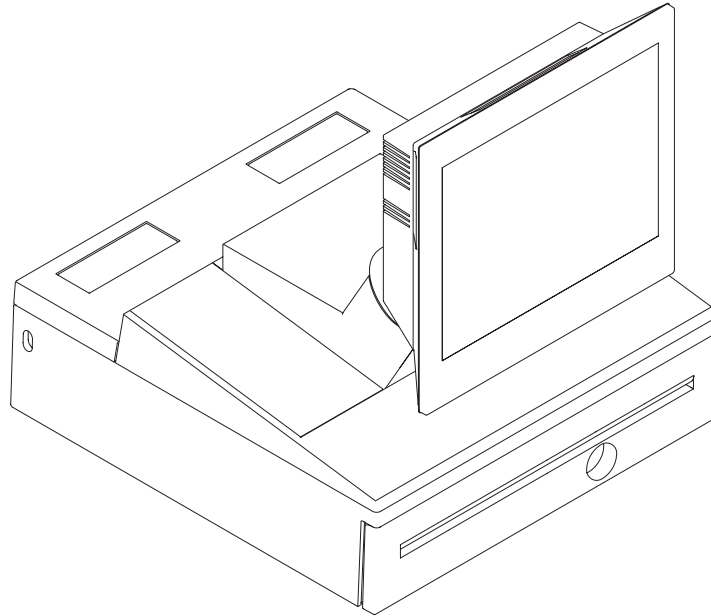
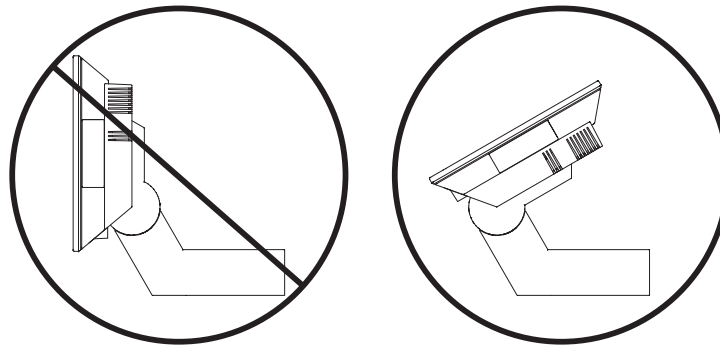


Figure 30. Cash drawer mounted with a non-keyboard integration tray for the SurePOS 500/600

Attention: The SurePOS 500/600 Series is top-heavy and may **fall forward** if it is not attached to a base foot, countertop, or integration tray. To help prevent this, tilt the operator display to its rearmost position.



The SurePOS 500/600 Series mounts to a cash drawer by means of an adapter plate, which attaches to an integration tray secured to the cash drawer.

1. Switch OFF the power to the SurePOS 500/600. Unplug the system power cord from the external power source.
2. Remove the system base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
3. Remove the power supply as described at “Power supply – removing and replacing” on page 34.
4. Open the cash-drawer rear cover by pushing in the two buttons located at the rear sides of the cash drawer.

5. If a printer is mounted on the integration tray along with the SurePOS 500/600, go to step 6.

If the system is the only component on the integration tray:

- a. Remove the rear modesty cover **C** as shown in Figure 31.

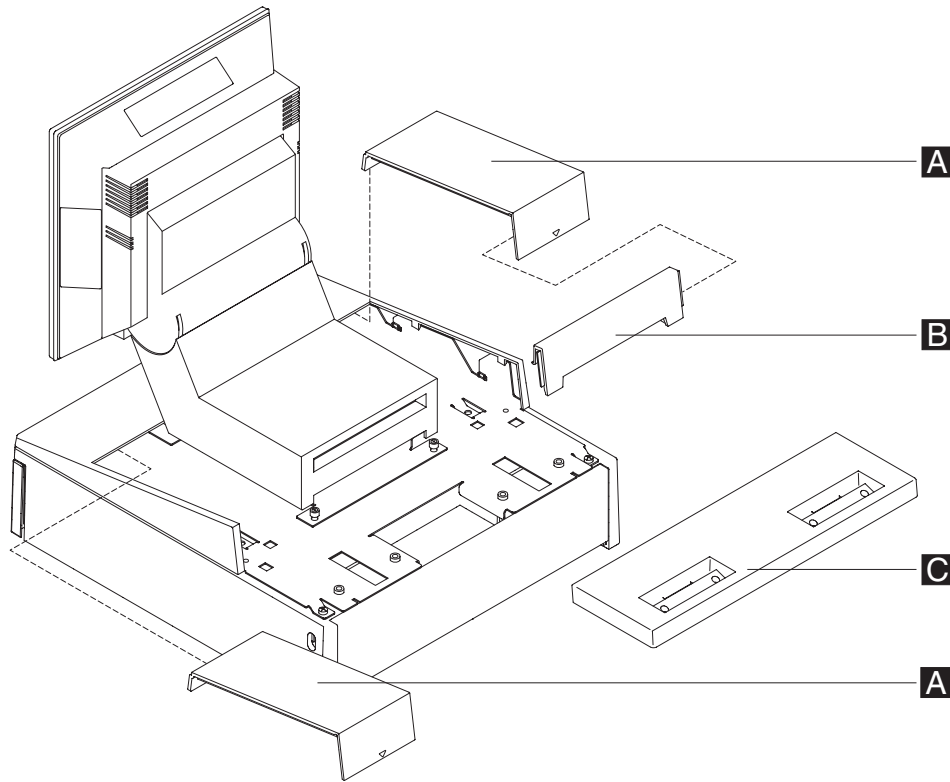


Figure 31. Removing filler panels on cash drawer integration tray

- b. Remove the vertical rear cover **B** and the two wide filler panels **A** at the sides of the system.
- c. Disconnect the peripheral cables from the front and rear connector panels, and unplug the line cord from the power supply.
- d. Remove the thumbscrews (2) securing the system adapter plate (**B** in Figure 32 on page 49) to the integration tray. Slide the system and adapter plate to the rear as a unit to free the plate from the mounting tabs. Remove the SurePOS 500/600.

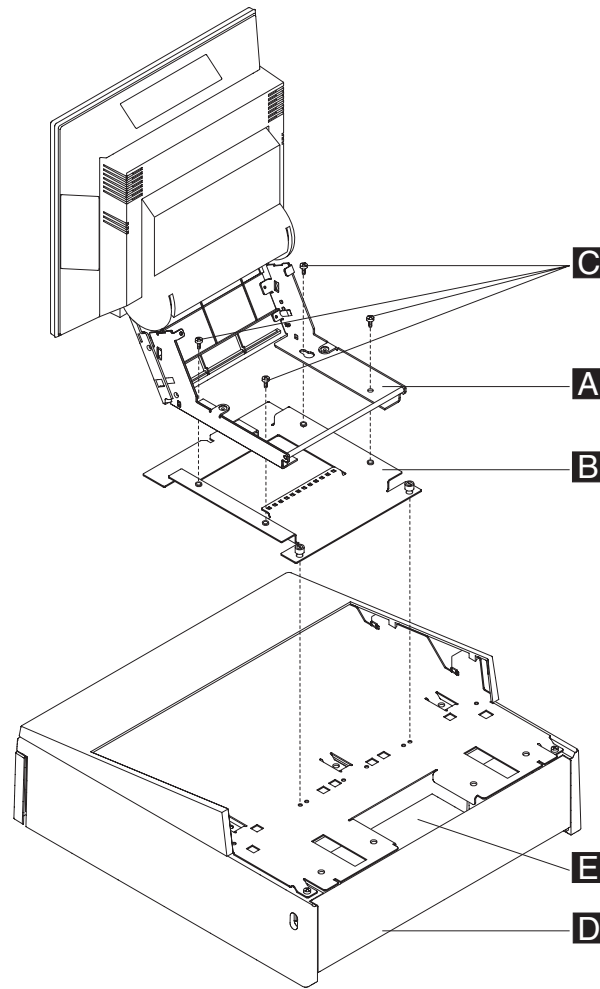


Figure 32. Attaching system to center of cash drawer integration tray

- e. Remove the SurePOS 500/600 from the adapter plate (4 screws).

To replace a system on a cash drawer integration tray, reverse this procedure.

Note: Secure the cables, especially the USB cables to the mounting plate with tie-warps, see Figure 135 on page 153 for an example. Cut the end of the tie-wraps flush so there are no jagged edges sticking out.

6. If a printer is also mounted on the integration tray:
 - a. Remove the rear modesty cover **C** as shown in Figure 33 (together with the distributed character display **D**, if one is installed) and set it aside. It is not necessary to disconnect the cable from the display.

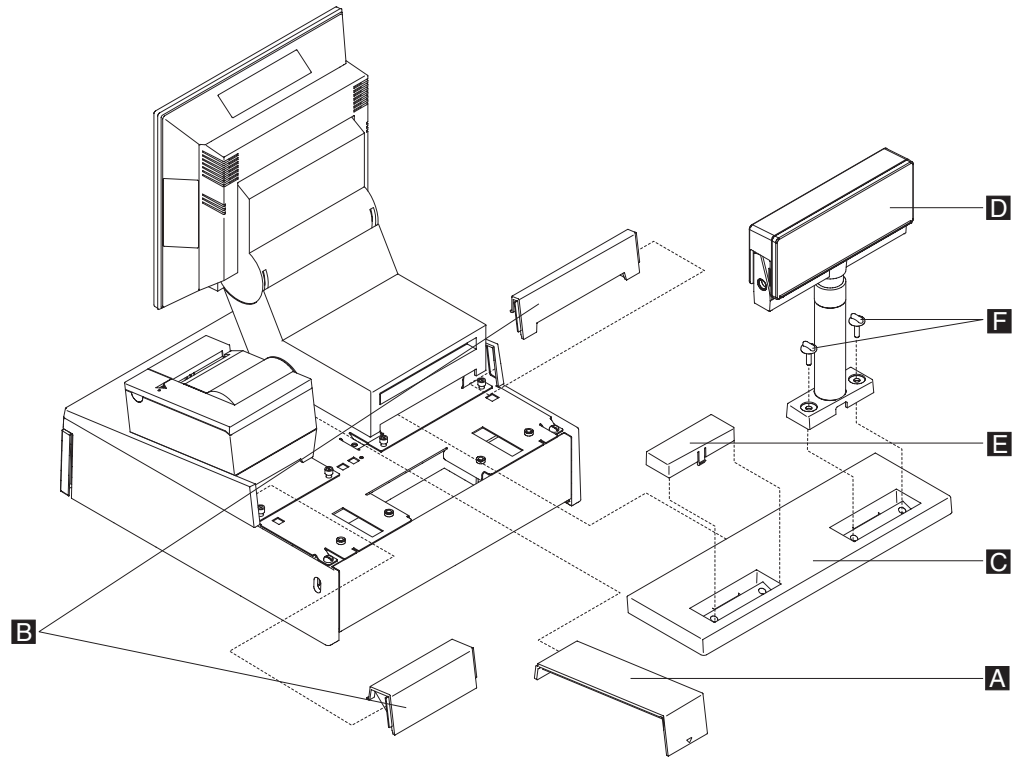


Figure 33. Removing rear modesty cover and distributed character display

- b. Remove the vertical covers **B** behind the system and printer (if installed), and the narrow filler panel **A** between the system and the printer.
 - c. Unplug the peripheral cables from the front and rear connector panels and unplug the line cord from the power supply.

- d. Remove the thumbscrews (2) securing the SurePOS 500/600 adapter plate **A** to the integration tray, as shown in Figure 34. Then slide the system and adapter plate to the rear as a unit to free the plate from the mounting tabs. Remove the SurePOS 500/600.

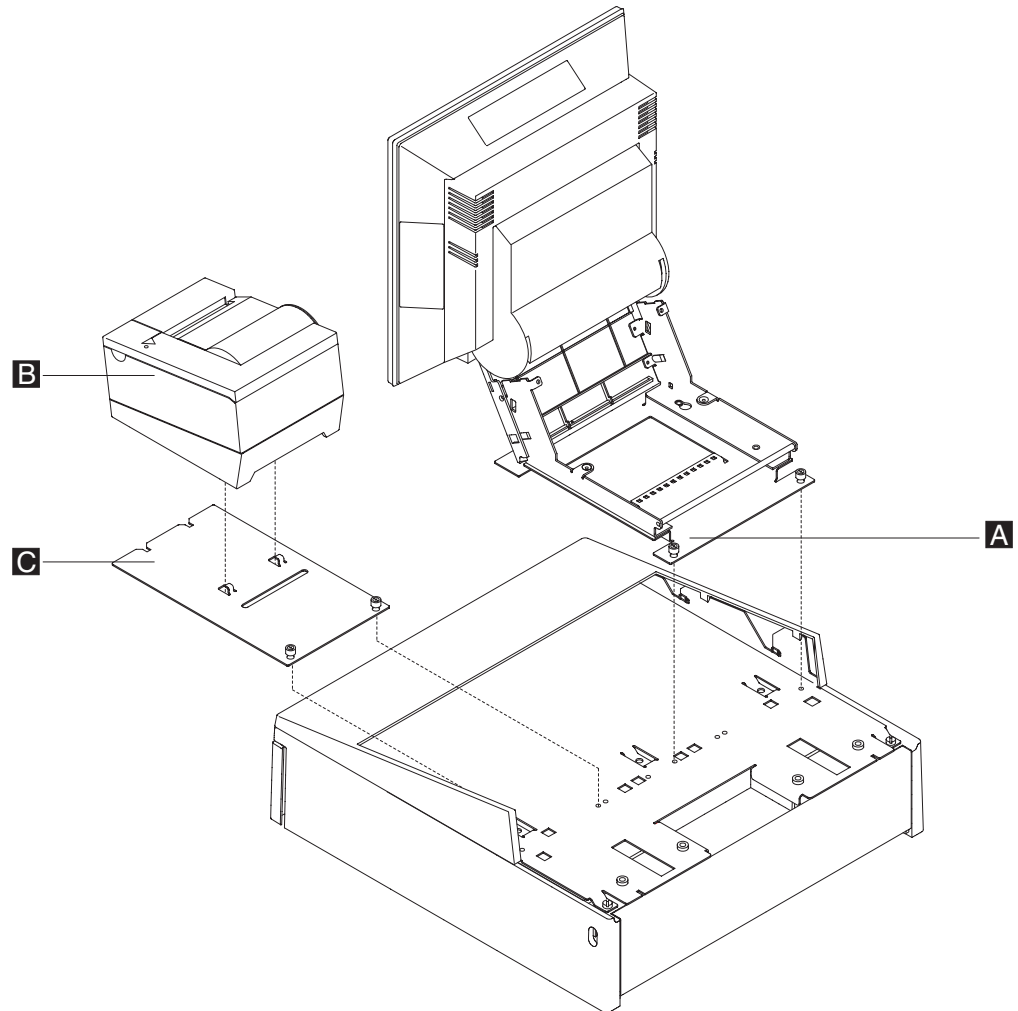


Figure 34. Detaching system from cash drawer integration tray

- e. Remove printer **B** from the printer base mounting plate **C** by sliding it off the two mounting plate tabs.

To replace a system on a cash drawer non-keyboard integration tray, reverse this procedure.

Keyboard integration tray mounting for countertop and cash drawer

The removal and replacement procedures for removing components on a full-size keyboard integration tray are different than the compact-size keyboard integration tray. Go to the appropriate procedure for your configuration:

- For the **full-size keyboard integration tray for countertop and cash drawer**, go to “Full-size keyboard integration tray mounting for countertop and cash drawer”.
- For the **compact-size keyboard integration tray for the cash drawer**, go to “Compact-size keyboard integration tray mounting for the cash drawer” on page 62.

The full-size keyboard-integration tray can be used as a free-standing unit, secured to a countertop using mounting screws or mounted to a cash drawer. The SurePOS 500/600 can be mounted with or without the 4610 SureMark printer using the full-size keyboard-integration tray. The compact-size keyboard-integration tray can only be mounted on a compact-size cash drawer without a printer.

Full-size keyboard integration tray mounting for countertop and cash drawer

Figure 35 shows a full-size keyboard integration tray mounted on a cash drawer with optional devices, such as the 4610 SureMark printer, distributed character graphic display and the SurePoint Solution (Machine Type: 4820, Models 4FT or 4FD) installed.

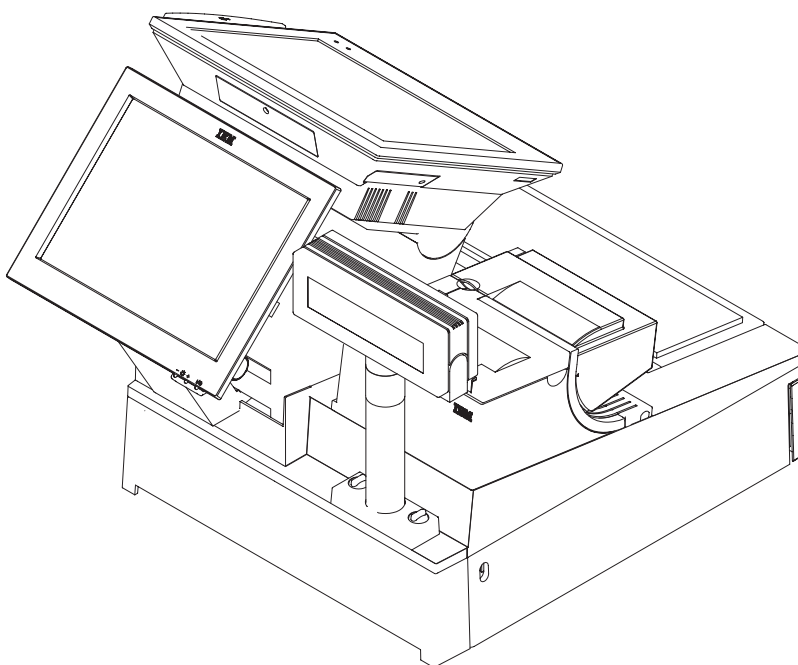


Figure 35. Full-size keyboard integration tray mounted on a cash drawer

Devices, such as the printer, distributed character display, SurePoint Solution (Machine Type: 4820, Models 4FT and 4FD), and keyboard are removed and mounted the same way –when the full-size keyboard-integration tray is used for a countertop or cash drawer mount. Therefore, the instructions for the countertop and cash drawer mount have been combined.

The following procedures will show you how to remove the different devices on the full-size keyboard-integration tray:

1. Prepare the SurePOS 500/600 for disassembly by performing the necessary steps for the devices that are being removed:
 - a. Switch OFF the power to the SurePOS 500/600. Unplug the system power cord from the external power source.
 - b. Remove the SurePOS 500/600 base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series— removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
 - c. Remove the power supply as described at “Power supply – removing and replacing” on page 34.
 - d. Remove the cash-drawer rear cover. Push in the two buttons located at the rear sides of the cash drawer and then pull the cash-drawer rear cover back and off.

2. To remove the **distributed character display or APA display**, perform the following steps:
 - a. Unplug the distributed character display cable from the SurePOS 500/600 rear connector panel, as show in Figure 20 on page 37.
 - b. Unroute the distributed character display cable **F** to enable the distributed character display to be removed, as show in Figure 36.

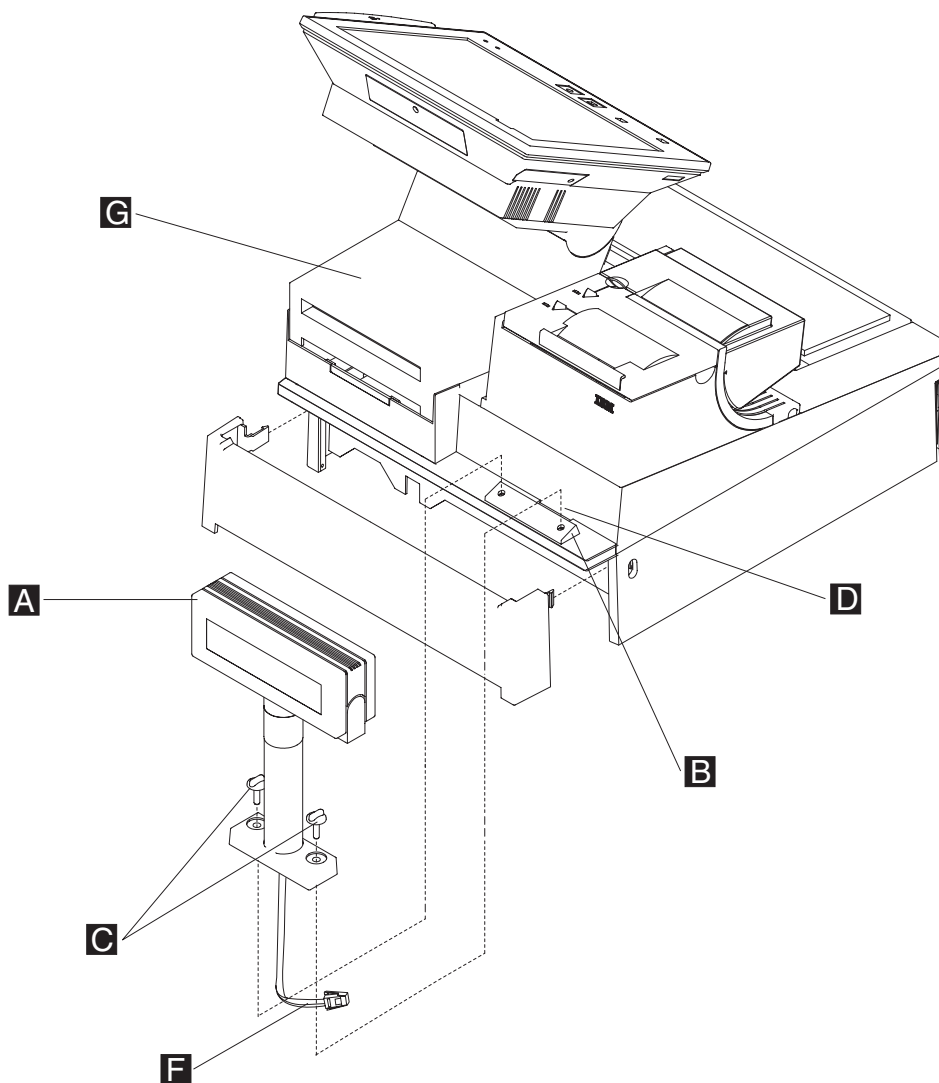


Figure 36. Remove the distributed character display from a full-size integration tray

- c. Remove the distributed character display **A** by removing the two thumbscrews **C** from mounting post **B**. Lift up on the display and pull cable **F** up through slot **D**.
- d. For information on disassembling the distributed character display or APA, go to “Distributed character display or APA display– disassembling” on page 118.

3. To remove the **keyboard**, perform the following steps:

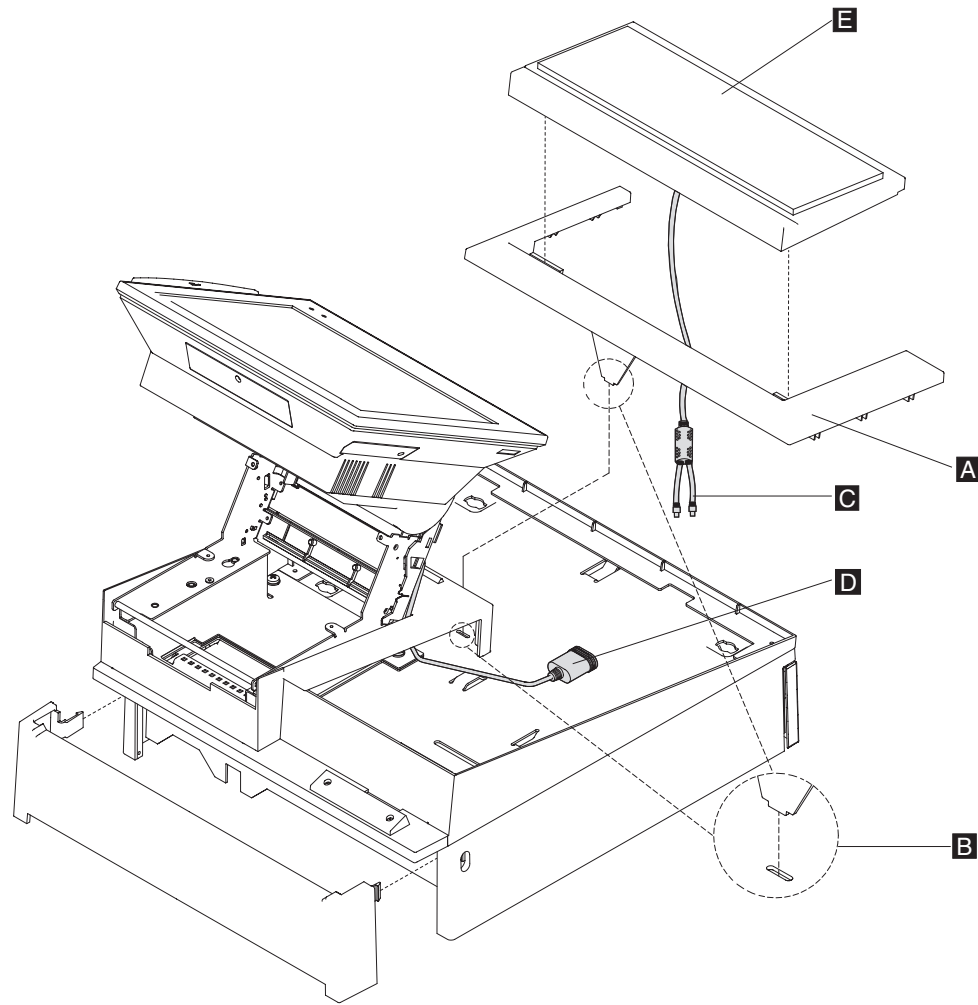


Figure 37. Removing the keyboard onto the integration tray

- a. Remove the keyboard **E** from the keyboard integration tray by lifting the keyboard up and off the keyboard integration tray.
- b. Remove the keyboard filler panel **A**. For reassembling, observe that the keyboard filler panel is inserted into the slot on integration tray, as show in exploded view **B**.
- c. Detach the keyboard cable **C** from the Y-cable **D**.

4. To remove the **keyboard Y-cable**, perform the following steps:
 - a. Remove filler panel **C** by lifting the filler panel post up and off of slot **D**, as shown in the exploded view in Figure 38. **When reinstalling the Y-cable, make sure that the Y-cable is routed to the left of filler panel post **D**.**

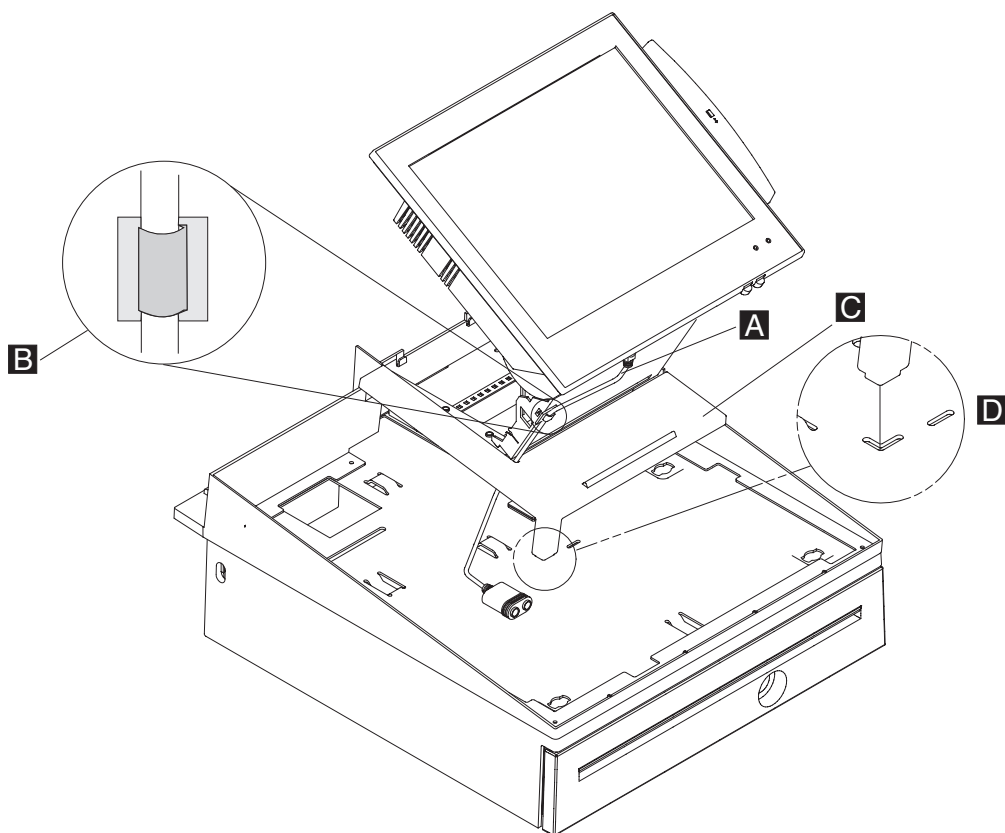


Figure 38. Removing the keyboard Y-cable

- b. Disconnect the Y-cable **A** from the keyboard/mouse connector located on the front-underside of the SurePOS 500/600.
 - c. Remove the Y-cable from the self-adhesive cable clamp **B**. Remove the Y-cable.

5. To remove the **4610 SureMark printer** when installed on a full-size keyboard integration tray, perform the following steps:

Note: See the *4610 SureMark Point-of-Sale Printers User's Guide* for detailed information about printer switch settings and cabling.

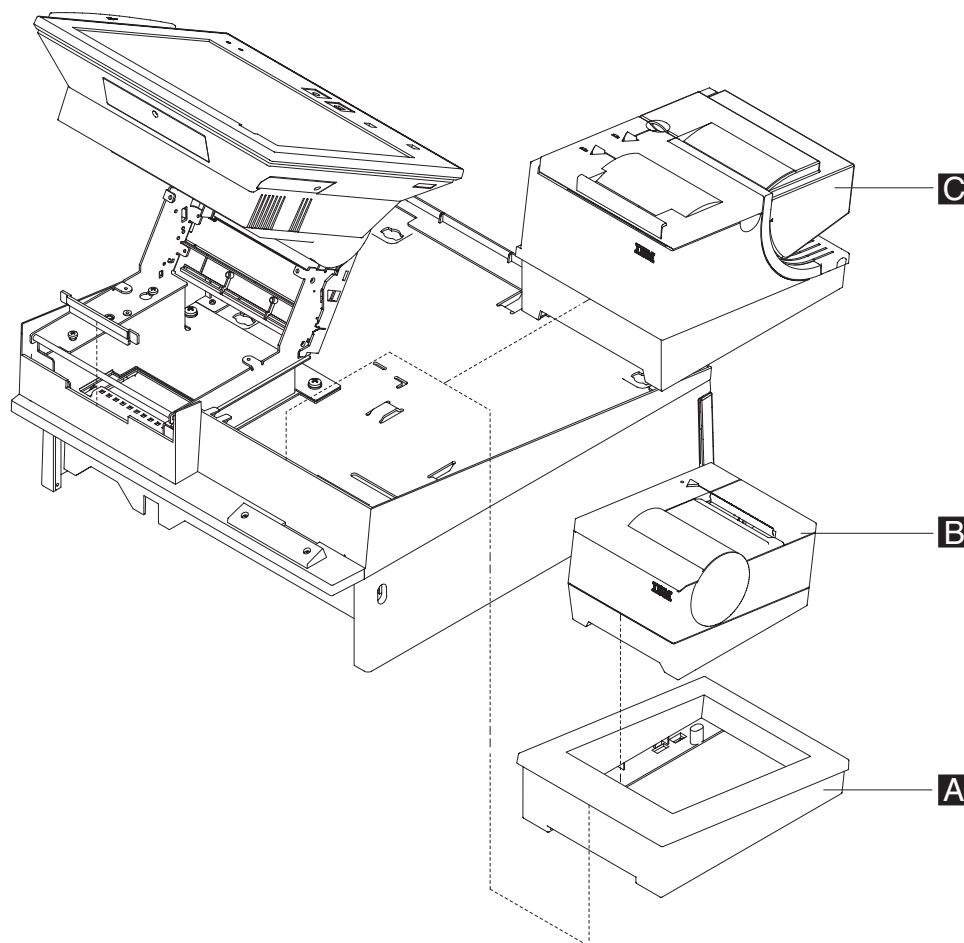


Figure 39. Removing the 4610 printer from the full-size keyboard integration tray

Table 10. 4610 SureMark printer on a full-size keyboard integration tray legend

A Printer stand for the 4610 Models TF6 and TF7 printers	C 4610 Models TG3, TG4 and TG5 printers
B 4610 Models TF6 and TF7 printers (small footprint)	

- a. Unplug the 4610 SureMark printer cable from the SurePOS 500/600 rear connector panel, as show in Figure 20 on page 37.
- b. For the **4610 SureMark Models TG3, TG4 and TG5 printers** **C**, lift the printer up and off the keyboard integration tray, as show in Figure 39.
- c. For the **4610 SureMark TF6 and TF7 printers** **B**, lift the printer up and off plastic printer base **A** on the keyboard integration tray.
- d. Remove the plastic printer base **A**.
- e. To reinstall the 4610 printer, go to “4610 SureMark printer installation on a keyboard integration tray” on page 126.

6. Perform the following steps to remove a **SurePoint Solution (Machine Type: 4820, Models 4FT or 4FD)** from a full-size keyboard integration tray (mounted on a countertop or a cash drawer) or on a compact keyboard integration tray mounted to a cash drawer. The following procedure shows the 4820 being mounted to a full-size cash drawer:

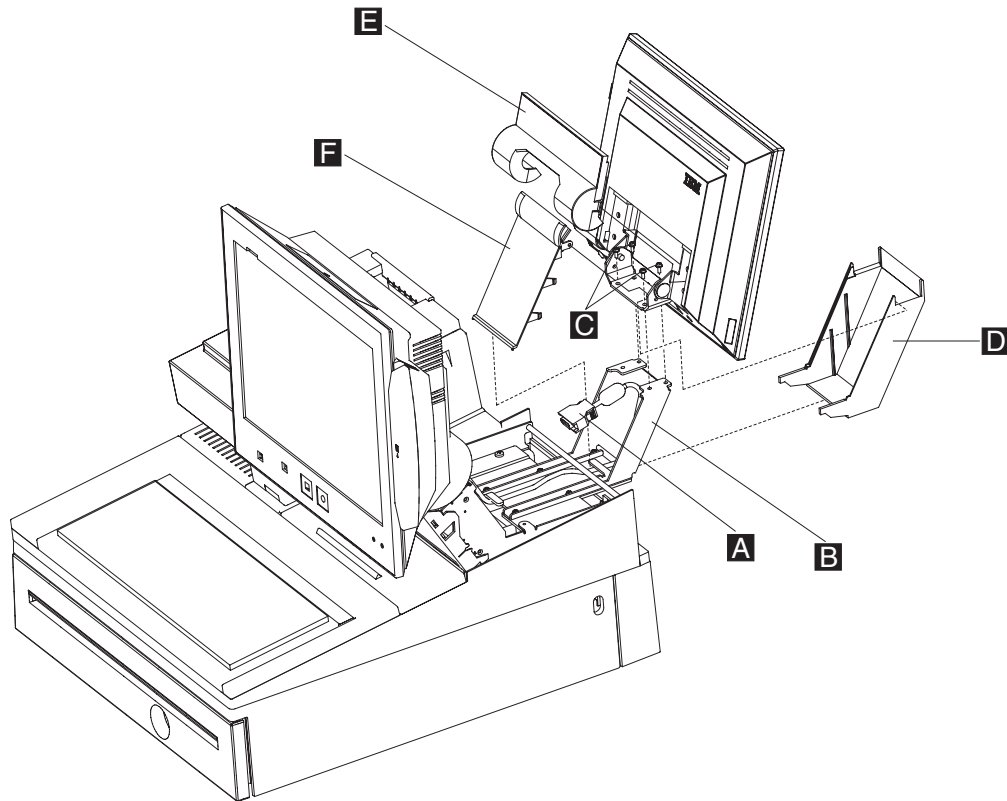


Figure 40. Removing the 4820 SurePoint Solution display cable and covers

- a. Remove the 4820 filler panels in the following order (**E** , **D** , and **F**), as show in Figure 40.

Note: When taking off filler panel **F** , notice that the tabs are located on the outside of the mounting bracket **B** . The tabs hold filler panel **D** in place.

- b. Disconnect the 4820 display cable **A** from the 4820 connector located on the back of the display, and from the rear connector panel on the SurePOS 500/600. Remove cable.
- c. Remove the 4820 mounting bracket by removing the four screws **C** from the display mounting bracket **B** . Carefully place the 4820 display on a smooth, clean surface.

- d. Remove the 4820 display by removing the four screws **C** from the display mounting bracket **B**, as shown in Figure 41. Carefully place the 4820 display on a smooth, clean surface.

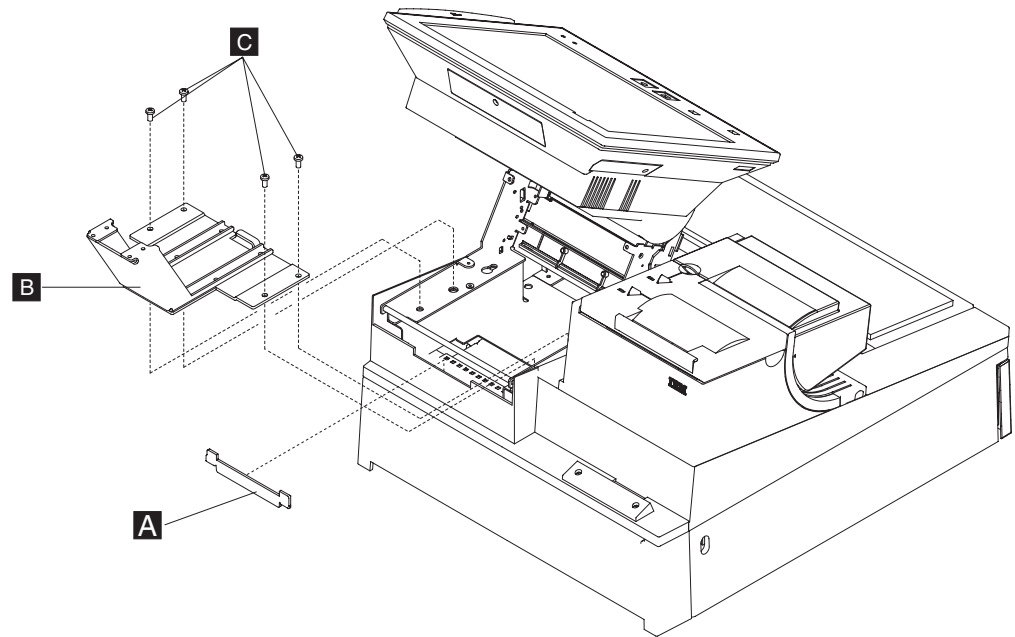


Figure 41. Removing the 4820 SurePoint Solution from a keyboard integration tray

Note: Spacer **A**, in Figure 41 is not used when the 4820 is attached. If you are permanently removing the 4820, you must replace this spacer.

7. To remove the **SurePOS 500/600** from the keyboard integration tray, see Figure 42 for callout locations and perform the following steps:

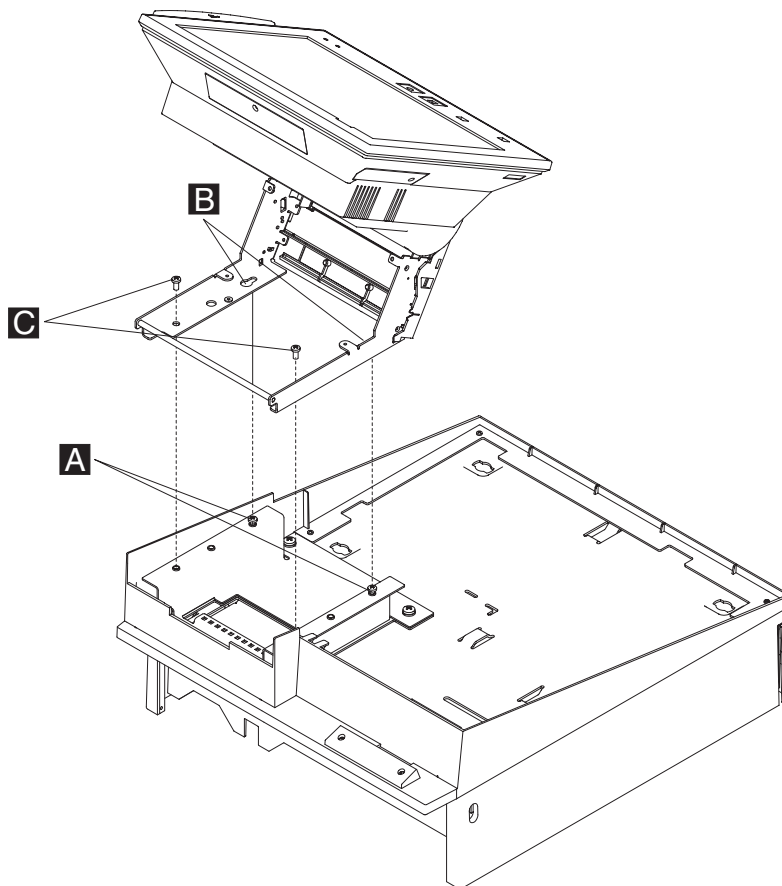


Figure 42. Removing the SurePOS 500/600 from the integration tray

- a. Loosen the two screws **A** that are located through the SurePOS 500/600 base bracket interlocking keyholes **B**, as shown in Figure 42.

Note: When reattaching the SurePOS 500/600 to the integration tray base plate, the interlocking keyholes enable you to set the SurePOS 500/600 onto the two base bracket screws and lock it into a secured position until you can tighten the screws.

- b. Remove the two screws **C**.
- c. Slide the SurePOS 500/600 forward to unlatch it from the base brackets interlocking keyholes and lift up to remove. Carefully place the SurePOS 500/600 on a smooth, clean surface.

8. To remove the **keyboard integration tray** on a cash drawer, perform the following steps:

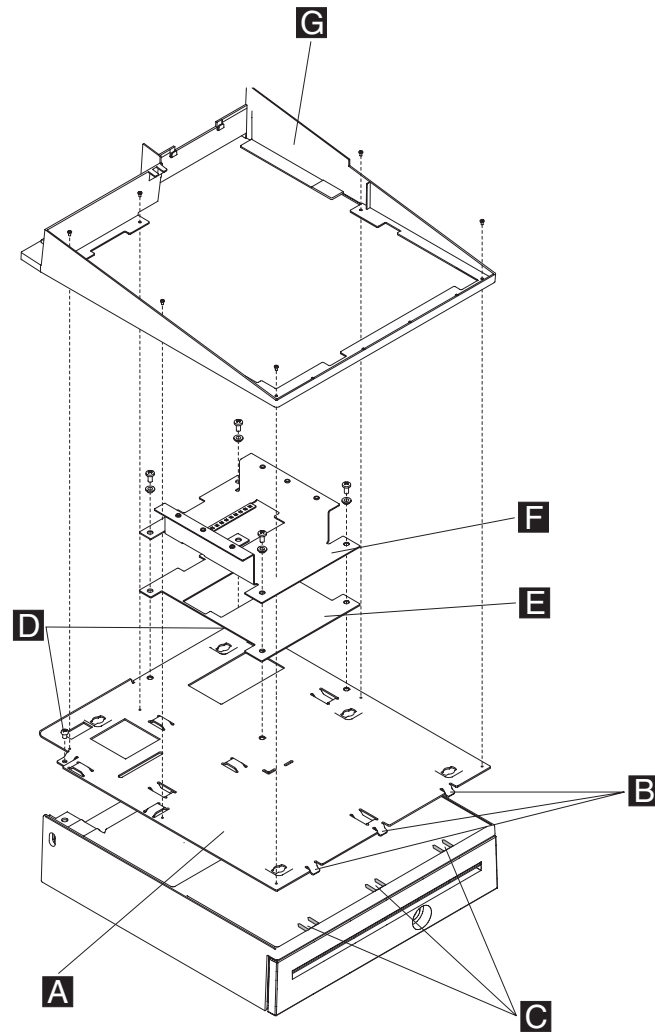


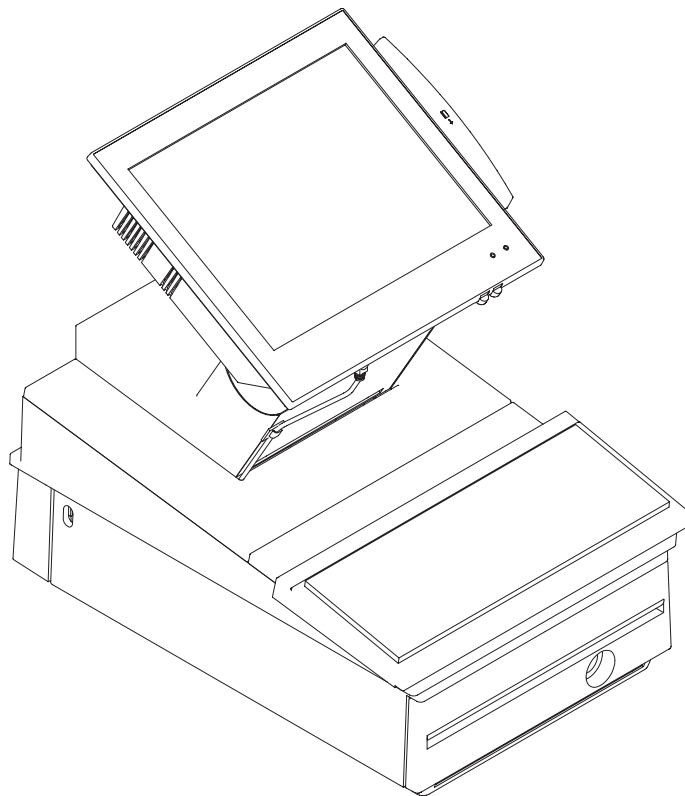
Figure 43. Removing the keyboard integration tray attached to cash drawer

- a. Remove the fence **G** by removing the six small screws, as shown in Figure 43.
- b. Remove the mounting plate **F** by removing the four screws with plastic washers.
- c. Remove the plastic insulator plate **E** from the integration tray.
- d. Remove the two screws **D** that secures the keyboard integration tray to the cash drawer.
- e. Remove the keyboard integration tray **A** by lifting it up from the rear of the cash drawer and then back so the three tabs **B** are free from the three tab holes **C** on the cash drawer.

Compact-size keyboard integration tray mounting for the cash drawer

The compact-size keyboard-integration tray can only be mounted on a compact-size cash drawer without a printer. The compact cash drawer can accommodate a keyboard, a distributed character display or an APA display, and a SurePoint Solution (Machine Type: 4820, Models 4FT or 4FD). A printer can not be placed on the compact-size keyboard-integration tray.

Figure 44. Compact cash drawer mounted with keyboard-integration tray



1. Prepare the SurePOS 500/600 for disassembly by performing the necessary steps for the devices that are being removed:
 - a. Switch OFF the power to the SurePOS 500/600. Unplug the system power cord from the external power source.
 - b. Remove the SurePOS 500/600 base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series— removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
 - c. Remove the power supply as described at “Power supply – removing and replacing” on page 34.
 - d. Remove the cash-drawer rear cover. Push in the two buttons located at the rear sides of the cash drawer and then pull the cash-drawer rear cover back and off.

2. To remove the **distributed character display or APA display**, perform the following steps:
 - a. Unplug the distributed character display cable **F** from the SurePOS 500/600 rear connector panel, as show in Figure 20 on page 37.
 - b. Unroute the distributed character display cable **F** to enable the distributed character display to be removed, as show in Figure 45.

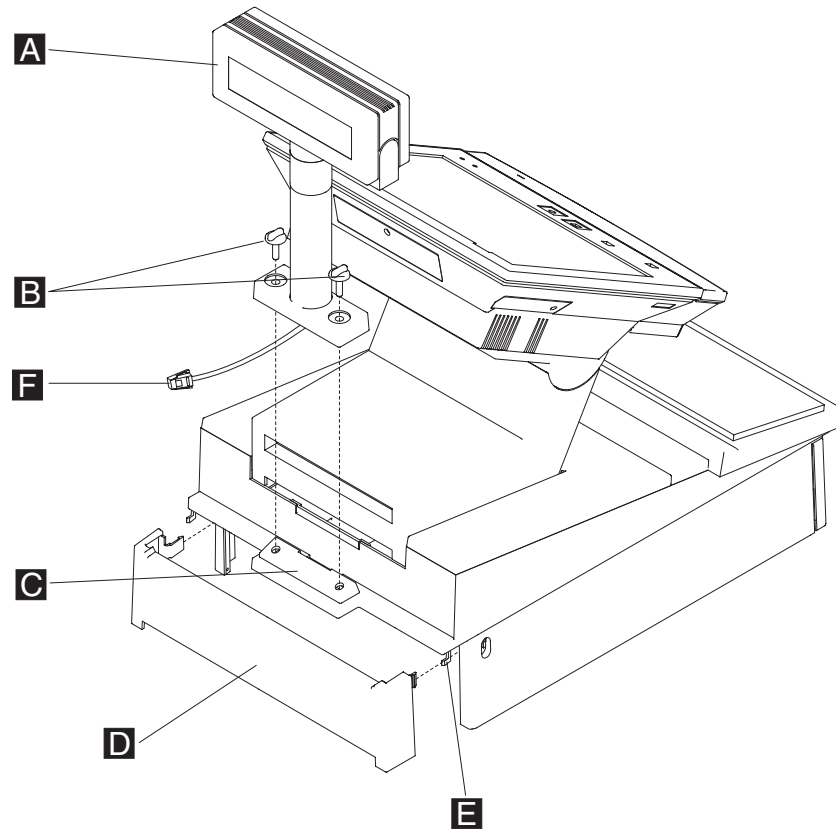


Figure 45. Remove the distributed character display from a full-size integration tray

- c. Remove the distributed character display **A** by removing the two thumbscrews **B** from mounting post **C**. Lift up on the display and pull cable **F** up through the mounting post slot.
- d. For information on disassembling the distributed character display or APA, go to “Distributed character display or APA display— disassembling” on page 118.

3. To remove the **keyboard**, perform the following steps:

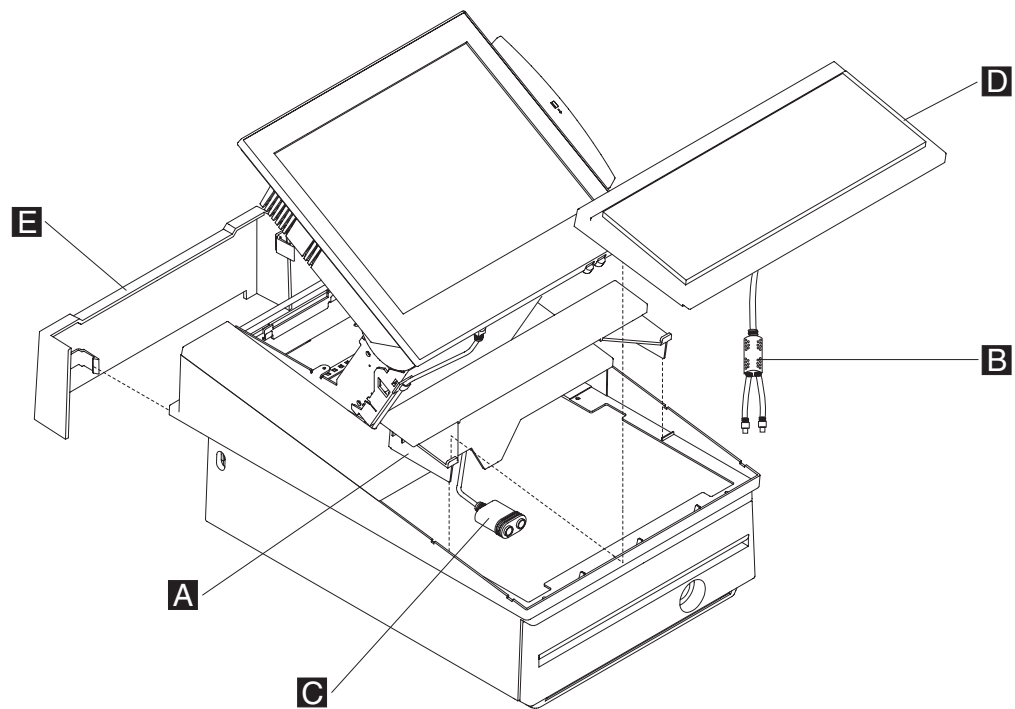


Figure 46. Removing the keyboard onto the integration tray

- a. Remove the keyboard **D** by lifting the keyboard up and off the keyboard integration tray, as shown in Figure 46.
 - b. Remove the keyboard filler panel **A**.
 - c. Detach the keyboard cable **B** from the Y-cable **C**.
4. To remove the **keyboard Y-cable**, perform the following steps:
- a. Unplug the Y-cable **C** from the SurePOS 500/600 front connector panel keyboard/mouse connector, as show in Figure 46. See “Connecting cables to the front panel” on page 36 for keyboard/mouse connector location on the SurePOS 500/600.
 - b. Remove the Y-cable from the self adhesive cable clamp and then remove the Y-cable.

5. Perform the following steps to remove a **SurePoint Solution (Machine Type: 4820, Models 4FT or 4FD)** from a compact-size keyboard integration tray mounted on a cash drawer:

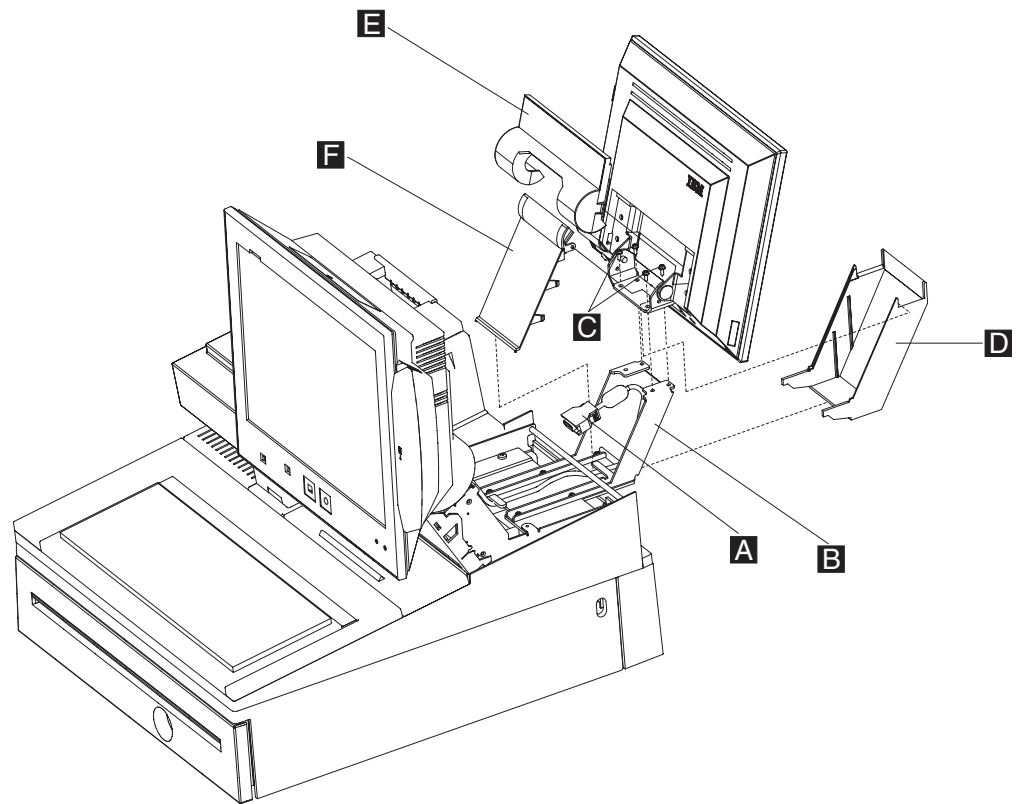


Figure 47. Removing the 4820 SurePoint Solution display cable and covers

- a. Remove the 4820 filler panels in the following order (**E**, **D**, and **F**), as show in Figure 47.

Note: When taking off filler panel **F**, notice that the tabs are located on the outside of the mounting bracket **B**. The tabs hold filler panel **D** in place.

- b. Disconnect the 4820 display cable **A** from the 4820 connector located on the back of the display, and from the rear connector panel on the SurePOS 500/600. Remove cable.

- c. Remove the 4820 display by removing the four screws **B** from the display mounting bracket **C**, as shown in Figure 48. Carefully place the 4820 display on a smooth, clean surface.

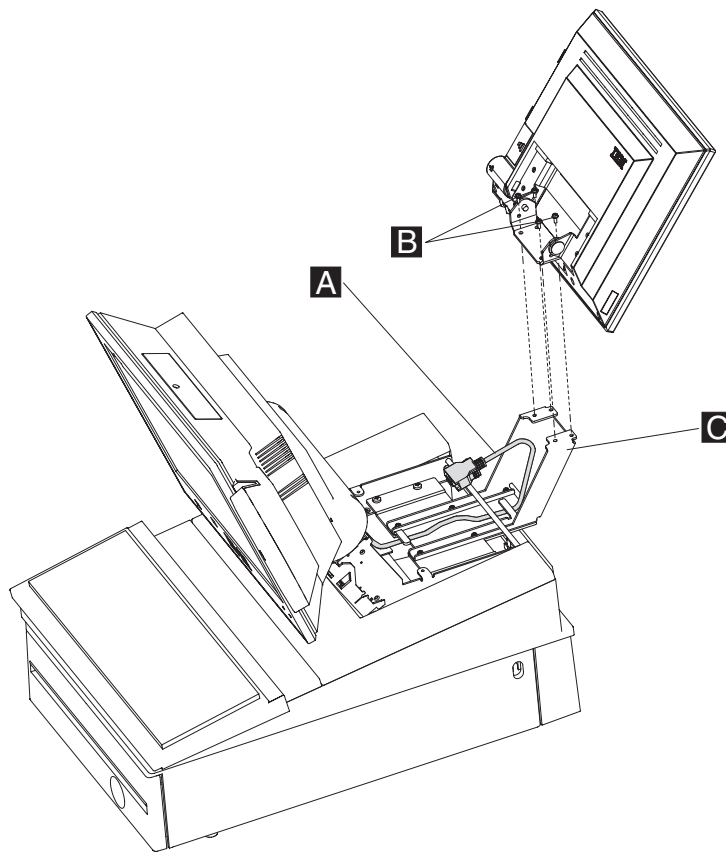


Figure 48. Removing the 4820 SurePoint Solution

- d. Remove the 4820 base plate from the integration tray by removing the four screws **C** from the display mounting bracket **B**, as shown in Figure 49 on page 67. Carefully place the 4820 display on a smooth, clean surface.

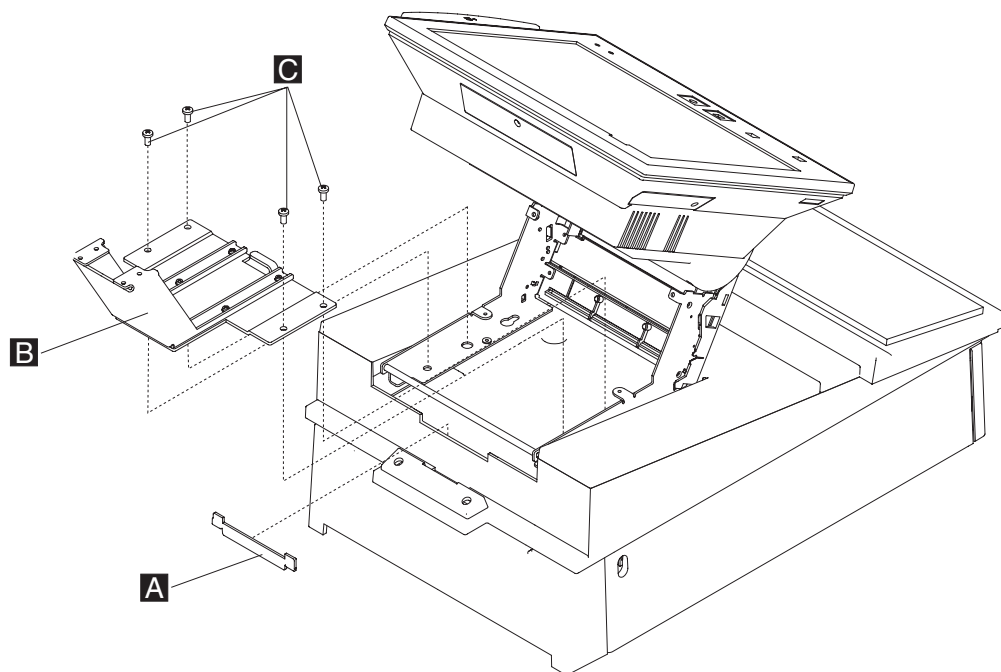


Figure 49. Removing the 4820 SurePoint Solution base plate from a keyboard integration tray

Note: Spacer **A**, in Figure 49 is not used when the 4820 is attached. If you are permanently removing the 4820, you must replace this spacer.

6. To remove the **SurePOS 500/600** from the keyboard integration tray, see Figure 50 for callout locations and perform the following steps:

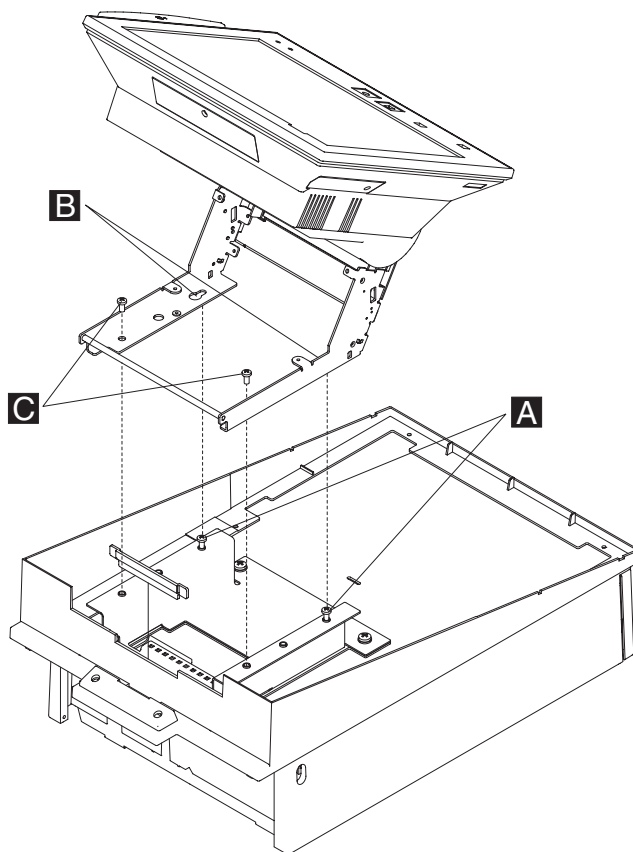


Figure 50. Removing the SurePOS 500/600 onto the integration tray

- a. Loosen the two screws **A** that are located through the SurePOS 500/600 base bracket interlocking keyholes **B**, as shown in Figure 50.

Note: When reattaching the SurePOS 500/600 to the integration tray base plate, the interlocking keyholes enable you to set the SurePOS 500/600 onto the two base bracket screws and lock it into a secured position until you can tighten the screws.

- b. Remove the two screws **C**.
- c. Slide the SurePOS 500/600 forward to unlatch it from the base bracket from the interlocking keyholes and lift up to remove. Carefully place the SurePOS 500/600 on a smooth, clean surface.

7. To remove the **keyboard integration tray** on a cash drawer, perform the following steps:

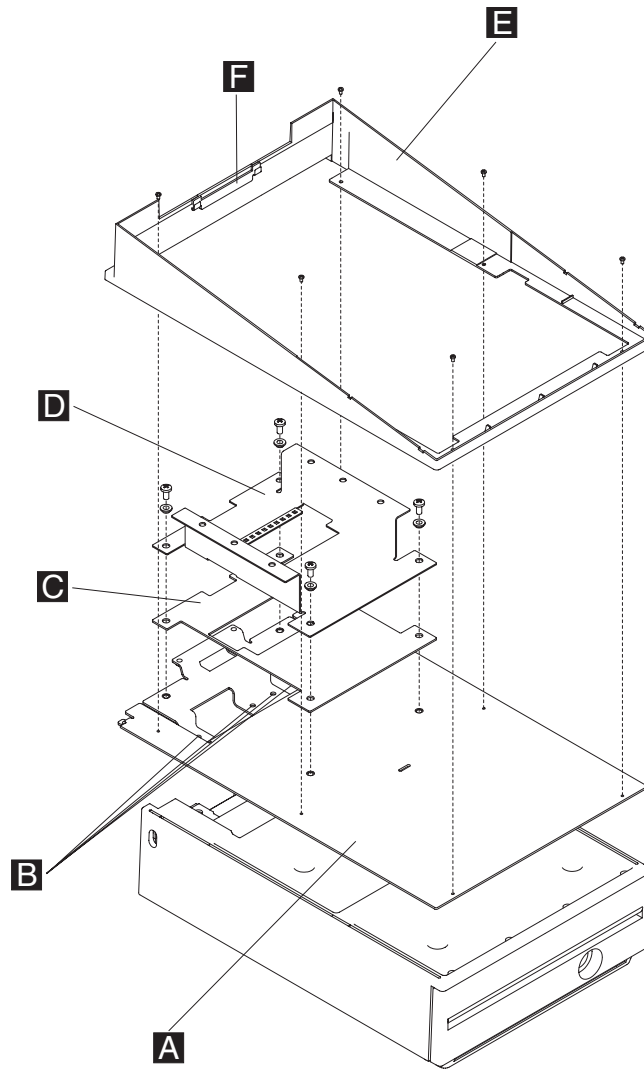


Figure 51. Removing the keyboard integration tray attached to cash drawer

- a. Remove the fence **E** by removing the six small screws, as shown in Figure 51.
- b. Remove the mounting plate **D** by removing the four screws with plastic washers.
- c. Remove the plastic insulator plate **F** from the integration tray.
- d. Remove the two screws **B** that secures the keyboard integration tray to the cash drawer.
- e. Remove the keyboard integration tray **A** by lifting it off of the cash drawer.

Integrated character display – removing and replacing

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the integrated character display **A** from its holder **B**; note that a cable is attached to the display. Tilt the display to the fully open position and pull the corner out as shown in **C** step 2. You will see knob **C** at the end of the display that is used to secure the display to the holder, as shown in Figure 52.

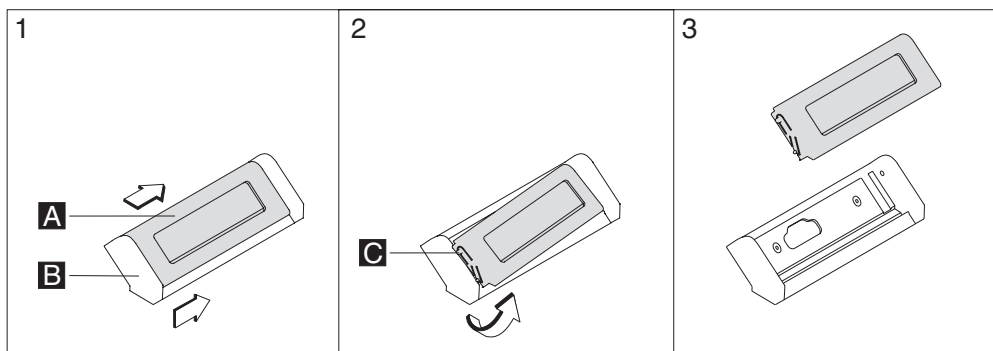


Figure 52. Removing the integrated character display

3. Unplug the cable **D** from the SurePOS 500/600 by releasing the locking tab, as shown in Figure 53.

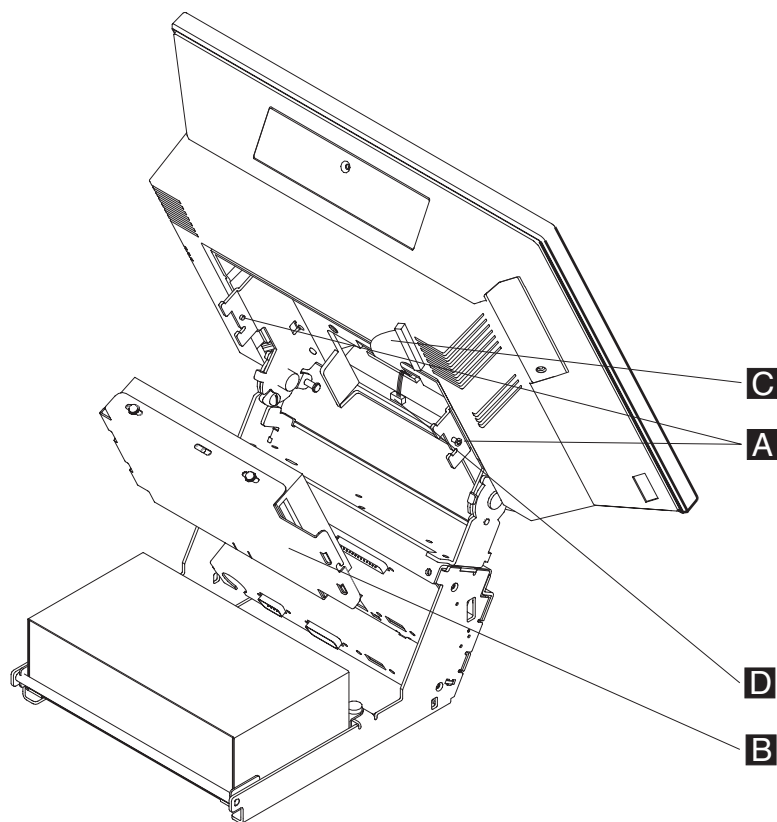


Figure 53. Exploded view of the integrated character display

- | | | | |
|----------|------------------------------|----------|--|
| A | Display holder | D | Display cable |
| B | Display holder screws | E | Knob on end of display that is inserted into the holder. |
| C | Integrated character display | | |

To replace the integrated character display, reverse this procedure.

Magnetic stripe reader (MSR) – removing and replacing

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the two screws that secure the MSR from the back of the right side of the display as shown in Figure 54
3. Unplug the MSR cable from the display.

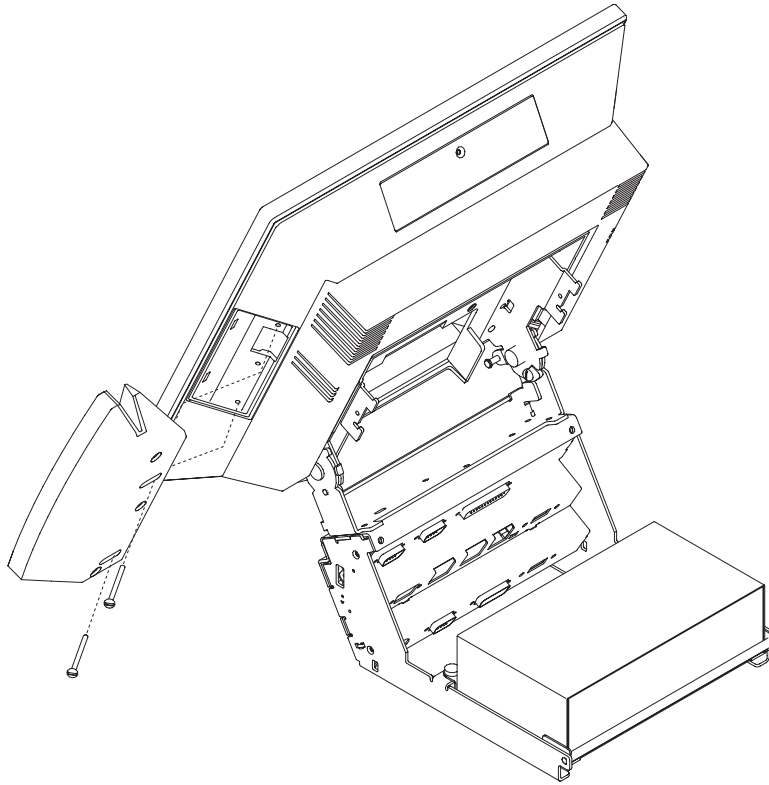


Figure 54. Removing the MSR

To replace the MSR, reverse this procedure.

Note: If you are replacing a dual-sided, single-track MSR, you must set the switch under the MSR cover next to the slot to either the RS-232 or keyboard position, depending on the configuration of the MSR removed.

Hard disk drive (HDD) or CompactFlash – removing and replacing

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the base cover and rear cover as described at “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
3. Loosen, but do not remove, the two screws **A** (one screw on each side) from the HDD mounting bracket and gently move the HDD and bracket assembly **B** up and to the rear, supporting it to prevent damage to the cable or connector.
4. Remove the HDD power connector **D** and data cable connector **C**, as shown in Figure 55. Pull gently on the data cable connector (do not pull on the cable itself) until the connector is free

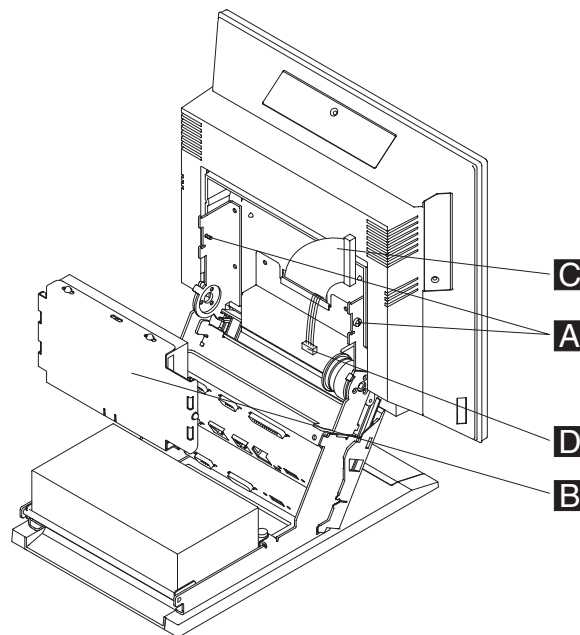


Figure 55. Removing the HDD power and data cable ribbon connector

5. If you are replacing the HDD, remove the three screws holding the HDD to the mounting bracket, as shown in Figure 56.

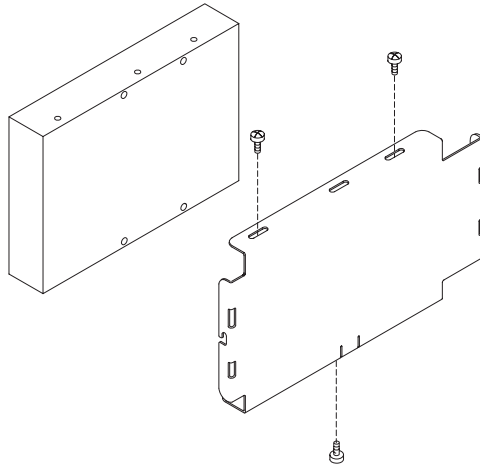


Figure 56. Removing the HDD from the adapter bracket

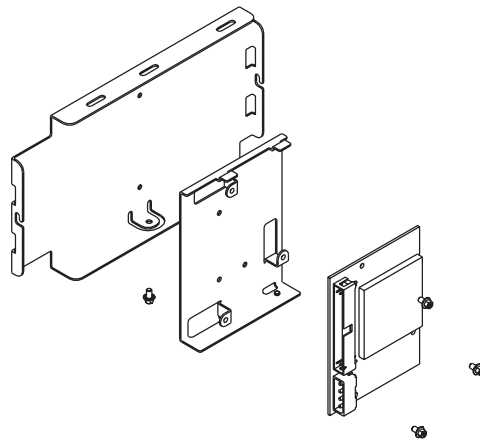


Figure 57. Removing the CompactFlash from the adapter bracket

6. To replace the HDD, reverse this procedure.
7. Power ON the system and use the Setup Utility to verify that the system recognizes the new HDD.

Note: If the system fails to recognize the new HDD, verify that the address jumper is correctly installed. If the HDD requires that a jumper is recognized as Drive 0, the correct position is indicated on a label on the top of the HDD.

PC card adapter – removing and replacing

1. Remove the PC card cover from the rear of the left side of the display (one screw) as shown in Figure 58.
2. Press the PC card adapter-card eject button and gently pull on the adapter card. Never pull the interface cable to remove the adapter card and connector.

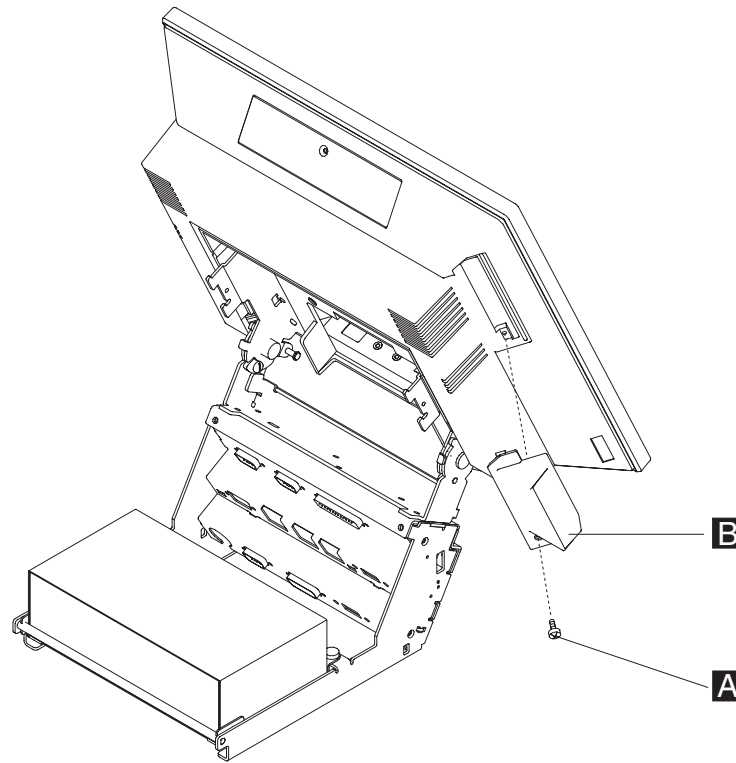


Figure 58. Removing a PC card adapter card

To replace a PC card card, reverse this procedure. For information about defining the PC card adapter card to the system, see the description of the Setup Utility main menu at “Using the Setup Utility” on page 158.

Note: Before removing a PC card with the system unit running Window 98, Windows NT, or Windows 2000, IBM recommends that you stop the PC card in Windows before you physically remove it.

Stereo-speaker kit – removing and replacing

1. Tilt the display to its vertical position and detach the speaker kit from the bottom of the display (two screws) as shown in Figure 59.

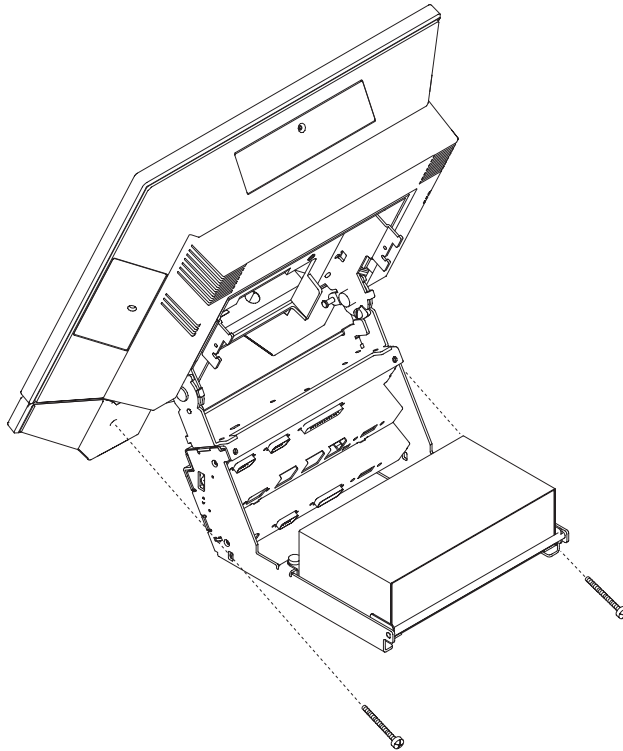


Figure 59. Removing the stereo-speaker kit

2. Tilt the display to its rearmost position and, holding the speaker kit parallel to the front edge of the display, unplug the cable (**A** in Figure 60) from the connector (**B** in Figure 61) at the lower right front of the display.

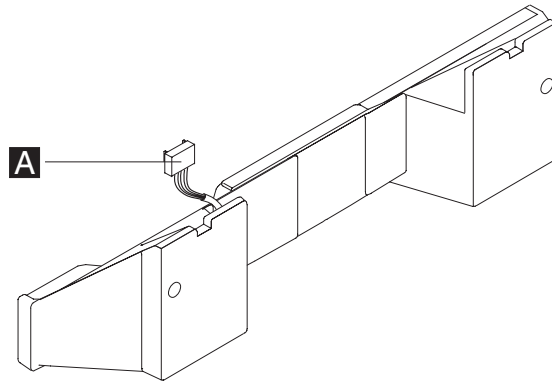


Figure 60. Stereo-speaker kit

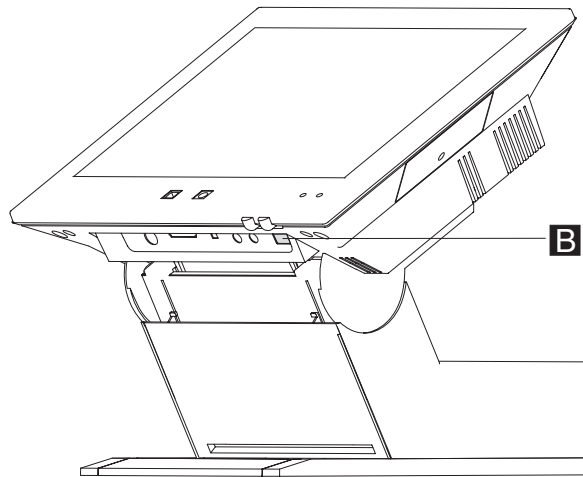


Figure 61. Disconnecting the speaker-kit cable

To replace the speaker kit, reverse this procedure.

Memory module – removing and replacing

Attention: Establish personal grounding before touching this unit. For more information, see “Electrostatic discharge (ESD)” on page 228.

The system board provides two memory-module sockets. You can install any combination of memory modules from 32 MB up to 256 MB. If you have only one module to install, plug it into either socket. If you have two modules to install, plug any module into either socket.

You can remove and replace memory modules without removing the system board by using the following procedure:

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the base cover and rear cover as described at “Base cover and rear cover for the SurePOS 500/600 Series— removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
3. Tilt the display forward to its vertical position.
4. Remove the HDD as described in “Hard disk drive (HDD) or CompactFlash – removing and replacing” on page 73.
5. To access the remaining modules **C**, remove the screw from the memory cover (**A** in Figure 62) located on the back of the display, and slip the cover **B** off of the two alignment pins.

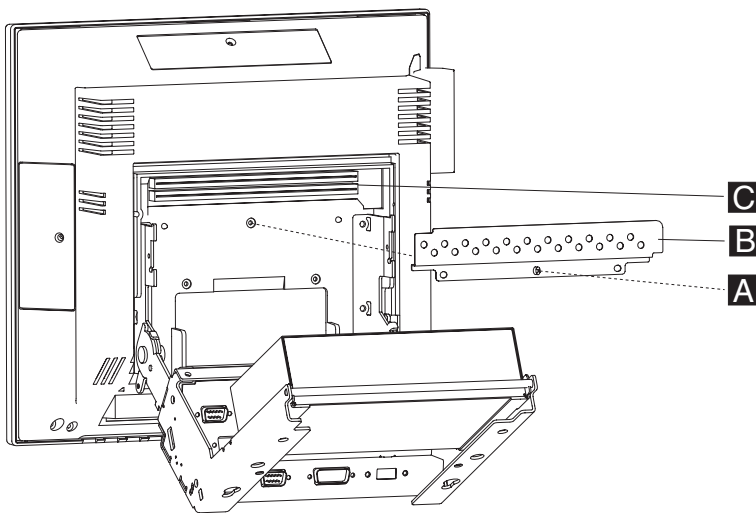


Figure 62. Removing the memory cover

6. To remove a memory module, press downward on the white tabs at the ends of the socket until they are both at a 45° angle. The module rises slightly out of the socket. See Figure 63 for reference.

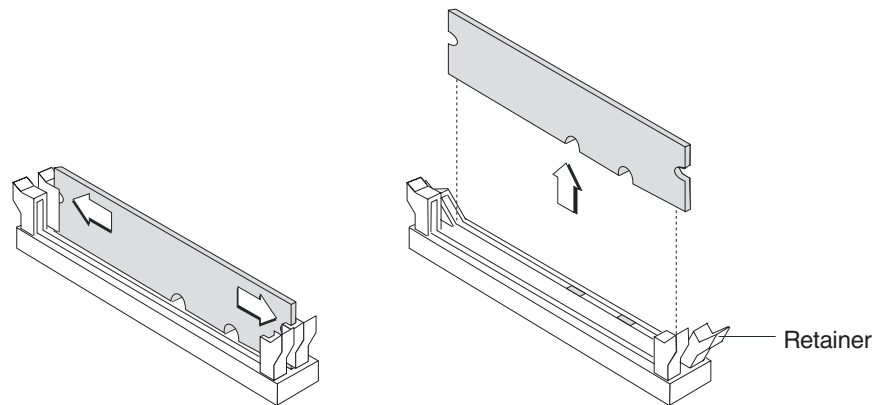


Figure 63. Removing a memory module

7. Touching only the top corners of the module, lift it gently until it is free from the socket.
8. Before inserting a replacement module, note the alignment notches along the bottom of the module and where the module plugs into the slot. One notch is located in the center of the gold connectors and the other notch is offset.
9. Touching only the top corners of the module, align the connector tabs and press the module down firmly. The white tabs at the ends of the socket will close as you insert the module.
10. Replace the components removed earlier in this procedure.

Touch screen – removing and replacing

Attention: To prevent damage to the touch screen, lay the touch screen on a clean smooth surface with the front surface facing up.

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
3. If installed, remove the speaker kit. See “Stereo-speaker kit – removing and replacing” on page 76.
4. If installed, remove the MSR, integrated character display, and PC card.
5. Tilt the display to its vertical position and remove the two screws **A** securing the bottom of the touch screen to the display as shown in Figure 64. (The screws are recessed, in the lowest outboard position at the bottom corners of the rear of the display.)

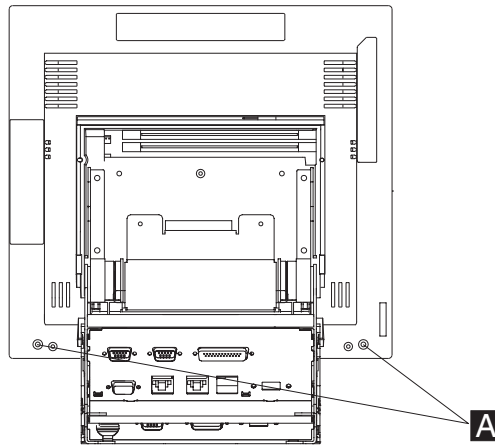


Figure 64. Removing the two screws securing the touch screen

6. From the front of the system, pull the bottom corners of the touch screen forward slightly. On the model 561, the presence sensor cable must be unplugged from the left side of the system. Lift the touch screen off the three hooks **B** on the display, being careful to not damage the ribbon cable or connector **A**. See Figure 65.
7. Disconnect the touch-screen data connector **A** from the wiring harness at the top of the display by pressing on the locking tab on the connector and gently working the connector apart. Apply as little stress as possible to the touch screen connector while doing this.

Attention: To prevent damage to the touch screen, lay the touch screen on a clean smooth surface with the front surface facing up.

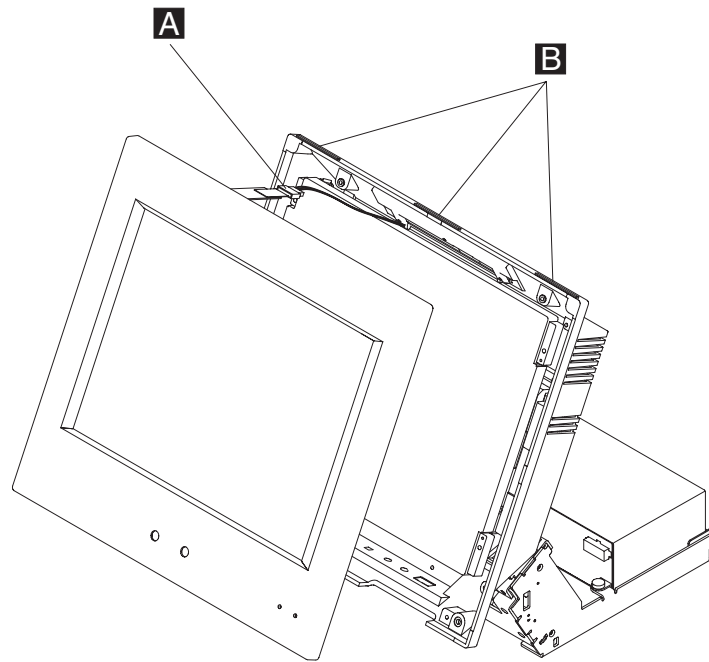


Figure 65. Disconnect the touch screen cable

To replace the touch screen, reverse this procedure, then *continue* with the instructions that follow to linearize the new touch screen..

Note: When replacing the touch screen, be certain that the touch screen latches onto the three hooks **B** on the display.

The touch screen FRU kit includes a bootable diskette which contains vital data necessary for the new touch screen to function correctly. After the system is reassembled, it should be powered up with the diskette in the diskette drive. The system will boot from the diskette and the vital information will be stored in the NOVRAM on the system planar. Next a calibration screen will be presented to allow 2-point calibration of the touch panel. Finally, a screen will be presented to allow "drawing" with a finger to check the touch screen accuracy. If the system will not boot from the diskette, check the BIOS system settings to ensure the diskette drive is enabled.

Note: The touch screen FRU kit also contains an 8 pin NOVRAM device that may be plugged on the system board, if booting from the diskette is not successful and the touch screen is not functional or accuracy is poor. To use the NOVRAM device, the system board must be removed. See "System

board and LCD assembly removal” on page 86. Follow the instructions which are part of the touch screen FRU kit for details on where the NOVRAM is plugged on the planar.

After replacing a touch screen, you must linearize it using the linearization data shipped with the FRU on a diskette. To linearize the screen:

1. Launch the TouchWare application.
2. Select the **Touch Settings** tab.
3. Select **Linearize**.

For more information, see Appendix E, “Operating and maintaining the system”, on page 215.

Non-touch screen – removing and replacing

Attention: To prevent damage to the screen, lay the screen on a clean smooth surface with the front surface facing up.

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
3. If installed, remove the speaker kit. See “Stereo-speaker kit – removing and replacing” on page 76.
4. Tilt the display to its vertical position and remove the two screws **A** securing the bottom of the screen to the display as shown in Figure 66. (The screws are recessed, in the lowest outboard position at the bottom corners of the rear of the display.)

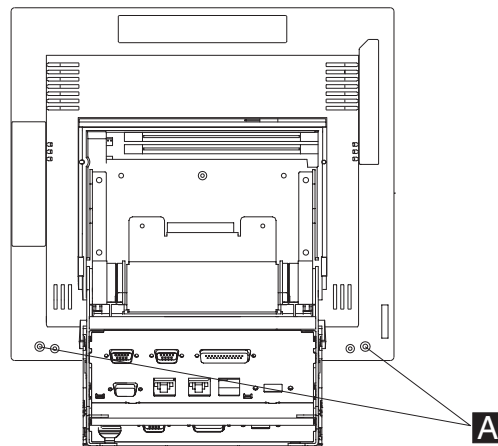


Figure 66. Removing the two screws securing the non-touch screen

5. From the front of the system, pull the bottom corners of the screen forward slightly. On Model 561, the presence sensor cable must be unplugged from the left side of the system. Lift the screen off the three hooks **B** on the display. See Figure 67.

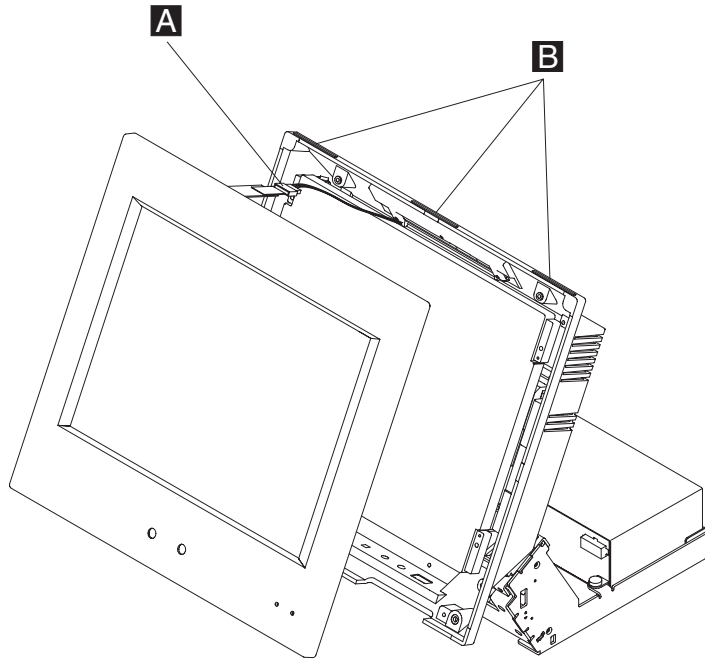


Figure 67. Remove the non-touch screen from the hooks

Attention: To prevent damage to the non-touch screen, lay the screen on a clean smooth surface with the front surface facing up.

To replace the non-touch screen, reverse this procedure.

Note: When replacing the non-touch screen, be certain that the screen latches onto the three hooks **B** on the display.

Presence sensor – removing and replacing

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
3. Remove the touch screen as described at “Touch screen – removing and replacing” on page 80.
4. Remove the two screws **B** securing the presence sensor **A** from the bottom center of the back side of the touch screen, as shown in Figure 68. If replacing the cable is necessary, remove the cable from the front cover by cutting the tie-wraps.

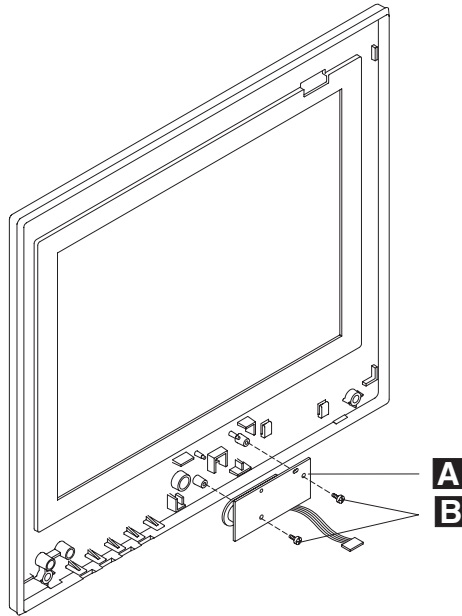


Figure 68. Removing the presence sensor

To replace the presence sensor, reverse this procedure.

System board and LCD assembly removal

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series— removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
3. Remove the MSR, integrated character display, and PC card, and speaker kit if installed.
4. Remove the HDD as described at “Hard disk drive (HDD) or CompactFlash – removing and replacing” on page 73.
5. Remove the touch screen as described at “Touch screen – removing and replacing” on page 80.
6. The system-board connector cover **A** is located just below the center of the back of the display with two screws. Loosen the captive screws until the cover can be lifted off of the retaining tabs as shown in Figure 69. Do not unplug the HDD power cable or data connector from the system board.

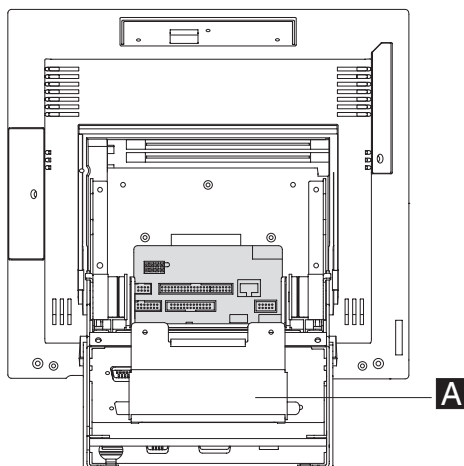


Figure 69. Removing the system board connector cover

7. Unplug all system-board connectors from the system board, carefully folding them out of the way. (The Ethernet connector has a locking tab, which you must release.)
8. Tilt the display back toward rear of system.
9. Remove the operator-display LCD and system board as a unit:
 - a. Remove the four screws **A** as shown in Figure 70 on page 87. Remove the LCD and system board as a unit using the finger tabs **B**.

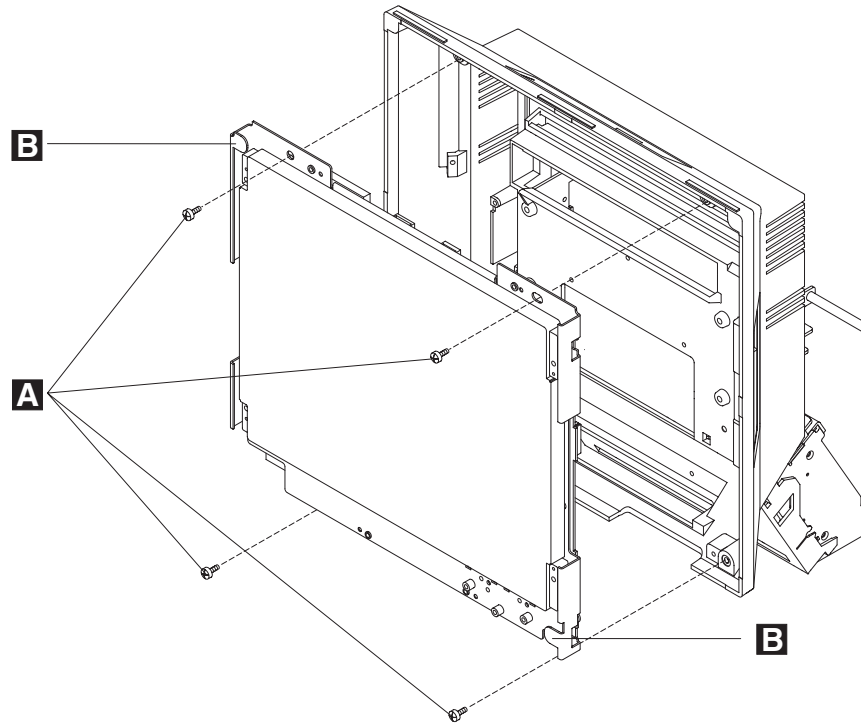


Figure 70. Removing the LCD and system board from the display housing

- b. Holding the LCD and system-board assembly, disconnect the HDD power cable and data connector from the system board or pull them through the opening in the rear cover.
- c. Lay the LCD and system-board assembly on a smooth, clean surface with the LCD facing down.

Operator display (LCD) – removing and replacing

Attention: The LCD is the most expensive component in the machine. Please check all the connections on the cables and then replace the operator-display LCD daughter card, see “Operator-display daughter card – removing and replacing” on page 98, before replacing this component.

The operator display (LCD) and system board must be removed as a unit so the backlight cables can be disconnected from the system board.

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the system board and LCD assembly as described in “System board and LCD assembly removal” on page 86.
3. Lay the LCD and system-board assembly on a smooth, clean surface with the LCD facing down.
4. Disconnect the LCD backlight cables **A** from the system board, as shown in Figure 71.
5. Remove the backlight cables from the plastic holder attached to the metal LCD frame and route the cable through the hole to enable the LCD to be removed.
6. Remove the operator-display LCD and system board as a unit:

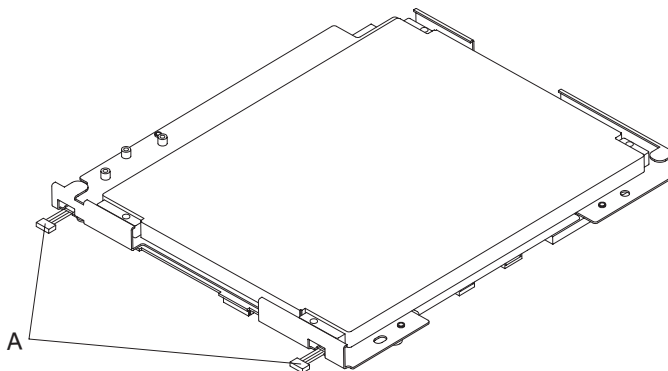


Figure 71. Disconnecting the backlight cables from the system board

7. Turn the system board and LCD assembly LCD side up. Remove the four screws **A** securing the LCD to the system board, as shown in Figure 72 on page 89.

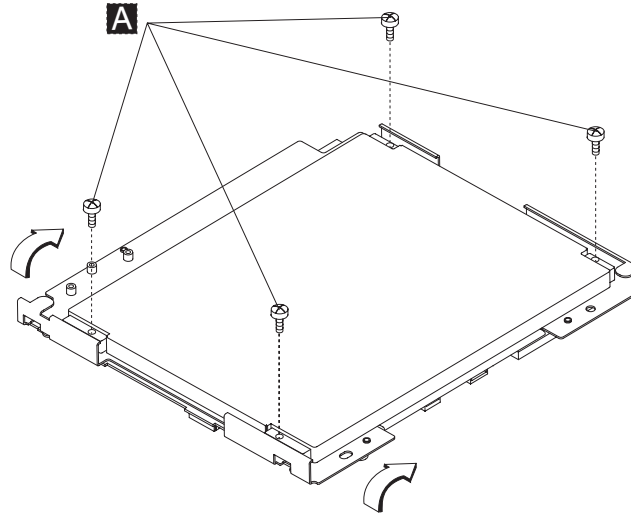


Figure 72. Removing the LCD from the system board

8. Remove the LCD by rotating it as shown in Figure 72, being careful to not pull on the LCD data cable on the left side. Holding the LCD vertically, unplug the LCD connector card from the LCD.

To replace the LCD, reverse this procedure.

Operator-panel card – removing and replacing

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
3. Remove the touch screen as described at “Touch screen – removing and replacing” on page 80.
4. Model 521 has two sets of brightness and contrast control buttons, Models 541 and 561 have only one set of buttons. Remove the brightness and contrast control buttons **A** from the front bottom of the display. There is one screw for each set of buttons.
5. Remove the Operator-panel card **B** (**C** – two screws) from the lower right corner of the system board as shown in Figure 73 and detach the connectors. If necessary, remove and replace the cable.

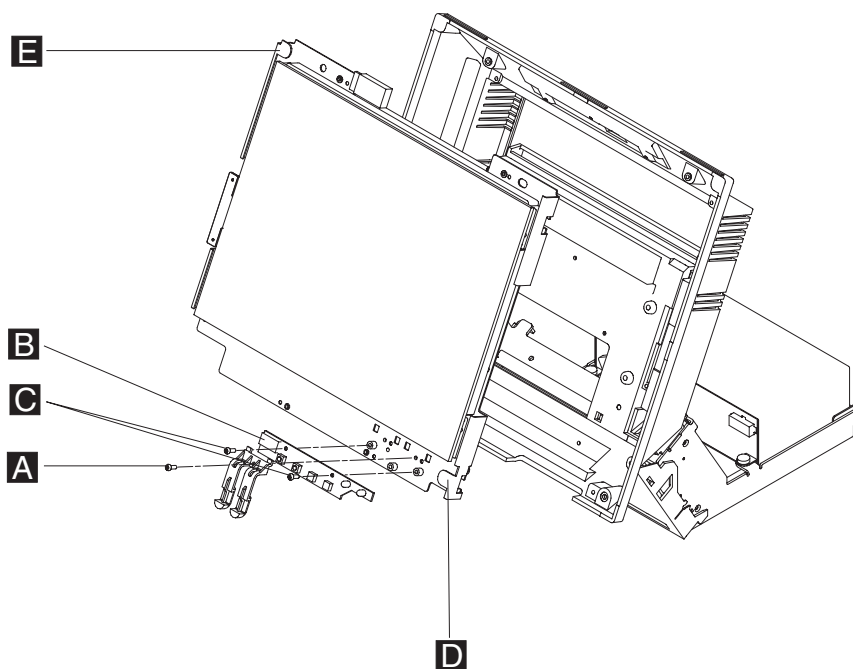


Figure 73. Removing the Operator-panel card

To replace the card, reverse this procedure.

System board – removing and replacing

Attention: Establish personal grounding before touching this unit. See “Electrostatic discharge (ESD)” on page 228.

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the system board and LCD assembly as described in “System board and LCD assembly removal” on page 86.
3. Lay the LCD and system-board assembly on a smooth, clean surface with the LCD facing down.
4. Disconnect the fan power cable **A** from the system board, as shown in Figure 74.
5. Remove the four heat-pipe-bracket mounting screws **B**.
6. Release the clip **F** that secures the heat sink to the processor module.

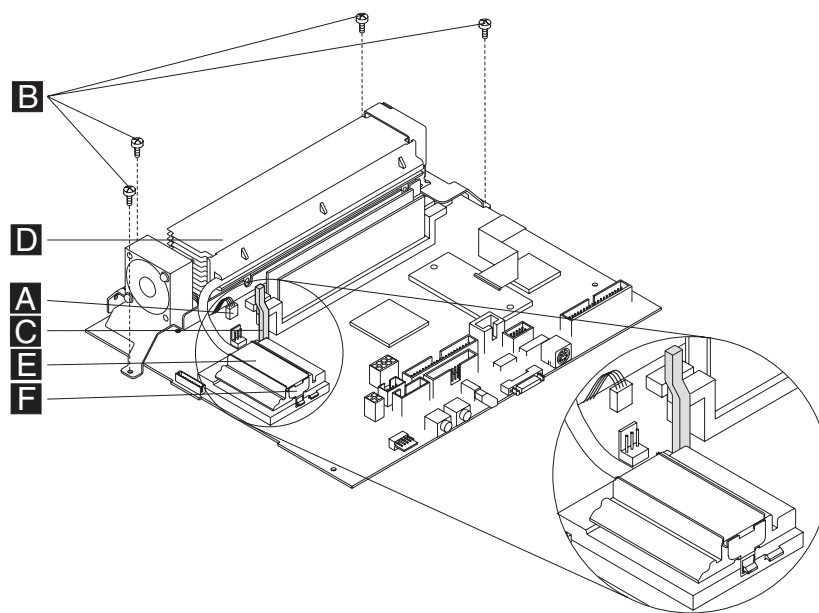


Figure 74. Removing the processor

7. Press the processor-socket arm lever **C** slightly to the left and then pivot it upward to release the processor from the socket.
8. Remove the heat-pipe and processor as a unit.
9. Remove the following components from the system board, using Figure 75 on page 92 as a reference:
 - Memory modules, as described in “Memory module – removing and replacing” on page 78.
 - Operator display daughter card, as described in “Operator-display daughter card – removing and replacing” on page 98.
 - Remove the touch panel NOVRAM from the old system board and place on the new system board.

Also remove the two screw **B** that connect the daughter-card to the system board. Reinstall them on the new system board. See Figure 79 on page 98 for location of screws.

10. Separate the system board from the metal LCD holder by removing the six screws **A** as shown in Figure 75, and by removing the two hex screw for the daughter card as shown in Figure 79 on page 98.

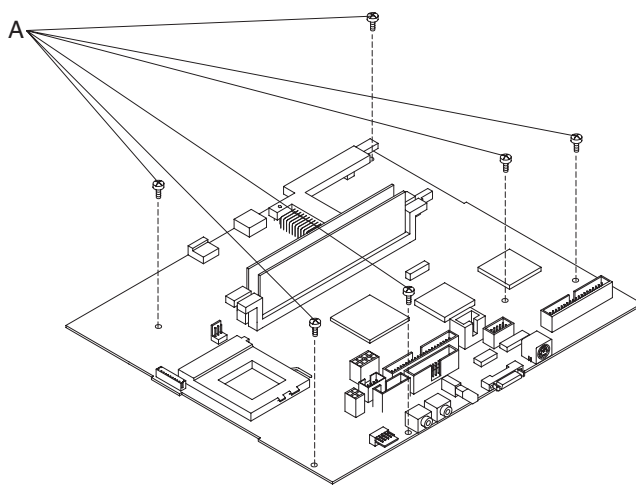


Figure 75. Removing the System board

11. Install the new system board and secure with the six screws.
12. Install the removed components on the new system board.

Notes:

- a. Make sure that the processor-type jumpers on the new board are in the same locations as the jumpers on the old board. See “System-board jumper locations” on page 93 for jumper information.
 - b. Leave the service-level update jumpers in the default positions. See Figure 76 on page 93 and “System board jumper settings” on page 94.
13. To replace the system board, reverse this procedure.
 14. Run the Setup Utility to configure the CMOS. See “Using the Setup Utility” on page 158.

System-board jumper locations

Figure 76 shows the system-board jumper locations. See the following topics for jumper descriptions and information about jumper settings.

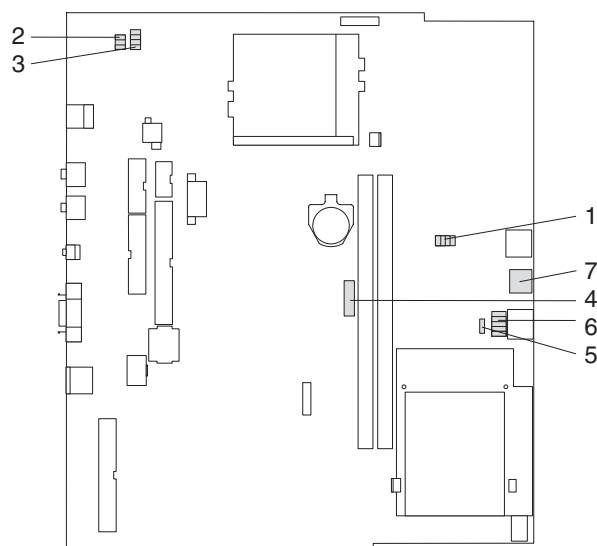


Figure 76. System board jumper locations

- | | |
|--------------------------------|----------------------|
| 1 JP1 (xx1 Models only) | 4 JP4 |
| 2 JP2 (xx1 Models only) | 5 JP5 |
| 3 JP3 (xx1 Models only) | 6 JP6 to JP10 |

System board jumper settings

Table 11 lists the system board jumper settings. All jumper pins have the pin number printed on the system board for easy identification.

Table 11. System board jumper settings

Jumper	Description
JP1	jumper installed from pins 1 to 2, 3 to 4 and 5 to 6 (Models xx1 only)
JP2	jumper installed on pins 1 to 2 and 5 to 6 (Models xx1 only)
JP3	jumper installed on pins 7 to 8 (Models xx1 only)
JP4	jumper installed on pins 1 to 2 (all models)
JP5	jumper installed on pins 2 to 3 (all models)
JP6	jumper installed on pins 2 to 3 (all models)
JP7	jumper installed on pins 2 to 3 (all models)
JP8	jumper installed on pins 2 to 3 (all models)
JP9	jumper installed on pins 2 to 3 (all models)
JP10	jumper installed on pins 2 to 3 (all models)

Notes:

1. Pin 1 is indicated on all jumpers by a small white circle.
2. **X** indicates that a jumper is to be installed.
3. **Open** indicates that the jumper must be installed on one pin to avoid making a connection. The jumper is reserved for future use.

System-board battery – removing and replacing

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the system board and LCD assembly as described in “System board and LCD assembly removal” on page 86.
3. Lay the system board and LCD assembly face down on a smooth, clean surface with the LCD facing down.
4. Bend the battery restraining tab to the side and lift up the battery **A**, as shown in Figure 77.

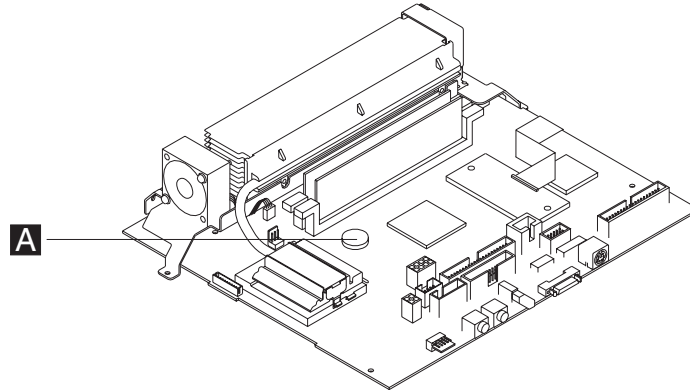


Figure 77. Removing the system battery

5. Insert the new battery with the positive side up.

Reverse the steps used to remove the system board and LCD assembly to reassemble the system unit.

Processor module – removing and replacing

The operator display (LCD) and system board must be removed as a unit so the processor can be removed from the system board.

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the system board and LCD assembly as described in “System board and LCD assembly removal” on page 86.
3. Lay the system board and LCD assembly face down on a smooth, clean surface with the LCD facing down.
4. Disconnect the fan power cable **A** from the system board, as shown in Figure 78.
5. Remove the four heat-pipe-bracket mounting screws **B**.
6. Release the clip **F** that secures the heat sink to the processor module.

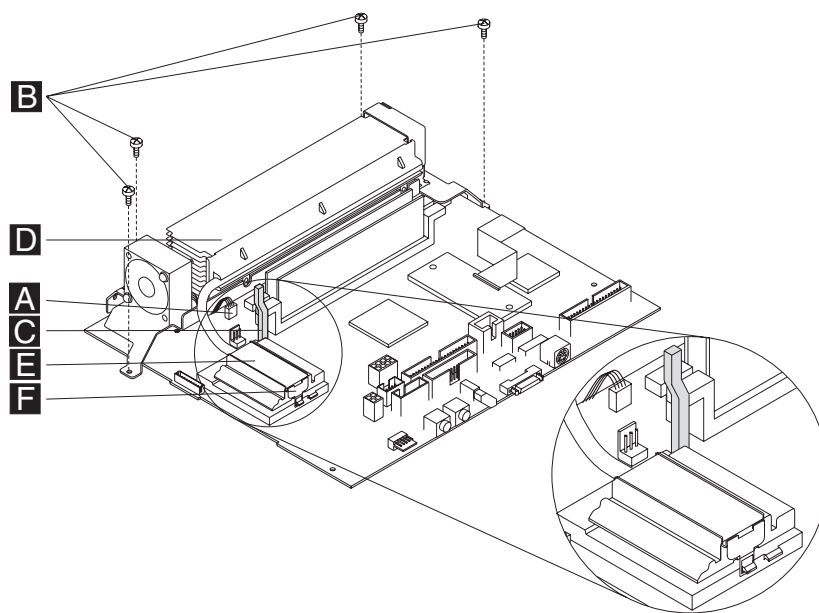


Figure 78. Removing the processor

7. Press the processor-socket arm lever **C** slightly to the left and then rotate it upward to release the processor from the socket.
8. Remove the heat pipe **D** and processor **E** as a unit.
9. The heat sink and processor module are bonded with heat-conducting tape. With a flat-head screwdriver, carefully separate the processor from the heat sink. Remove all remaining heat conducting tape from the heatsink.
10. The processor may only be installed in the socket one way because the processor lacks a pin on one corner and the socket lacks hole for the pin. Locate the missing corner pin on the processor and insert the processor in the socket. Push the processor socket arm lever down. Locate pin 1 on the new processor. Look for one of the following markings that indicates the pin 1 location:
 - A beveled corner of the processor casing
 - A dot located in a corner on the top of the processor casing
 - A square solder joint (instead of round) at the base of a pin (bottom view)
11. Attach the new heat-conducting tape to the processor module.

12. Place the heat pipe assembly on the mounting holes. The heat sink will be on top of the processor. Attach the clip **F** to hold the heatsink to the processor.
13. Install the heat-pipe screws and plug in the fan.
14. Replace the components removed earlier in this procedure.

Note: When replacing the fan and heat-pipe subassembly, route the fan power cable so it is not pinched under the heat-pipe mounting-bracket tabs.

Operator-display daughter card – removing and replacing

The operator display (LCD) and system board must be removed as a unit so the daughter card can be removed from the system board. The LCD daughter card FRU kit consists of the daughter card, the flat cable and a LCD connector card (located on the back of the LCD). The LCD may need to be removed to remove the LCD connector card or to reseat the cable.

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the system board and LCD assembly as described in “System board and LCD assembly removal” on page 86.
3. Lay the system board and LCD assembly face down on a smooth, clean surface with the LCD facing down.
4. Remove the two screws **B** attaching the daughter card **A** to the system board. The LCD data cable can be removed by sliding the 2 small black tabs on the cable connector out. The LCD data cable will then slide out easily. See Figure 79.

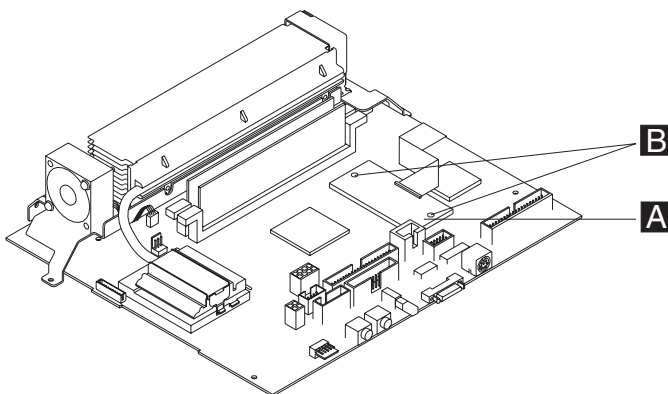


Figure 79. Removing the operator display daughter card

5. Replace the LCD connector card and cable if necessary. See “Operator display (LCD) – removing and replacing” on page 88.
6. To replace the daughter card, align the connector on the bottom of the card with the connector on the processor board and insert. Install the two screws.

Rear connector panel (tailgate) – removing and replacing

Removing the rear connector panel (tailgate)

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Remove the base cover and rear cover as described at “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
3. Unplug any peripheral cables from the front connector panel.
4. Remove the system-board connector cover **A** as shown in Figure 80.
5. Unplug the cables between the rear connector panel and the system board at the system-board end (shaded portion above the cover). Do not unplug the HDD power cable or the data connector from the system board.

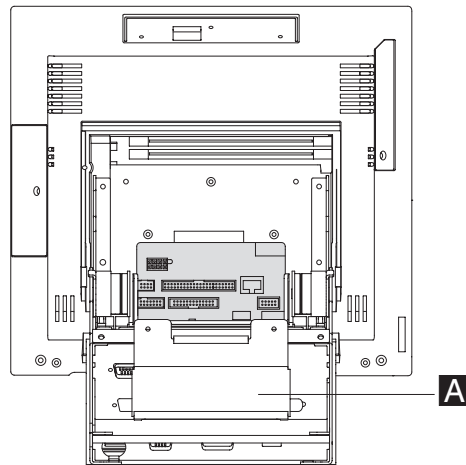


Figure 80. Unplugging the cables from the system board

6. Remove the front base and throat covers **A** and **B** :
 - a. Slide the moveable throat cover **B** down. The cover has slots that mate with the bottom of the display.
 - b. With a small flat-head screwdriver, pry off the front covers at tab points **C** and **D** , and pull it away from the frame. Repeat this procedure for each side of the cover.

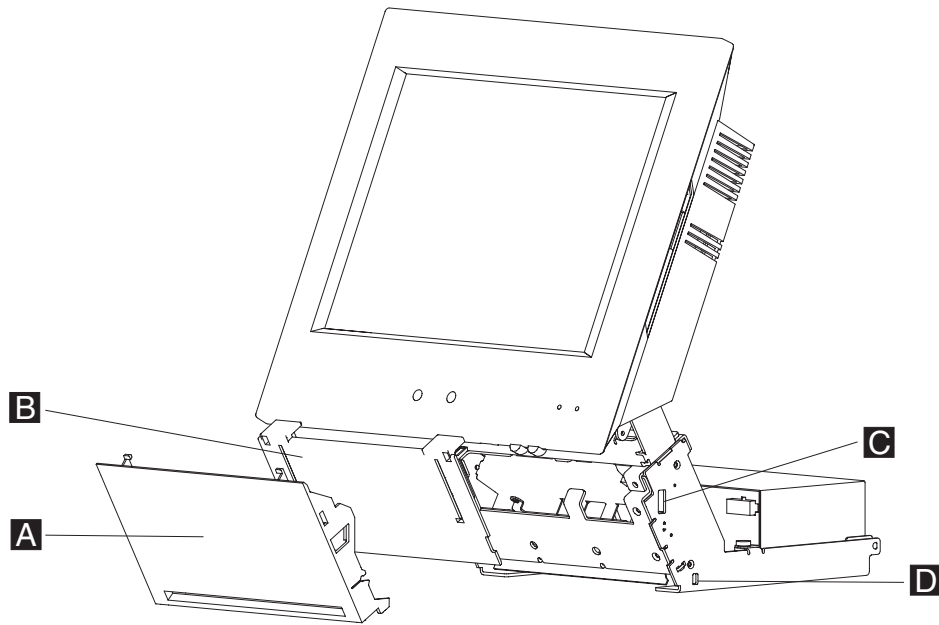


Figure 81. Removing the front base and throat covers

7. Detach the operator-display assembly (containing the operator display, touch screen and system board) from the tailgate bracket by removing four screws **A**, as shown in Figure 82. Carefully set the operator-display assembly aside.

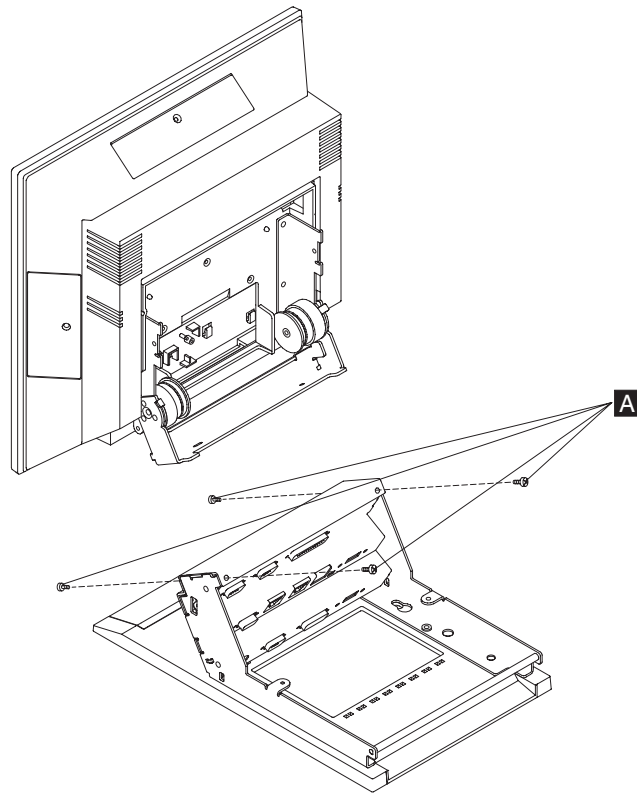


Figure 82. Detaching the display from the tailgate bracket

8. You may replace the hinge assembly at this time by attaching with four screws **A**.

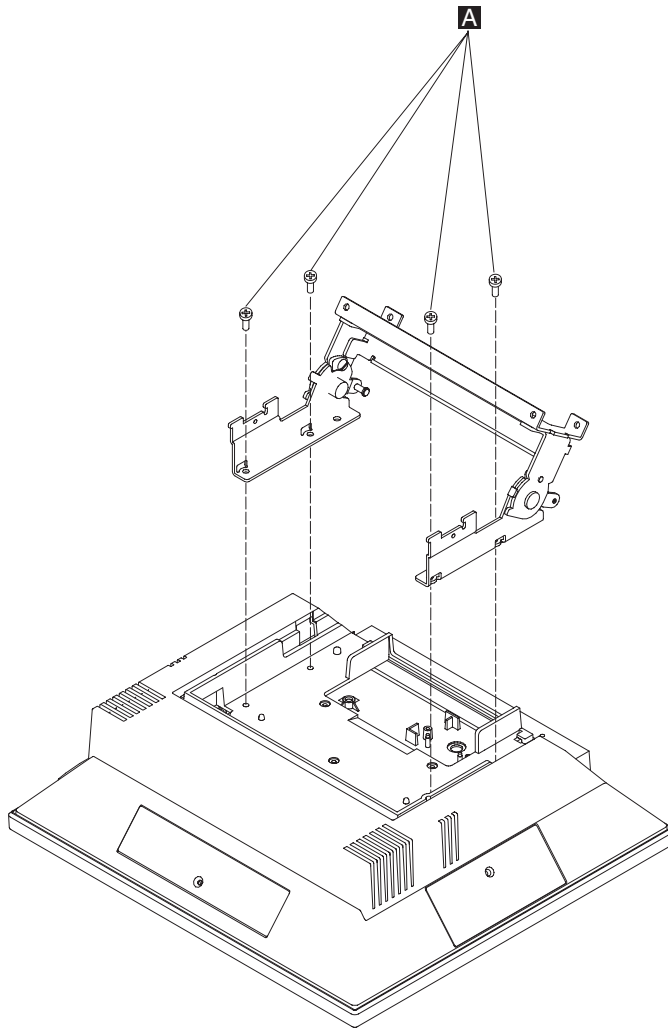


Figure 83. Replacing the hinge assembly on the display

9. Before removing the tailgate, observe from the front underside of the tailgate assembly and holder bracket. Notice the small alignment knobs on the inner sides of the holding bracket in correlation with the tailgate assembly. The small alignment knobs help you install and align the new tailgate assembly.
10. Detach the tailgate assembly by removing four screws **A** as shown in Figure 84.

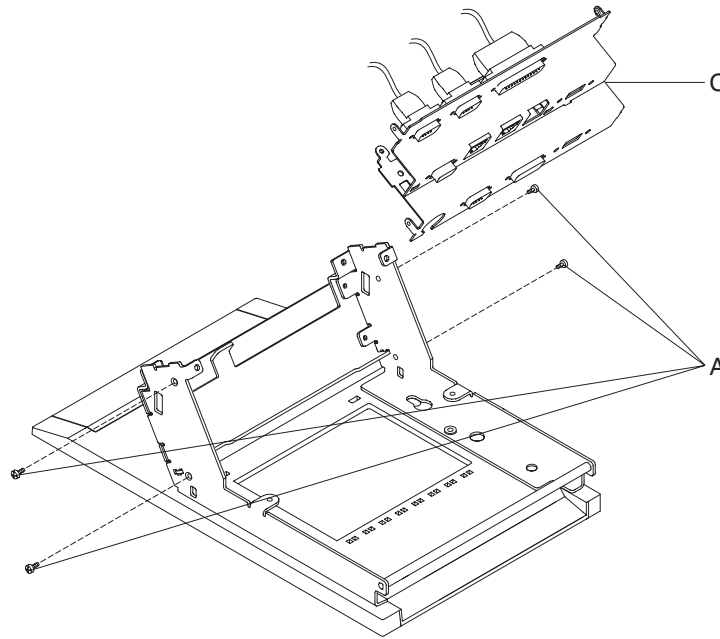


Figure 84. Removing the tailgate assembly

11. Remove the entire tailgate assembly **C**.
12. Continue to “Installing the rear connector panel (tailgate)” on page 104 to reinstall the tailgate.

Installing the rear connector panel (tailgate)

1. Insert the new tailgate into the holding bracket. Align the tailgate assembly with the knobs on the inside of the holding bracket.
2. Install four screws to secure the tailgate assembly to the holding bracket.
3. Route the cables from the tailgate assembly toward the power supply.
4. Install the display assembly with four screws **A** as shown in Figure 82 on page 101.
5. Plug the cables from the tailgate assembly into their connectors on the system board.
6. Install the system-board connector cover with two screws **A**, as shown in Figure 69 on page 86, by performing the following steps:
 - a. Hold up the HDD power cable and data connector while resting the system-board connector cover flat and slightly about the connector locations on the rear of the display. Notice that the cover is notched to accommodate the cables.
 - b. Guide the cover down and between the slots on the rear of the display.
 - c. Install the two screws.
7. Install the front base and throat covers (**A** and **B** as show in Figure 81 on page 100.
8. Install the power supply as described in “Power supply – removing and replacing” on page 34 and install the power cord.
9. Install the base cover and rear cover as described at “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32.
10. Power ON the SurePOS 500/600.

Cash drawer FRUs – removing and replacing

This section describes how to remove and replace both full-size and compact cash drawer-related FRUs. It also contains removal and replacement procedures that are common to both cash drawers.

Full-size cash drawer FRUs – removing and replacing

This section describes how to remove and replace full-size cash drawer-related FRUs.

Removing and replacing a full-size drawer

To remove a full size cash drawer:

1. If the cash drawer is mounted to the underside of a counter, refer to the instructions that came with the mounting brackets.
2. Switch OFF the power to the SurePOS 500/600. Unplug the system power cord from the external power source.
3. Remove the SurePOS 500/600 base cover as described at “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32 and unplug the power cord from the system unit at the power supply.
4. Open the cash-drawer rear cover.
5. Unplug the cable from the rear of the cash drawer.
6. Remove the integration tray:
 - a. To detach the **non-keyboard integration tray** from the top of the cash drawer, see “Non-keyboard integration tray – removing and replacing” on page 42.
 - b. To detach the **keyboard integration tray** from the top of the cash drawer, see “Keyboard integration tray mounting for countertop and cash drawer” on page 52
7. Open the cash drawer and pull it all the way out.
8. Remove the till.
9. Push in on the buttons in the rails, as shown in Figure 85 on page 106, and pull up on the front of the drawer until the drawer is free from the slides. Pull the drawer forward out of the base.

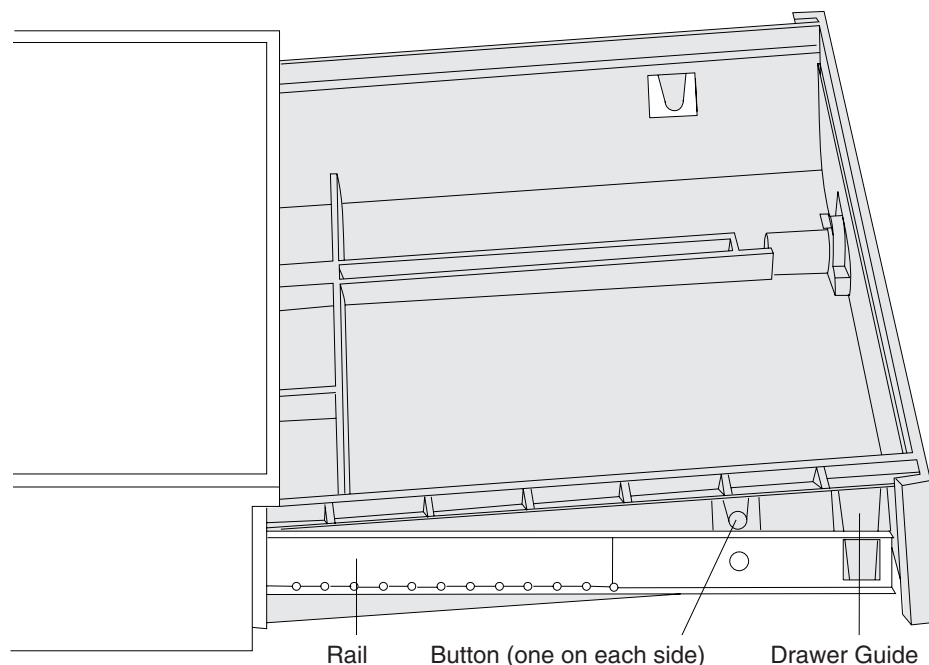


Figure 85. Removing and replacing a full size cash drawer

To replace a cash drawer:

1. Make sure that the latch assembly is unlatched; otherwise, the drawer will not close properly.
2. Pull both slides all the way out.
3. Position the rear of the drawer into the slides so that the drawer guide on each side of the drawer aligns with the corresponding opening on each side, as shown in Figure 85.
4. Pivot the front of the drawer downward until it is positioned fully into the slides.
5. Close the drawer to make sure it closes correctly and remains closed.

Removing and replacing a full-size slide assembly

To remove a cash-drawer slide assembly:

1. Disconnect the cash drawer cable.
2. Remove the drawer as described at “Removing and replacing a full-size drawer” on page 105).
3. Remove the latch assembly (see “Removing and replacing the latch and sensor assembly” on page 114).
4. Remove the three screws that secure the slide to the base and lift out the slide assembly, as shown in Figure 86 on page 107.
5. If necessary, remove the top cover from the base (see “Removing and replacing the top cover” on page 113).

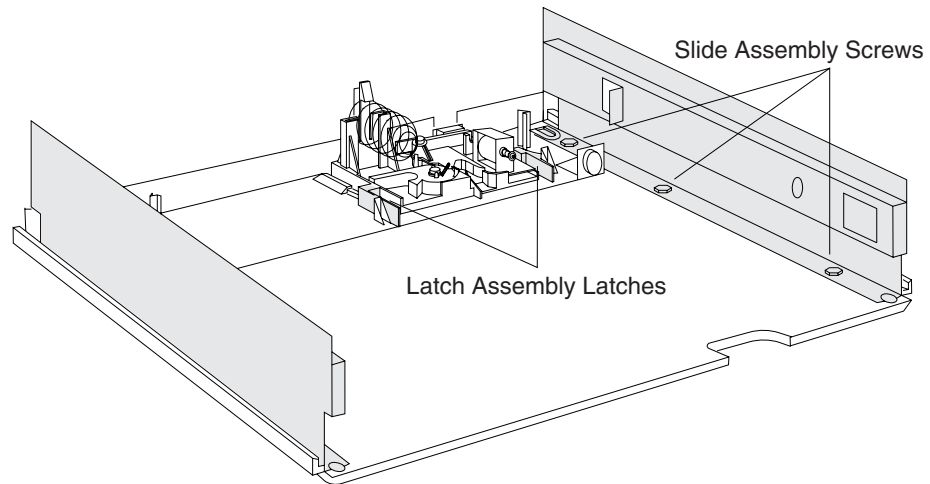


Figure 86. Removing cash-drawer slide assembly

To replace the cash-drawer slide assembly:

1. Place the slide assembly into the base so that the screw holes are aligned.
2. Insert the screws that secure the slides into the base.
3. Reinstall the latch assembly.
4. Reinstall the top cover if it was removed.
5. Reinstall the drawer.

Compact cash-drawer FRUs – removing and replacing

This section describes how to remove and replace compact cash-drawer-related FRUs.

Removing and replacing a compact cash drawer

To remove a compact cash drawer:

1. Disconnect the cash drawer cable.
2. Open the cash drawer and pull it all the way out.
3. Remove the till.
4. Facing the front of the drawer, use a coin or large screwdriver to move the drawer slide latches to the right until the drawer is released from the slide assembly (see Figure 87 and Figure 88). Lift the drawer out.
5. If you will be replacing the drawer, remove the lock assembly and install it in the new drawer (see “Removing and replacing the keylock assembly” on page 113).

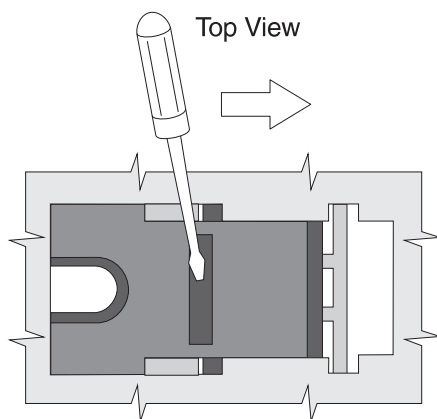


Figure 87. Releasing the drawer from the slide assembly

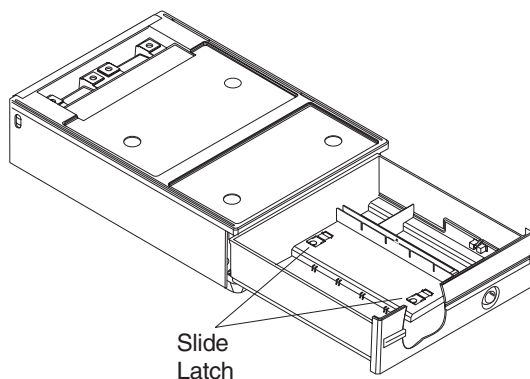


Figure 88. Removing and replacing the compact cash drawer

To replace the compact cash drawer, reverse this procedure.

Removing and replacing the slide latches

To remove the cash-drawer slide latches:

1. Disconnect the cash-drawer cable.
2. Remove the drawer (see “Removing and replacing a compact cash drawer”).
3. Remove the slide latch by sliding it all the way to the left (latched position).

4. Gently pry and press at the point shown in Figure 89.

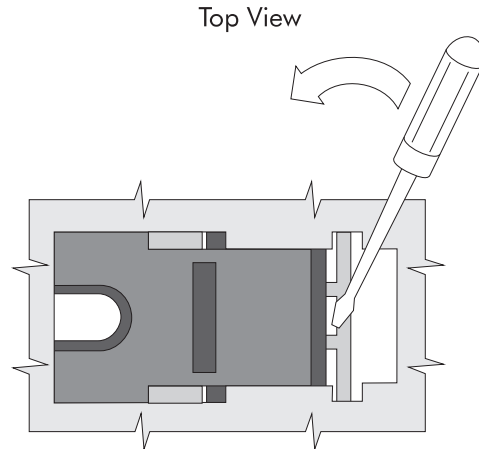


Figure 89. Removing and replacing the slide latches

To replace the latch, insert it through the opening in the bottom of the drawer and rotate it into position. Then push up from the bottom until it latches.

Removing and replacing the compact slide assembly

To remove the slide assembly:

1. Disconnect the cash-drawer cable.
2. Remove the cash drawer. See "Removing and replacing a compact cash drawer" on page 108.
3. Remove the three screws that secure the slide to the base and lift the slide assembly out. See Figure 90 on page 110.

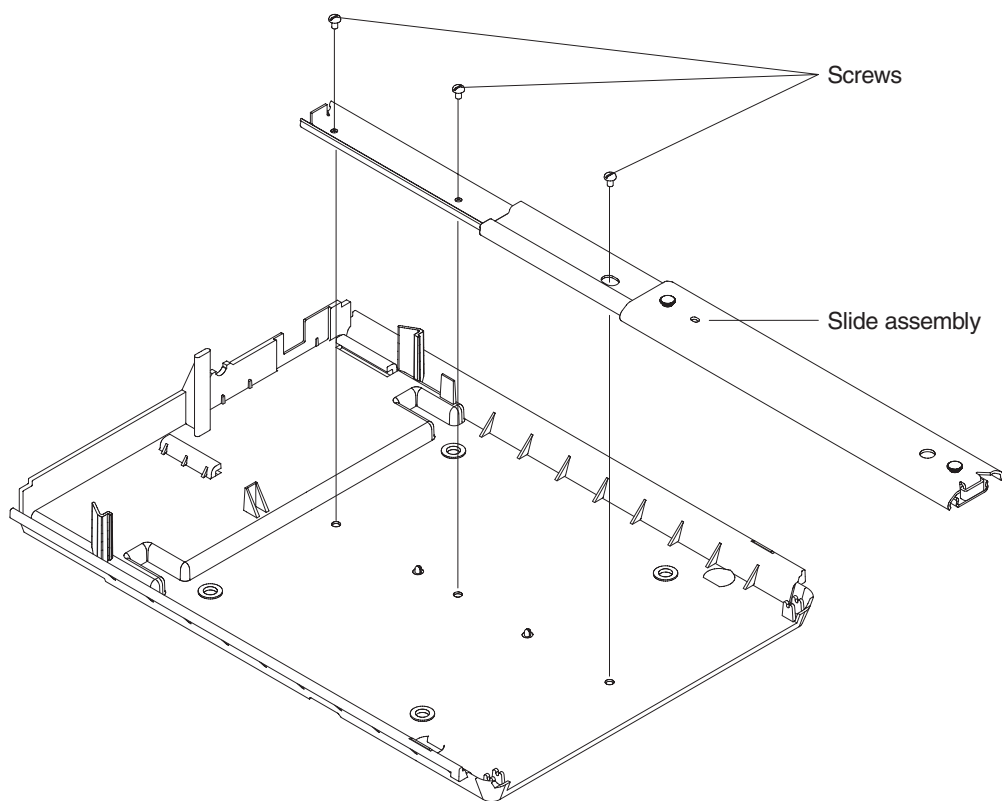


Figure 90. Compact cash drawer slide assembly

To replace the slide assembly:

1. To replace the slide assembly, place the slide assembly into the base so that the screw holes are aligned.
2. Insert and tighten the screws that secure the slide to the base.

Removing and replacing the rollers

To remove and replace the cash-drawer rollers:

1. Disconnect the cash-drawer cable.
2. Remove the cash drawer (see "Removing and replacing a compact cash drawer" on page 108).

Note: There are four rollers: two ball-bearing rollers at the front of the base and two plastic rollers at the rear of the drawer assembly (see Figure 91 on page 111). You should replace them all at the same time.

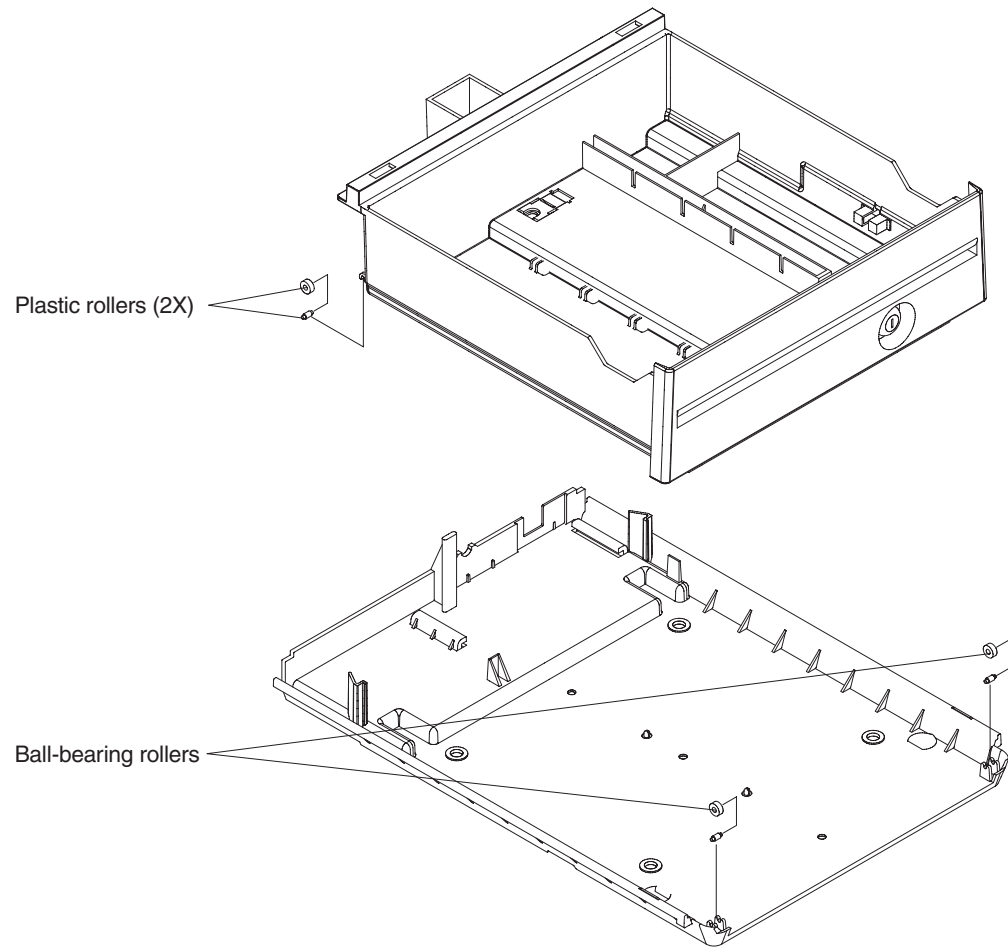


Figure 91. Compact cash drawer rollers

3. Each roller shaft snaps into two plastic posts. To replace the roller and shaft, gently pry the roller and shaft out. Snap the new set into position. Be sure to use the ball-bearing rollers on the base and the plastic rollers on the drawer.

Removing and replacing the coin-roll cutter

To remove the 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 (see Figure 92 on page 112).

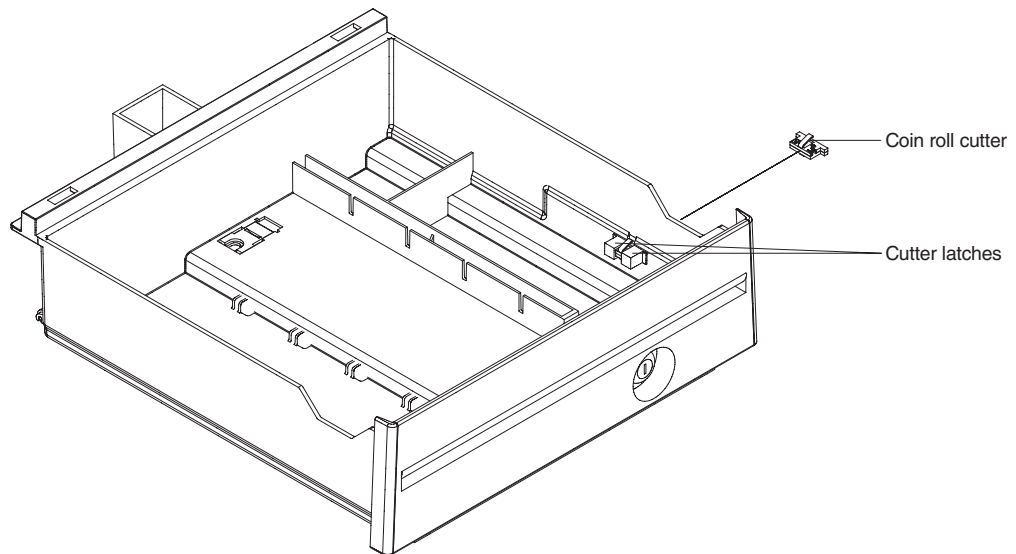


Figure 92. Removing the coin-roll cutter

4. To replace the cutter, snap the new cutter into position from the outside.
5. Reassemble.

Removing and replacing the security clip

To remove the security clip:

1. Disconnect the cash-drawer cable.
2. Open the rear cover of the cash drawer and remove the cash drawer (see "Removing and replacing a compact cash drawer" on page 108).
3. Remove the top cover (see "Removing and replacing the top cover" on page 113).
4. Remove the security clip (see Figure 93).

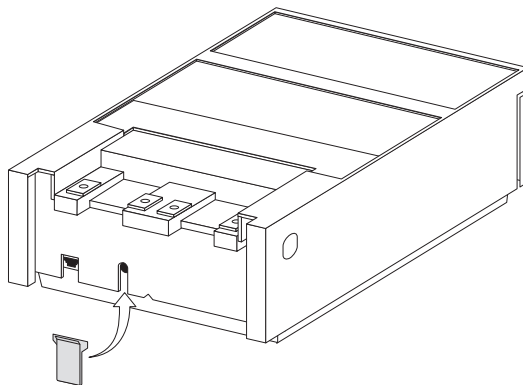


Figure 93. Removing the security clip (compact cash drawer)

To replace the security clip, reverse this procedure.

Common cash-drawer FRUs – removing and replacing

This section describes how to remove and replace compact cash-drawer-related FRUs that are common to both the full-size and compact cash drawers.

Removing and replacing the top cover

To remove the top cover of a cash drawer:

1. Disconnect the cash drawer cable from the rear of the cash drawer. (There may be other cables routed through the rear of the top cover.) Remove the rear panel by releasing it at the pivots. Separate the top cover and base without disturbing these cables. Disconnect cables from the terminal unit when necessary.
2. Open the rear panel by pushing the buttons at the upper rear corners of the cover.
3. Set the devices mounted on the top cover to the side.
4. Remove the drawer (see “Removing and replacing a full-size drawer” on page 105 or “Removing and replacing a compact cash drawer” on page 108).
5. To separate the top cover from the base, reach in from the front and push the cover latches outward while pushing them to the rear. The cover slides off toward the rear (see Figure 94).

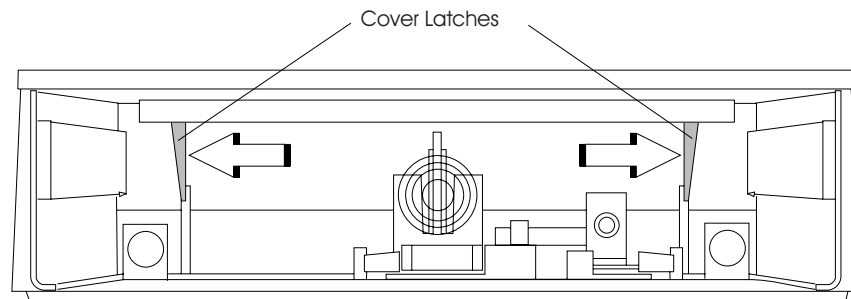


Figure 94. Removing and replacing the top cover

Removing and replacing the keylock assembly

To remove the keylock assembly:

1. Remove the cash drawer (see “Removing and replacing a compact cash drawer” on page 108 or “Removing and replacing a full-size drawer” on page 105).
2. Remove the lock retainer clip holding the keylock assembly on the inside of the drawer (see Figure 95 on page 114).
3. Slide the keylock assembly out of the front of the drawer.

Note: It might require some force to free the keylock assembly.

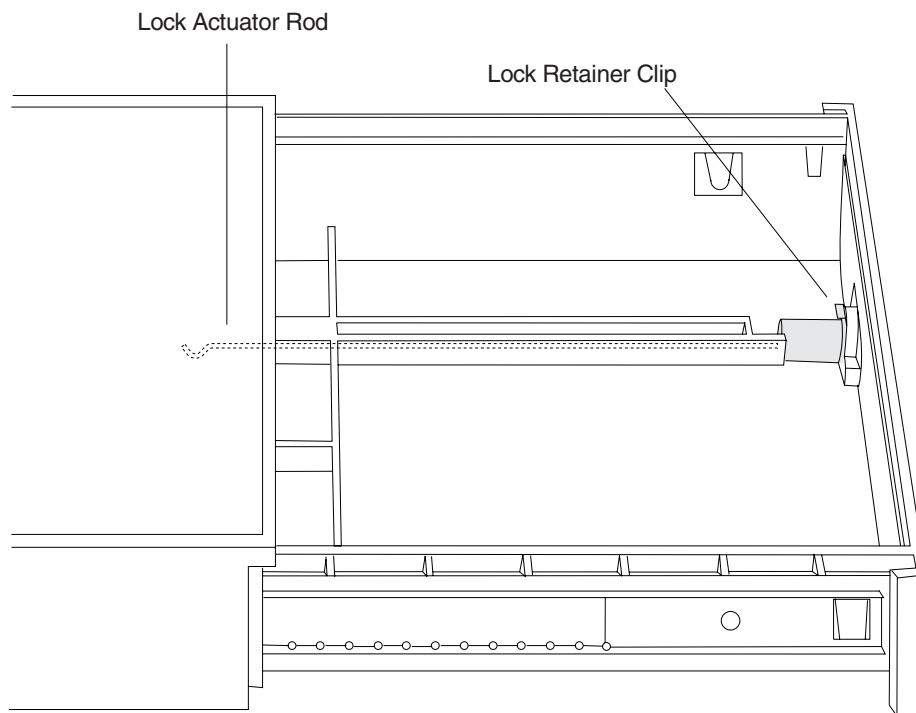


Figure 95. Keylock assembly

To replace the keylock assembly:

1. Ensure that the lock actuator rod is in the position shown in Figure 95.
2. Slide the lock assembly all the way into the opening in the front of the drawer, making sure that the end of the lock actuator rod is interlocked with the rear of the lock.
3. Reinstall the lock retainer clip.
4. Reinstall the drawer.

Removing and replacing the latch and sensor assembly

To remove the latch and sensor assembly:

1. Disconnect the cash-drawer cable from the connector at the rear of the cash drawer.
2. Remove the cash drawer (see “Removing and replacing a full-size drawer” on page 105 or “Removing and replacing a compact cash drawer” on page 108).
3. Reach in from the front and push the latch on each side of the latch assembly inward while pulling the assembly toward the front (see Figure 86 on page 107).
4. Slide the assembly out of the base.

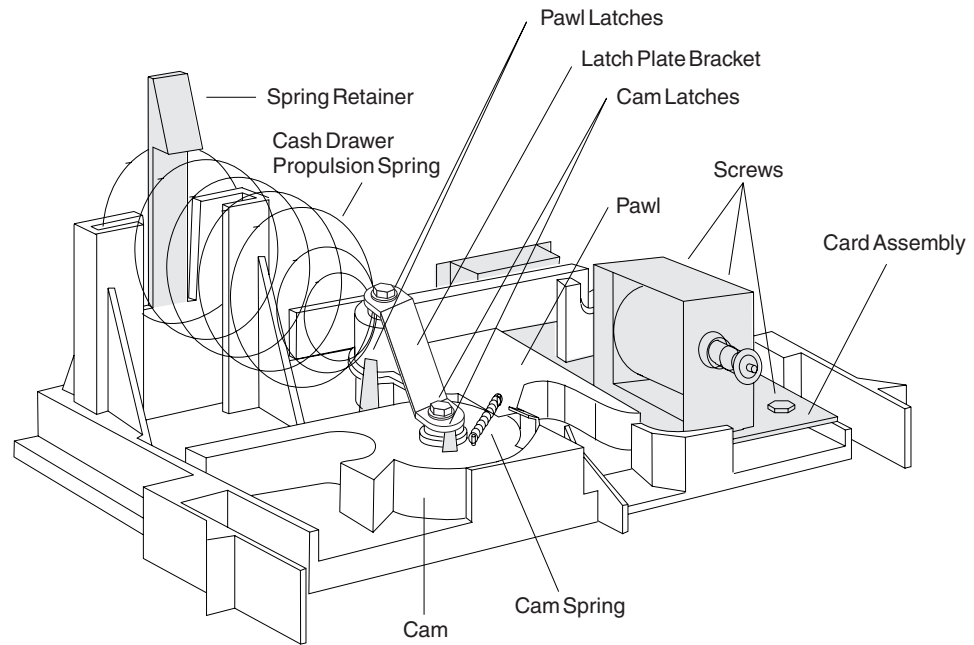


Figure 96. Cash-drawer latch and sensor assembly

To replace the latch and sensor assembly:

1. Slide the assembly into the base from the front and align it with the slots in the base. Push the assembly to the rear until it locks into place.
2. Make sure that the latching mechanism is unlatched.
3. Reinstall the drawer.
4. Reconnect the cash-drawer cable.

Removing and replacing components of the latch and sensor assembly

To remove the individual components of the latch and sensor assembly:

1. Disconnect the cash-drawer cable.
2. Remove the cash drawer (see "Removing and replacing a full-size drawer" on page 105 or "Removing and replacing a compact cash drawer" on page 108).
3. Remove the latch assembly (see "Removing and replacing the latch and sensor assembly" on page 114).
4. Remove the cash-drawer propulsion spring by pushing the spring retainer back, and then slide the spring up and out of its mounting slots (see Figure 96).
5. Remove the latch plate bracket by removing the screw in the cam pivot post and the screw in the pawl pivot post (see Figure 96).
6. Remove the cam spring by lifting the ends of the small posts on the cam and the pawl (see Figure 96).
7. Spread apart the two pawl latches that hold the pawl on the pivot post, while lifting the pawl off the post (see Figure 96).
8. Spread apart the two cam latches that hold the cam on the pivot post, while lifting the cam off the post (see Figure 96).
9. Remove the three screws that retain the card assembly and remove the card assembly (see Figure 96).

To replace the components of the latch and sensor assembly, reverse this procedure.

Removing and replacing the keylock insert

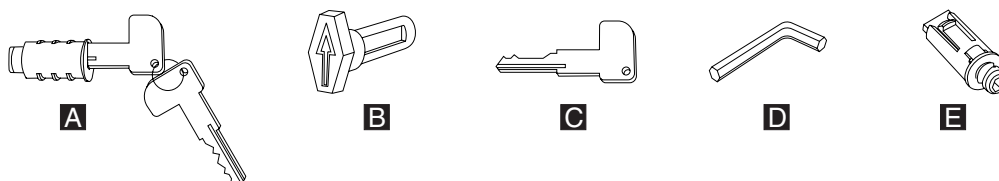


Figure 97. Lock accessories

- A** Lock insert and keys.
- B** Aligner. This tool is used to ensure that the slot at the bottom of the lock cylinder aligns with the lock insert being installed. For the cash drawer, the arrow on the aligner should point up. (The arrow points in different directions for other types of devices.)
- C** Brass installation-removal key.
- D** Blank lock installation handle.
- E** Blank lock insert.

To remove the keylock insert:

1. The lock must be in the unlocked position.
2. Insert the brass installation-removal key fully into the lock until it clicks into place.
3. Pivot the brass key slightly downward while pulling the lock insert out of the cylinder until the insert is disengaged from the cylinder.

Note: The brass key and the lock insert come out of the lock cylinder together. Pressing downward or sideways on the brass key as you pull makes it easier for the lock insert to come out along with the brass key.

4. Remove the brass key.

To replace the keylock insert:

1. The lock insert fits all the way into the lock cylinder only when the slot in the bottom of the cylinder and the lug on the end of the insert are aligned. If necessary, insert the aligner tool (see Figure 97) into the lock cylinder and rotate it until you feel it engage the slot at the bottom of the cylinder; then turn the aligner tool until the arrow points up.
2. Remove the key that came with the new lock insert.
3. Push the brass installation-removal key into the lock insert. Be sure the key is fully inserted.
4. With the brass installation-removal key still in the lock insert, push the lock insert fully into the lock cylinder.
5. While holding the lock insert in place with your finger, remove the installation-removal key.
6. Test the lock using the keys that came with the insert to be sure that the lock operates correctly.

Removing and replacing the blank lock insert

To remove the blank lock insert:

1. Insert the blank lock-insert handle into the blank keylock cylinder (see Figure 97).

2. Using the blank insert handle, turn the locking screw counterclockwise until the insert can be removed from the cylinder.
3. When replacing the blank lock insert, the lug on one end of the insert must be aligned with the slot in the bottom of the lock cylinder. Hold the blank lock insert so that the lug is aligned with the slot.
4. Push the blank lock insert into the empty lock cylinder until it is flush with the top of the lock cylinder.
5. Use the blank lock-insert handle to turn the locking screw clockwise until it reaches the bottom of the hole. Do not overtighten.

To replace the blank lock insert, reverse this procedure.

Distributed character display or APA display– disassembling

To disassemble a distributed character display:

1. Gently spread the arms of the yoke open slightly and slide the display out of the yoke. You can use a small screwdriver if necessary.

Note: For illustration, a distributed character display is shown. The procedure for an all points addressable character graphic display is the same.

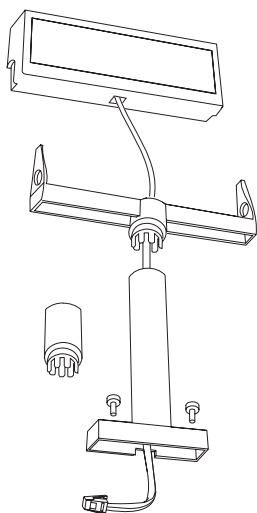


Figure 98. Removing and replacing the display

2. Unplug the display cable from the display.
3. Go to the appropriate non-keyboard integration tray or keyboard integration tray procedure to complete the installation of the distributed character display:
 - For a **non-keyboard integration tray** installation of a distributed character display, go to Step 4 on page 119.
 - For a **keyboard integration tray** installation of a distributed character display, go to Step 5 on page 120.

4. To install a distributed character display **D** on a **non-keyboard integration tray**, perform the following steps:
 - a. Remove the filler panels **A** and **B** and the rear modesty panel **C** from the integration tray, as shown in Figure 99.

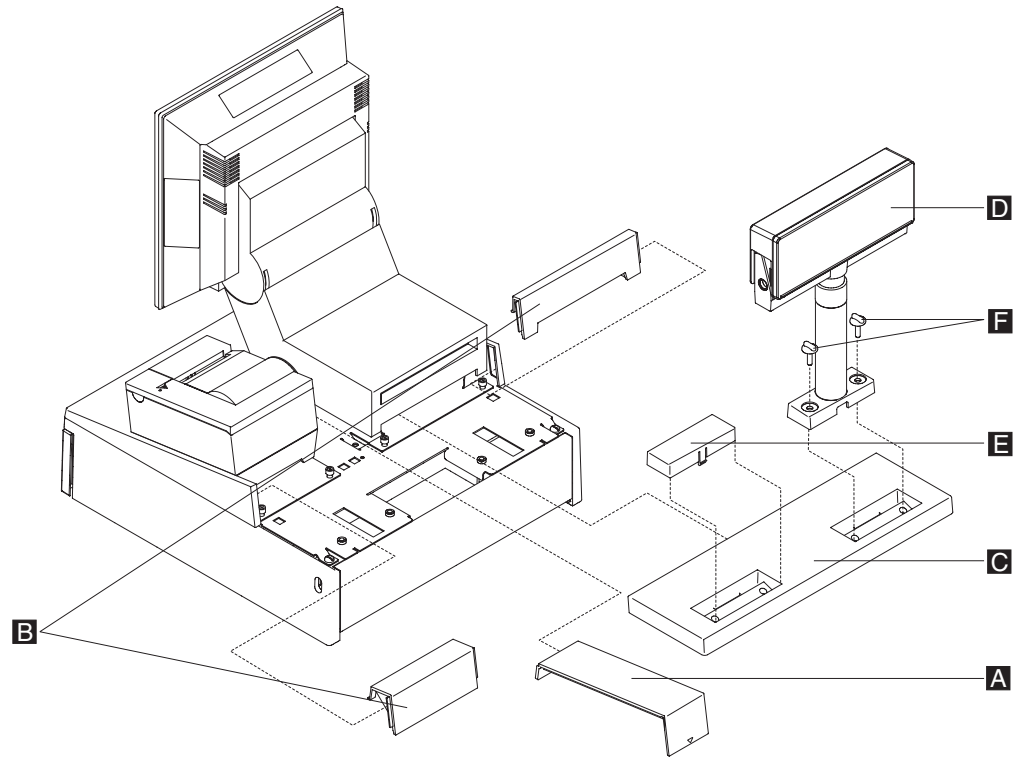


Figure 99. Attaching the distributed character display to the system unit

- b. Remove one of the two plugs **E** in the rear modesty panel. Figure 99 shows one plugged removed with the
- c. Route the character display cable through the hole in the modesty panel. You may need to lay the display on its side to connect the display cable to the system unit rear connector panel.
- d. Route the character display cable to the rear connector panel, passing it under the power supply bar on the base, and plug it into the 15-pin serial connector, as shown in Figure 20 on page 37.
- e. Reinstall filler panels **B** first then install **A** in Figure 99.
- f. Then attach the post, through the modesty cover **C** to the cash drawer, with 2 thumbscrews **F** and snap the entire unit into place at the rear of the tray.

5. To install a distributed character display on a **keyboard integration tray**, perform the following steps:
 - a. Route the character display cable through the hole behind mounting post **C** as show in Figure 100. You may need to lay the display on its side to connect the display cable to the system unit rear connector panel.

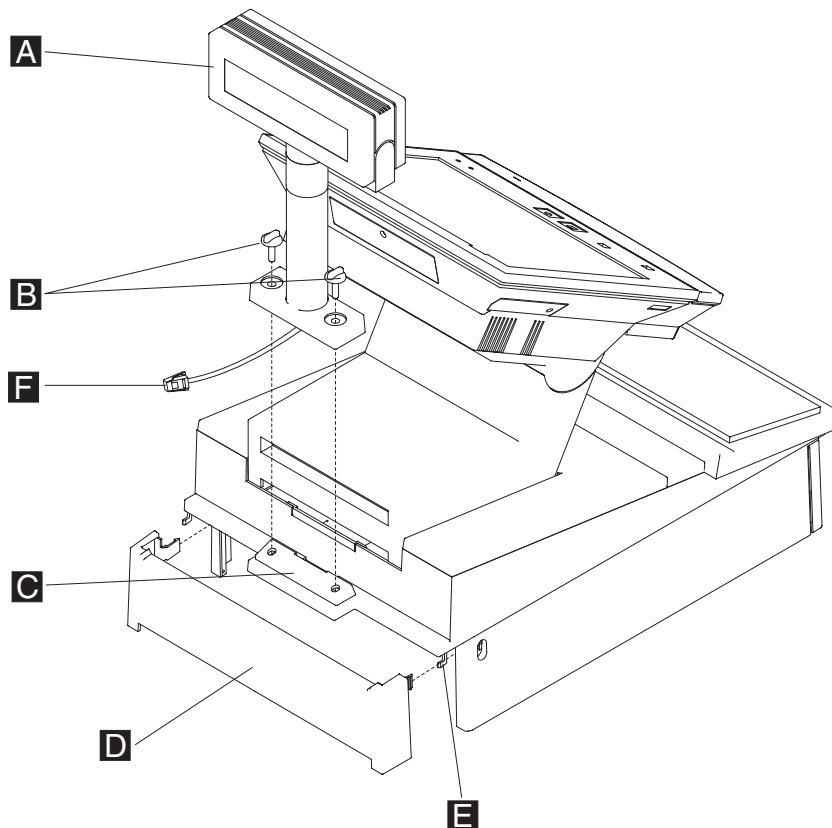


Figure 100. Installing the distributed character display onto the keyboard integration tray

- b. Route the distributed character display cable **F** to the rear connector panel, passing it under the power supply bar on the base, and plug it into the 15-pin serial connector, as shown in Figure 20 on page 37.
 - c. Attach the distributed character display **A** to the cash drawer mounting post **C** with two thumbscrews **B** and snap the entire unit into place at the rear of the tray, as show in Figure 100.

Note: The character display default baud rate is 9 600 bps, 8 data bits, no parity bit, and 1 stop bit (9600–8–N–1).

IBM 4610 SureMark printers – removing and replacing

The IBM 4610 SureMark Single-Station Model TF6 or TF7 (4610 TF6 or TF7) are the smaller in size than the 4610 SureMark TG3, TG4 and TG5 printers. For detailed information about these printers, see the *IBM 4610 SureMark Point-of-Sale Printers User's Guide*.

The 4610 TF6 or TF7 can be installed as a freestanding unit, attached to a countertop integration tray, attached to a wall-mounting plate, or attached to a full-size cash drawer integration tray. Attaching the 4610 TF6 or TF7 to a non-keyboard integration tray is different than attaching it to a keyboard integration tray:

- For the **non-keyboard integration tray**, the 4610 SureMark TF6 or TF7 is attached to a *mounting plate* and then attached to the non-keyboard integration tray.
- For the **keyboard integration tray**, the 4610 SureMark TF6 or TF7 is placed into a plastic printer base and then set on the keyboard integration tray.

Figure 101 shows the 4610 SureMark Single-Station TF6 or TF7 printer connectors.

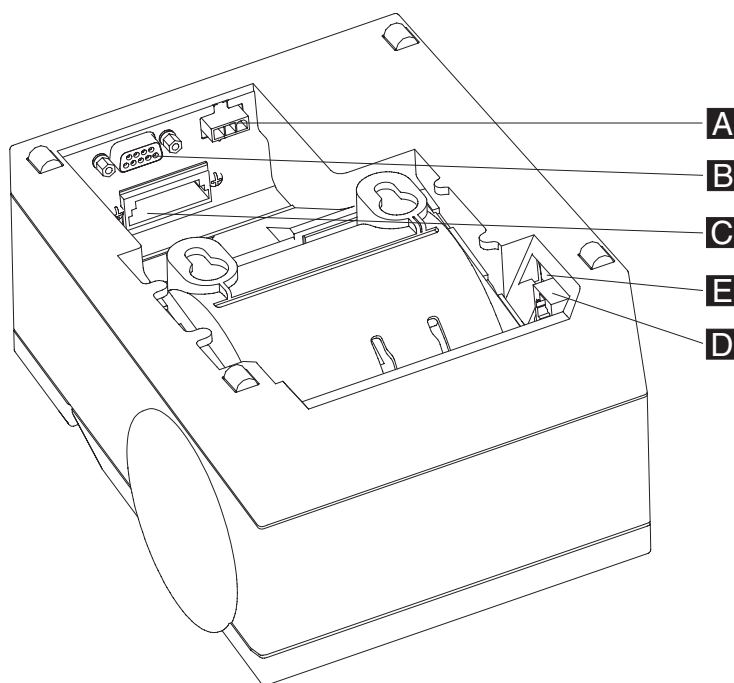


Figure 101. 4610 SureMark Single-Station TF6 or TF7 printer connector locations

- | | |
|---|--------------------------------|
| A Power supply port (RS-232 only) | D Cash drawer connector |
| B RS-232 port | E RS-232 mode switch |
| C RS-485 port (Not used on the SurePOS 500/600 Series) | |

4610 SureMark – removal

1. Switch OFF the power at the SurePOS 500/600 Series.
2. Remove the SurePOS 500/600 Series base cover (see “Base cover and rear cover for the SurePOS 500/600 Series– removing and replacing” on page 32).
3. Remove the power supply (see “Power supply – removing and replacing” on page 34) to get access to the system unit rear connector panel. See Figure 20 on page 37 for rear connector port assignment.
4. If the printer is mounted on a cash drawer integration tray or a countertop integration tray, remove the filler panels to get access to the printer mounting plate. Untighten the two thumb screw on the mounting plate to the tray.
5. Remove the 4610 SureMark printer from the integration tray.
 - a. For the 4610 SureMark TG3, TG4 or TG5, lift the printer up and off the integration tray.
 - b. For the 4610 SureMark TF6 or TF7 printer on a **non-keyboard integration tray**, remove the mounting plate from the printer. See Figure 102 for details.

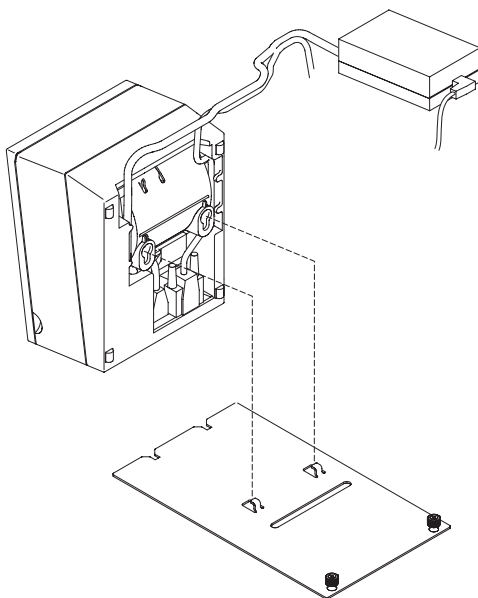


Figure 102. Detaching the 4610 SureMark TF6 printer mounting plate for the non-keyboard integration tray

- c. For the 4610 SureMark TF6 or TF7 printer on a **keyboard integration tray**, lift the printer up and off the printer base. See Figure 106 on page 126 for details.
6. Disconnect the printer cable.
 7. See “4610 SureMark – replacing” on page 123 for information on replacing the printer.

4610 SureMark – replacing

Use the following instructions for replacing the 4610 SureMark printer:

1. Check the printer RS-232 mode switch settings, which is near the rear cable connections. See **E** in Figure 101 on page 121 for switch location. For switch settings, see the *IBM 4610 SureMark Point-of-Sale Printers User's Guide*.
2. Connect and route the RS-232 communication cable **A** and the power supply cable **B** as shown in Figure 103.

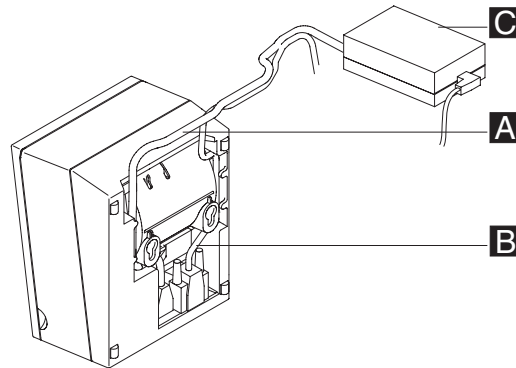


Figure 103. Attaching and routing the RS-232 and power supply cables to the printer.

3. Connect any other signal cables for I/O devices to the correct ports.
4. Go to the appropriate 4610 SureMark printer installation procedure for your SurePOS 500/600 Series configuration:
 - a. To install a **free-standing** 4610 SureMark printer, route the cables to the rear connector panel on the SurePOS 500/600 Series system unit, passing it through the hole in the base, and plug it into one of the three standard serial ports, as shown in Figure 20 on page 37.
 - b. To install the printer on a **non-keyboard integration tray**, go to “4610 SureMark printer installation on a non-keyboard integration tray” on page 124.
 - c. To install the printer on a **keyboard integration tray**, go to “4610 SureMark printer installation on a keyboard integration tray” on page 126.

4610 SureMark printer installation on a non-keyboard integration tray

Install the 4610 SureMark printer on the **non-keyboard integration tray**, by performing the following steps:

1. Attach the printer cables to the printer.
2. Attach the printer mounting plate to the bottom of the printer. The mounting plate slides into the two bottom slots of the printer, as shown in Figure 104.

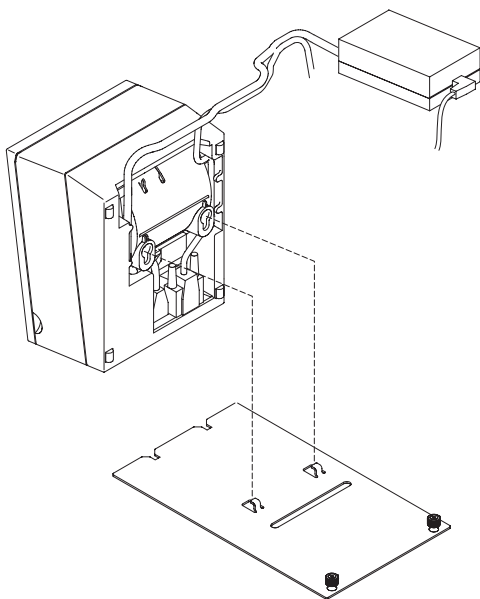


Figure 104. Attaching the 4610 SureMark printer mounting plate for a non-keyboard integration tray

3. Mounting the printer to an non-keyboard integration tray is the same for countertop or cash drawer. With the mounting plate attached to the printer, slide the front of the printer mounting plate into the slots located toward the front of the integration tray. Secure the printer by tightening the two thumb screws on the mounting plate to the tray.
4. Route the RS-232 cable **A** to the rear connector panel of the system unit as show in Figure 105 on page 125 and plug it into one of the three standard serial ports on the system unit.
5. Route the ac power cord **B** toward the system and out through the hole in the integration tray, as shown in Figure 105 on page 125.

Note: When routing the printer and power cables, make sure that the cables are routed inside the mounting plate screws to enable correct installation of the filler panels.

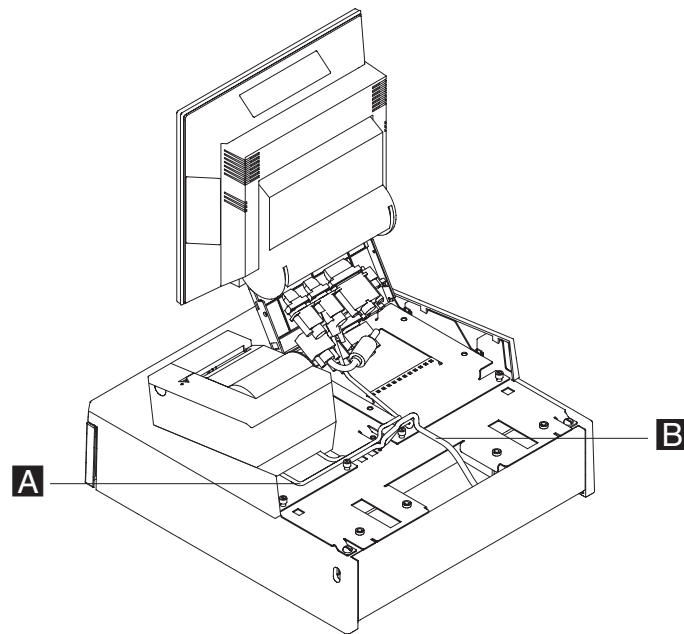


Figure 105. 4610 SureMark printer cable routing on a non-keyboard integration tray

4610 SureMark printer installation on a keyboard integration tray

Install the 4610 SureMark printer on the **keyboard integration tray**, by performing the following steps:

Note: See the *4610 SureMark Point-of-Sale Printers User's Guide* for detailed information about printer switch settings and cabling.

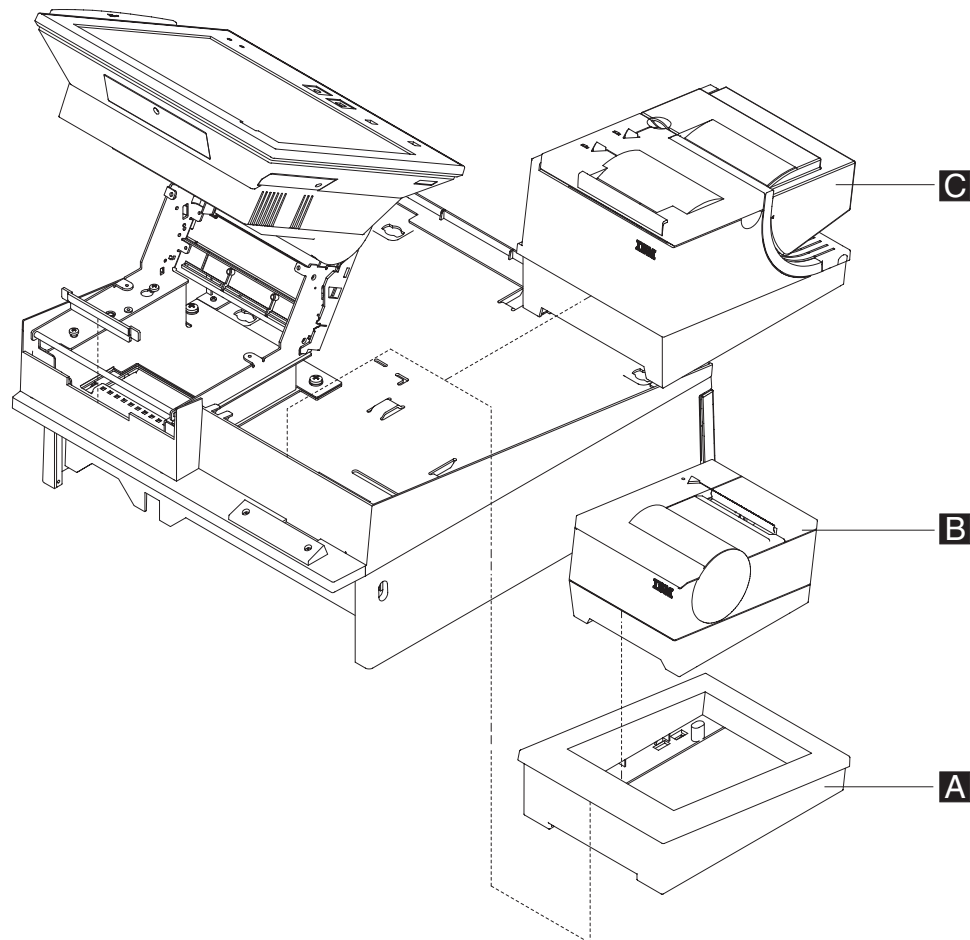


Figure 106. Installing the 4610 SureMark printer on the keyboard integration tray

Table 12. 4610 SureMark printer on a full-size keyboard integration tray legend

A Printer stand for the 4610 Models TF6 and TF7 printers	C 4610 Models TG3, TG4 and TG5 printers
B 4610 Models TF6 and TF7 printers (small footprint)	

1. Install the printer cables and route the cables as shown in Figure 103 on page 123.
2. For the **small-footprint 4610 SureMark Models TF7 or TF7 printers B**, first insert the plastic printer base **A** onto the integration tray and then place the printer into the printer base.
3. For the **4610 SureMark Model TG3 and TG4 printers**, place the printer directly onto the keyboard integration tray.

Removing IBM 4820 SurePoint Solution

The SurePOS 500/600 provides dual-display capability. Information on the SurePOS 500/600 display can be completely different than information displayed on an attached display. The SurePoint Solution (Machine Type: 4820, Models 4FT and 4FD) can be integrated onto the base of the SurePOS 500/600, integrated on an integration tray of a SurePOS 500/600 or attached as a standalone distributed model. Other external VGA device can be connected to the SurePOS 500/600 Series 15-pin port.

Distributed 4820 SurePoint Solution Installation

To remove a distributed 4820, follow the instructions provided in the *IBM 4820 SurePoint Solution Installation and Service Guide* and install the 4820 SurePoint Solution display.

Integrated 4820 SurePoint Solution Installation

The integrated 4820 can be mounted to a free-standing SurePOS 500/600 or on a full-size or compact keyboard integration tray. Go to the removal procedure for your configuration:

- For a 4820 mounted to a **free-standing SurePOS 500/600**, go to “4820 removal on a free-standing SurePOS 500/600”.
- For a 4820 mounted to a **full-size keyboard integration tray on a (cash drawer or countertop) or a compact-size keyboard integration tray** on a compact cash drawer, go to “4820 SurePoint Solution Model 4FT or 4FD removal on keyboard integration tray” on page 130.

4820 removal on a free-standing SurePOS 500/600

The 4820 can be mounted to a free-standing SurePOS 500/600 that is attached to its base foot.

1. Switch OFF the power at the SurePOS 500/600.
2. Remove the SurePOS 500/600 base cover (see “Base cover and rear cover for the SurePOS 500/600 Series— removing and replacing” on page 32) and remove the power supply (see “Power supply – removing and replacing” on page 34) to access the SurePOS 500/600 rear connector panel.
3. Remove the 4820 filler panels **D**, **E**, and **F** as shown in Figure 107 on page 128.

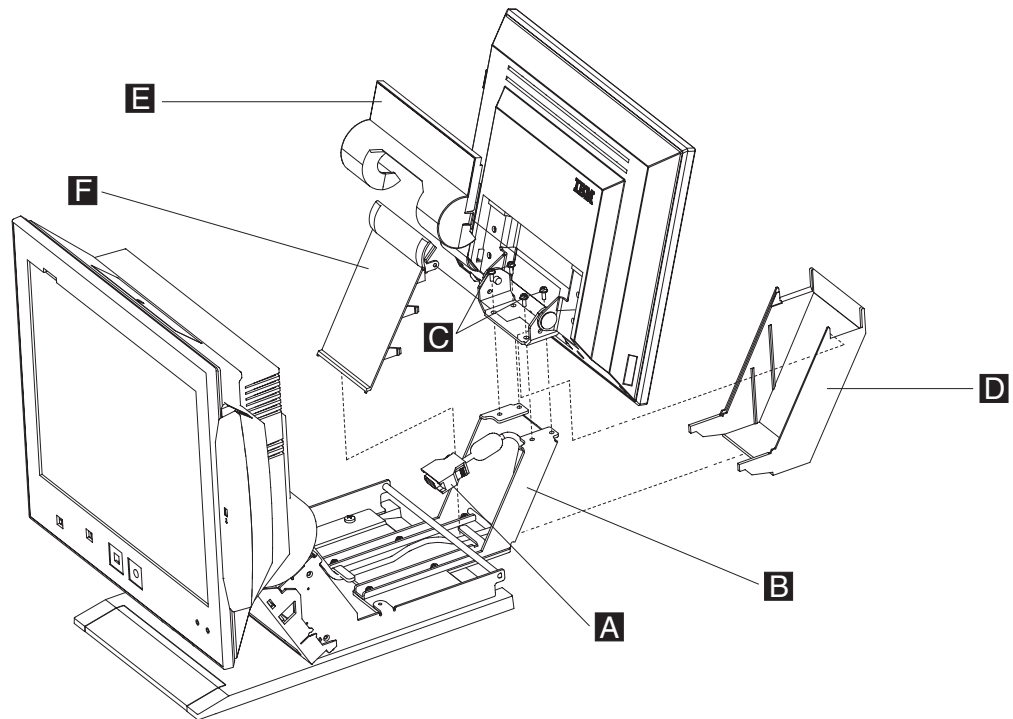


Figure 107. 4820 base plate being attached to a free-standing SurePOS 500/600 base plate

4. Disconnect the 4820 display cable **A** from the external video connector on the 4820 and from the rear connector panel of the SurePOS 500/600, as show in Figure 107.
5. Remove the 4820 display from the mounting bracket **B** by removing four screws **C**.

6. Remove the 4820 base plate **C** from the SurePOS 500/600 base plate **D** by removing the two screws **B** (that secured with a washer and nut) and the two screws **A**, as show in Figure 108.

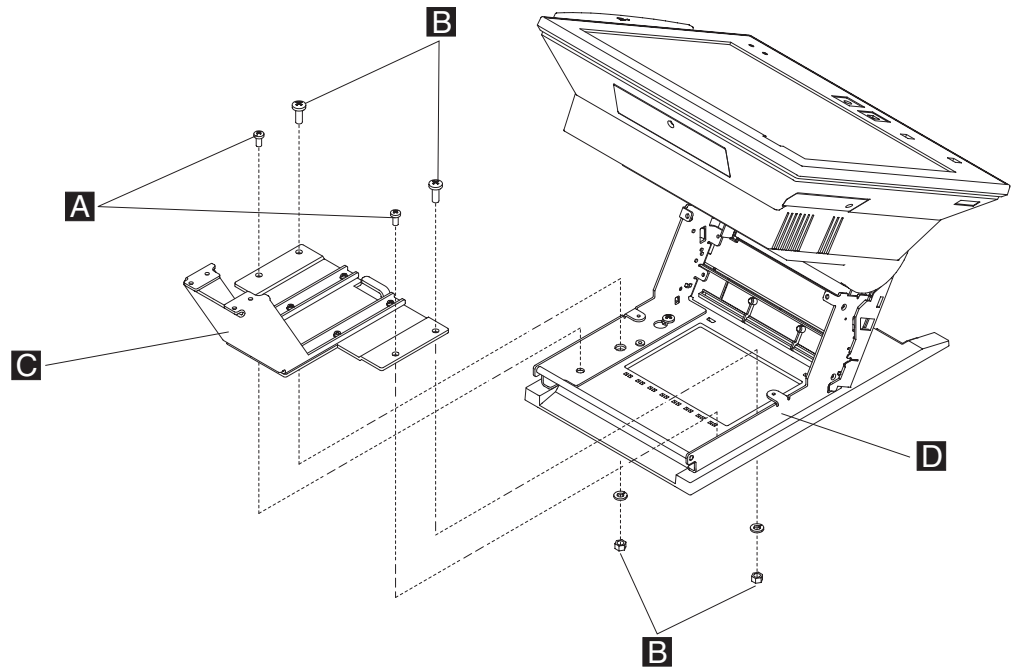


Figure 108. Removing the 4820 SurePoint Solution display to the base plate

7. Reassemble in reverse order.

4820 SurePoint Solution Model 4FT or 4FD removal on keyboard integration tray

Perform the following step to remove the 4820 SurePoint Solution to a full-size integration tray mounted on a countertop or a cash drawer or to a compact integration tray mounted to a cash drawer. The following procedure shows the 4820 being mounted to a full-size cash drawer. The other mounting configurations are similar.

1. Switch OFF the power at the SurePOS 500/600.
2. Remove the SurePOS 500/600 base cover (see “Base cover and rear cover for the SurePOS 500/600 Series— removing and replacing” on page 32) and remove the power supply (see “Power supply – removing and replacing” on page 34) to access the SurePOS 500/600 rear connector panel.
3. Remove 4820 filler panels **D** , **E** , and **F** as show in Figure 109.

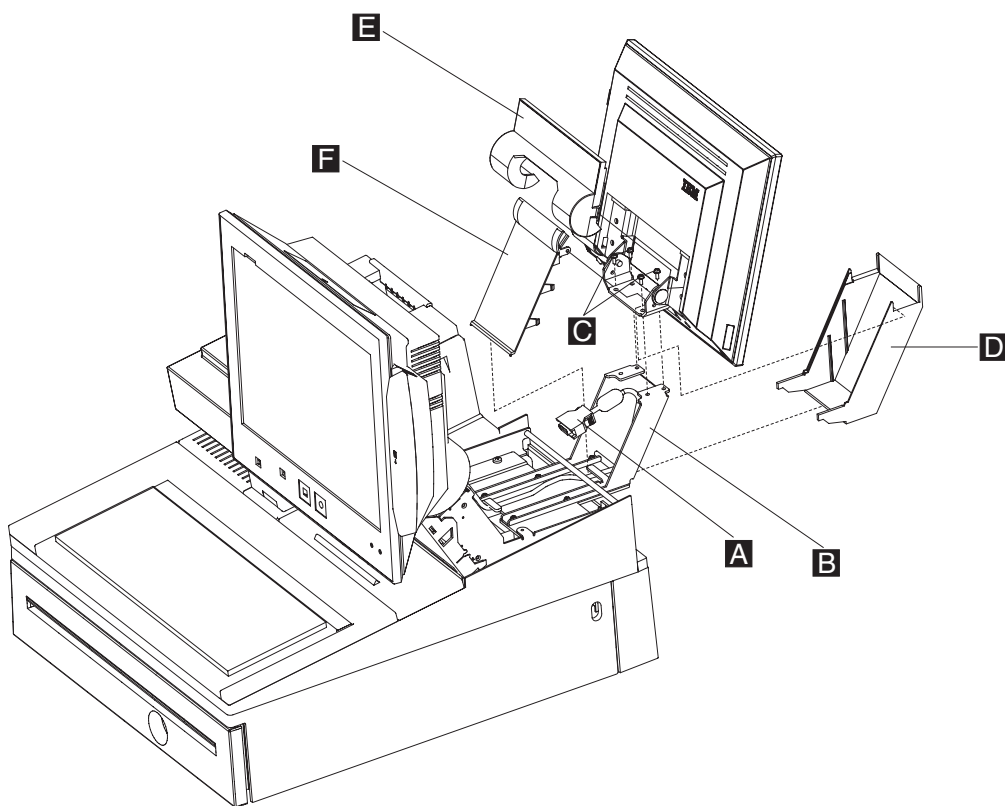


Figure 109. Removing the 4820 SurePoint Solution cable and covers

4. Disconnect the 4820 display cable **A** from the external video connector on the 4820 and from the rear connector panel of the SurePOS 500/600, as show in Figure 109.
5. Remove the 4820 display from the mounting bracket **B** by removing four screws **C** .

6. Remove the 4820 base plate **B** from the SurePOS 500/600 base plate by removing the four screws **C**, as shown in Figure 110.

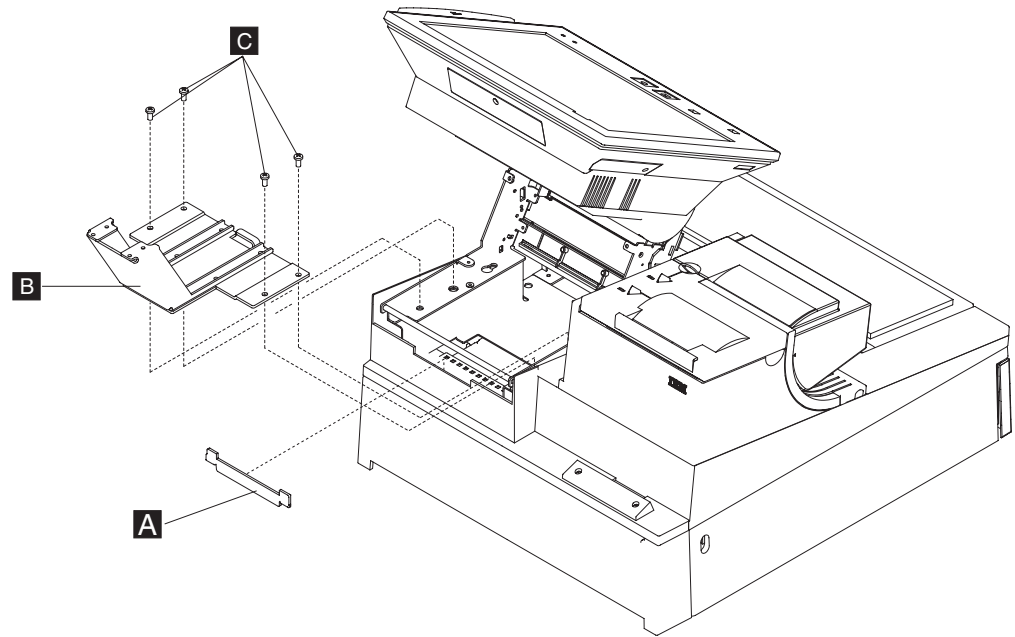


Figure 110. 4820 SurePoint Solution base plate removal from the keyboard integration tray

7. Reassemble in reverse order.

Note: If you are permanently removing the 4820, you must install the small filler panel **A** located at the rear of the keyboard integration tray, as shown in Figure 110.

Chapter 5. Installing SurePOS 500/600 with Wall Mount feature options

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Connecting cables to the tailgate connector panel, wall mounted	151

The SurePOS 500/600 with Wall Mount feature is available on Models 521, 531, 541, 551, 561 and 651. There are hardware differences between the standard SurePOS 500/600 and the SurePOS 500/600 with Wall Mount feature. The following is a list of procedures that are **specific** to the wall mount system.

Note: The wall mount plate is the customers responsibility to install.

- **Removing a system from a wall mount plate**, see “Removing the SurePOS 500/600 with Wall Mount feature from the wall mount plate” on page 134.
- **Attaching a system to a wall mount plate**, see “Attaching the system to the wall mount plate” on page 135.
- **Cover removals**, see “Wall mount covers removal and replacing” on page 138.
- **Power supply removal**, see “Wall mount power supply removal and replacement” on page 141.
- **Hard disk drive removal**, see “Wall mount hard-disk drive (HDD) or CompactFlash replacement” on page 143.
- **Memory upgrades**, see “Wall mount memory removal and installation” on page 145
- **Tailgate removal**, see “Connector panel (tailgate) – removal and replacing” on page 147
- **Hinge bracket removal**, see “Hinge assembly removal and replacement” on page 149
- **Installing cables and tie-wraps**, see “Connecting the cables and using cable-ties” on page 151

For removing other options and features on the SurePOS 500/600 with Wall Mount feature, use the same procedures provided for the non-wall mount models.

Removing the SurePOS 500/600 with Wall Mount feature from the wall mount plate

For memory upgrades, connector panel (tailgate) assembly replacement, and hinge assembly replacement, you will need to remove the SurePOS 500/600 with Wall Mount feature from the wall mount plate to get access to those components. Perform the following steps to remove the system from the wall mount plate:

1. Switch OFF the power at the system. Unplug the power cord from the external power source.
2. If installed, disconnect the keyboard, mouse, diskette drive, and headphones from the front of the display.
3. Remove the base cover as described at “Wall mount covers removal and replacing” on page 138.
4. Unplug the ac power cord from the system at the power supply. “Wall mount power supply removal and replacement” on page 141 shows the location of the power supply.
5. Remove the power supply, see “Wall mount power supply removal and replacement” on page 141.
6. Disconnect all cables from the I/O tailgate connector.

Note: Label the cables to make sure that the cables are reconnected to the same ports when reattached.

7. Loosen the two wall mount wall bracket screws **B** in Figure 111.
8. Carefully lift the system up and off the two wall mount plate support posts **A** and place the system on a clean flat surface.

Note: When lifting the system up, the wall mount plate support posts must clear the interlocking keyholes on the system base before lifting it off the wall mount plate.

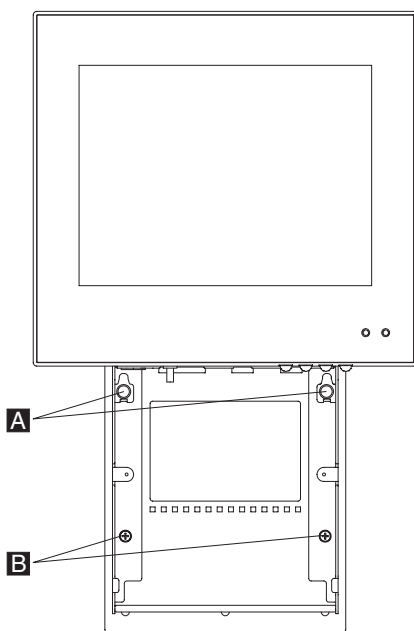


Figure 111. Loosening the wall mount plate screws

Attaching the system to the wall mount plate

1. With two hands, carefully support and lift the system up and align points **A** and **B**, on both sides of the base bracket, with the wall mount plate as shown in Figure 112.

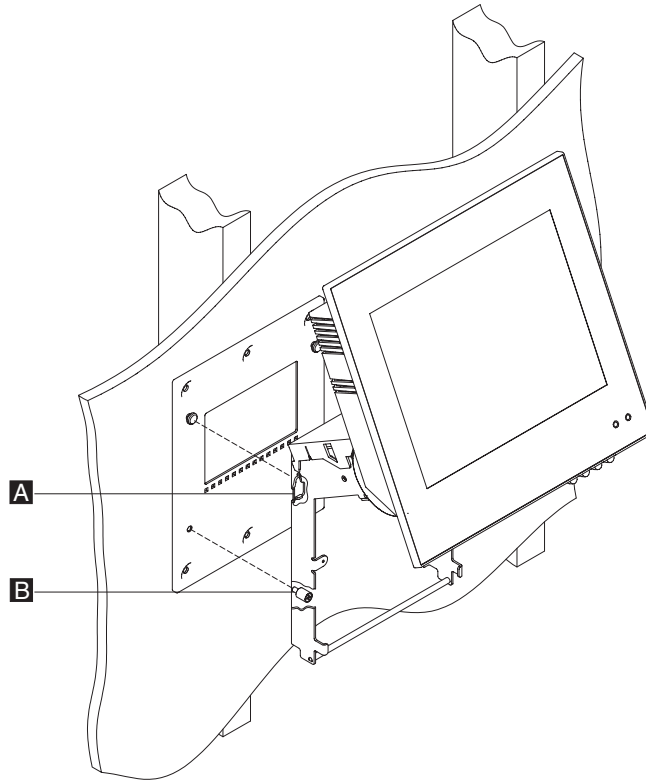


Figure 112. Aligning the base bracket to the wall mount plate support post

2. Position the two base bracket interlocking keyholes over the two wall mount plate support post **A** and set the system on the support post until they are locked into the keyhole.
3. Tighten the two base bracket screws **B** to secure the system to the wall mount plate.

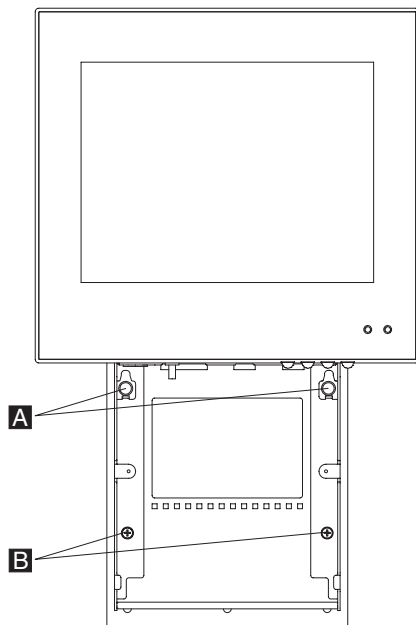


Figure 113. Securing the system to the wall mount plate

4. Route and install cables, see “Connecting the cables and using cable-ties” on page 151
5. Reinstall power supply, see “Wall mount power supply removal and replacement” on page 141.
6. Route the ac power cord under the power supply support bar.
7. Connect the power connector cable **B** to the power supply as shown in Figure 114.
8. Plug the ac power cord **A** to the power supply as shown in Figure 114.

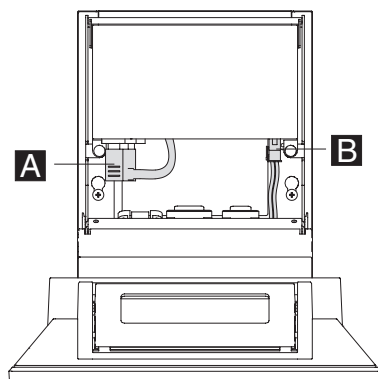


Figure 114. Location of power supply cords

9. Reinstall covers, see “Wall mount covers removal and replacing” on page 138.
10. Plug the ac power cord into an ac outlet.

11. Switch ON the power to your system and verify that it is operating correctly by checking the indicator lights (LEDs) on the front of the touch screen.

Status/Power Indicator

On: Logic working correctly. Source ac power present and within tolerance.

Off: System board defective or power is off

Blinking: Logic malfunction or system in suspend mode

HDD Indicator

On HDD is reading or writing

Off: No HDD activity

Blinking: HDD is reading or writing

Figure 115 shows the front indicators of the SurePOS 500/600 Model 521 display. Looking at the exploded view, the symbols from left to right are contrast, brightness, status/power and hard disk drive indicators.

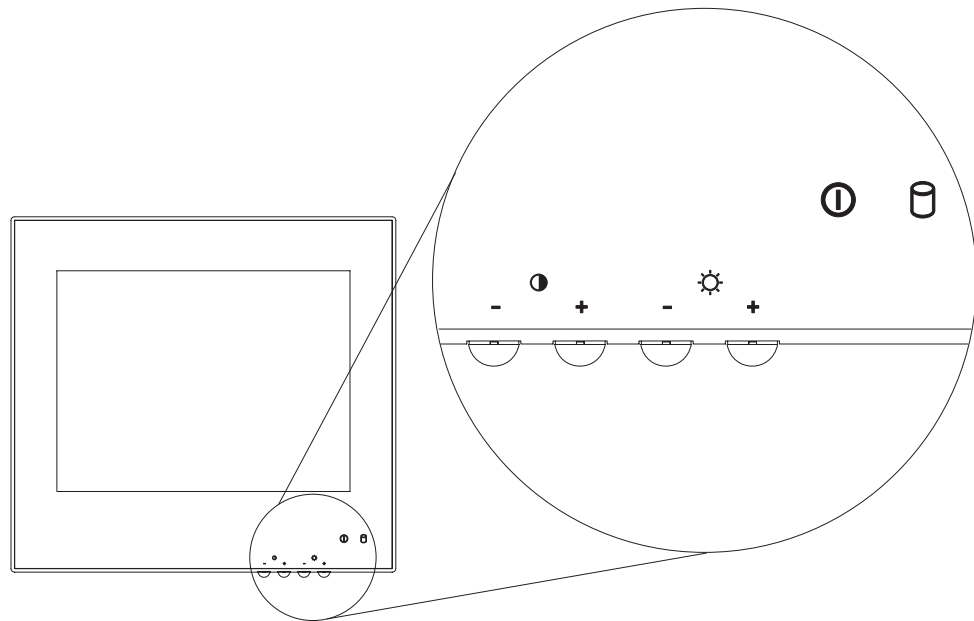


Figure 115. Locations of front panel display indicators

Models 541, 542, 561, and 562 do not have the contrast buttons.

Wall mount covers removal and replacing

SurePOS 500/600 with Wall Mount feature has four covers that can be removed. If the system is wall mounted, the base cover **A** must be removed in order to remove the system from the wall mount plate. The rear cover and back throat cover will be removed to get access to the hard disk drive and memory. You must remove all four covers to replace the control panel tailgate assembly or the hinge assembly. Figure 116 shows the four covers that can be removed.

- Base cover **A**
- Front throat cover **B**
- Rear cover **C**
- Back throat cover **D**

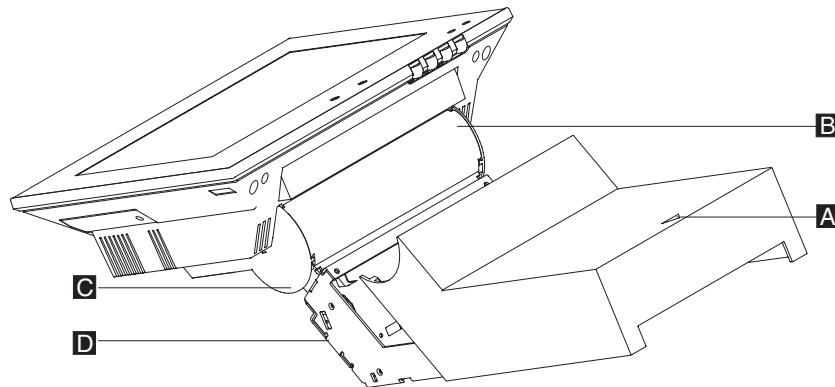


Figure 116. SurePOS 500/600 with Wall Mount feature covers

Use the following procedures to remove the covers:

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Facing the front of the system, remove the base cover by lifting the bottom of the cover **A** up from the base. Rotate the cover upward and away from the system until it is free.

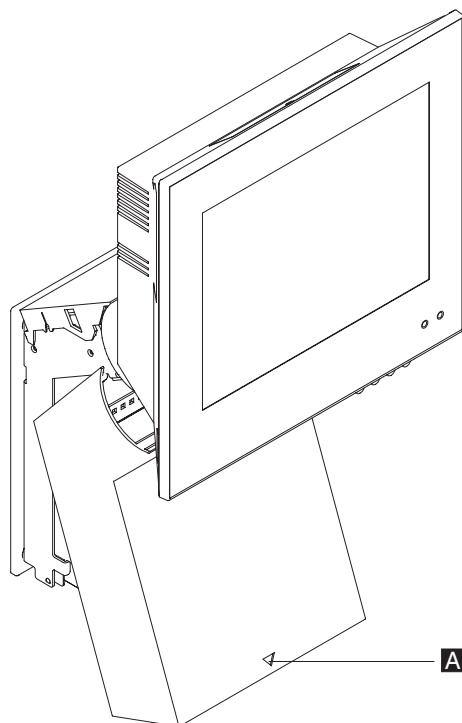


Figure 117. Removing the base cover when wall mounted

3. To reinstall, angle the base cover **A** as shown in Figure 117 and slide the cover up and onto base until it latches.
4. To get access to the hard disk drive and memory, first remove the back throat cover **A** and then the rear cover **B**. To remove the back throat cover, pull out on the four tab points **C** and lift it away. To remove the rear cover, press in on tabs **D** on each side of the rear cover and slide the rear cover back and up to remove.

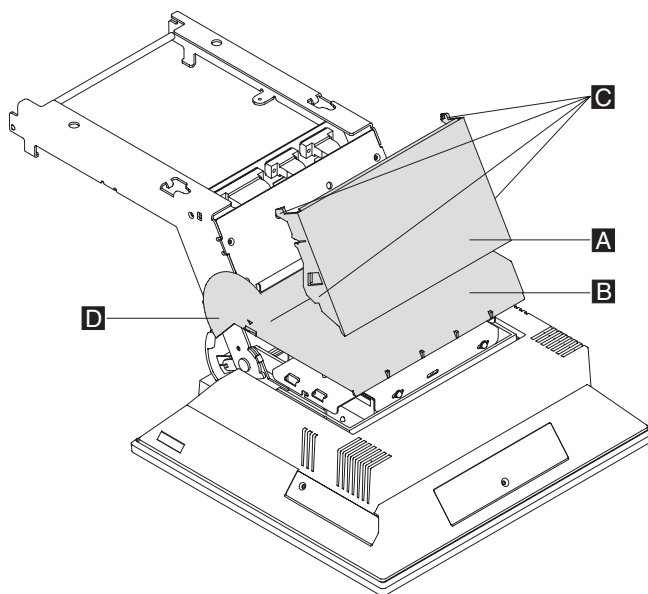


Figure 118. Removing the back throat cover and rear cover

Reinstalling the front throat cover

These instructions show how to reinstall the front throat cover. Figure Figure 119 show a cut-away view off the rear cover and an exploded view of the front throat cover latched to the rear cover. The following procedure can be used on a SurePOS 500/600 with Wall Mount feature mounted or not mounted:

1. Install the rear cover **A**.
2. From the front of a wall mounted system or if it is off the wall, slide the front throat cover **B** into two slots **D** on the rear cover and pivot it onto the two studs **C**.

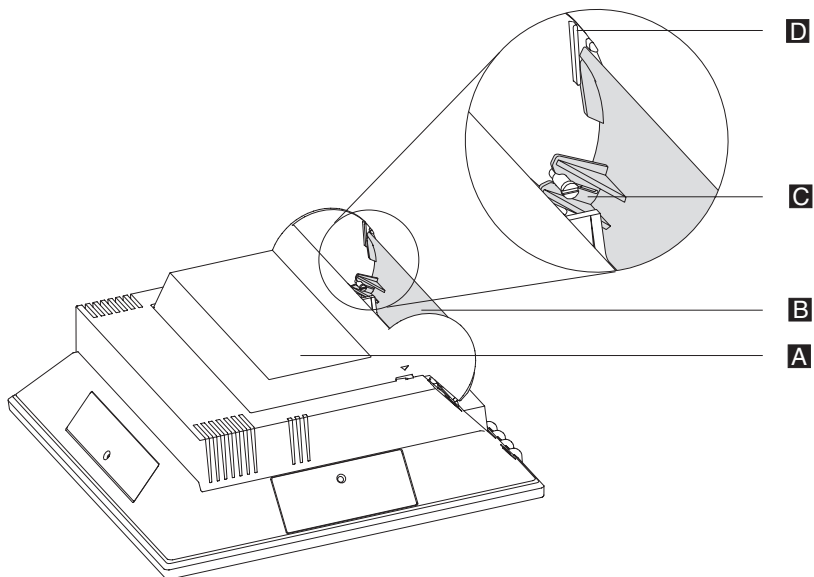


Figure 119. Attaching the front throat cover

Wall mount power supply removal and replacement

This topic describes how to remove and replace the power supply on the SurePOS 500/600 with Wall Mount feature models. The power supply must be removed to get access to the tailgate assembly for cabling.

1. Switch OFF the power to the system. Unplug the power cord from the external power source.
2. Remove the base cover as described at “Wall mount covers removal and replacing” on page 138.
3. Unplug the ac power cord **A** and the power connector cable **B** from the power supply by pulling out on the tab on the power connector and pull the connectors apart. Figure 120 shows the location of the power supply cables.

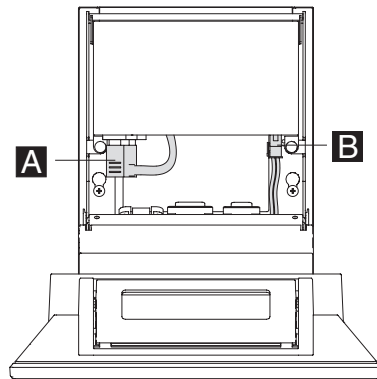


Figure 120. Power supply cable locations

4. Loosen the two power supply captive thumb screws **A** as shown in Figure 121 on page 142. The power supply has a mechanical stop that prevents it from falling out.

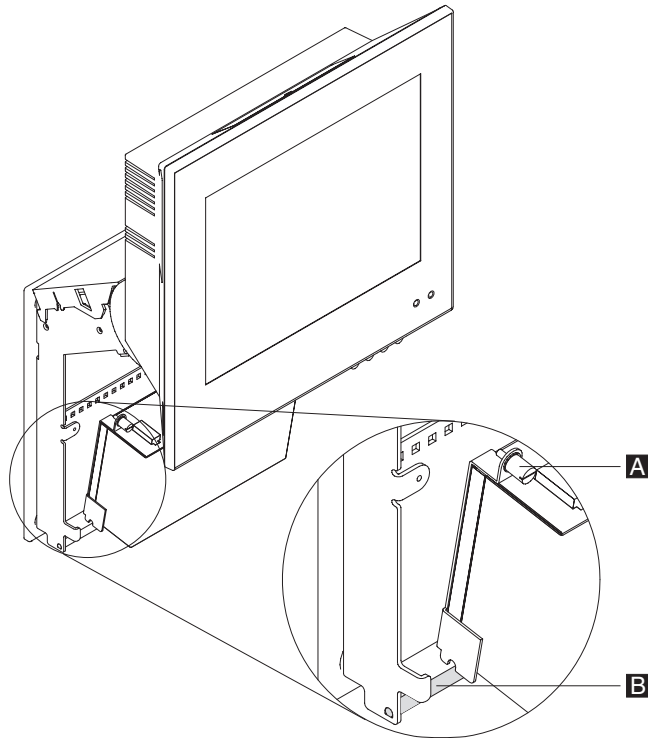


Figure 121. Removing the power supply when wall mounted

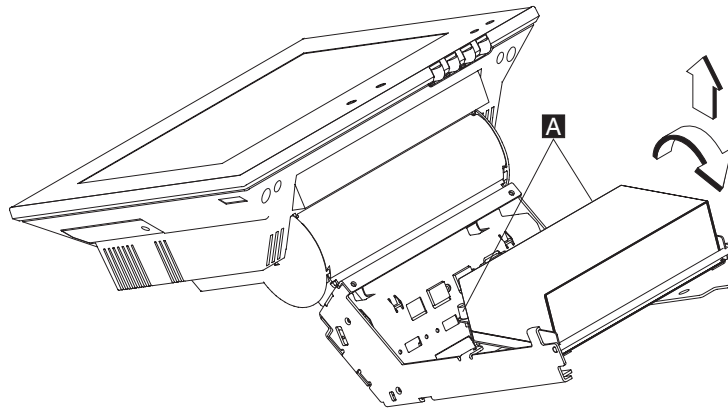


Figure 122. Removing the power supply when not wall mounted

5. Rotate the power supply forward until it stops rotating and then lift up to remove.

Note: When replacing the power supply, make sure that the U-shaped ends, of the power supply bracket, are set on the metal bar **B** in Figure 121.

6. Reassemble in the reverse order.

Wall mount hard-disk drive (HDD) or CompactFlash replacement

A HDD can be replaced while the SurePOS 500/600 is wall mounted.

Note: CompactFlash is available on Model 532 only. Replacement of the CompactFlash is the same as for the HDD.

1. Switch OFF the power to the system. Unplug the power cord from the external power source.
2. Remove the base cover as described at “Wall mount covers removal and replacing” on page 138.
3. Unplug the power connector cable and the ac power cord from the power supply. Figure 121 on page 142 shows the location of the power supply.
4. Remove the back throat cover and rear cover as described in “Wall mount covers removal and replacing” on page 138.
5. Loosen, but do not remove, the two screws (**A** in Figure 123) from the HDD mounting bracket and gently move the HDD and bracket assembly **B** up and away from the display. Continue to support the HDD to prevent damage to the power connector and data cable connector.
6. To remove the HDD power connector and data cable connector. Pull gently on the data cable connector (do not pull on the cable itself) until the connector is free.

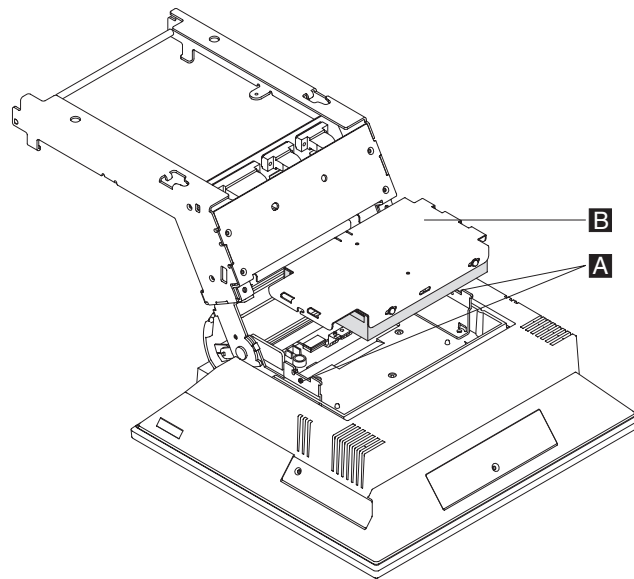


Figure 123. Removing the HDD

7. If you are replacing the HDD, remove the three screws holding the HDD to the mounting bracket, as shown in Figure 124.

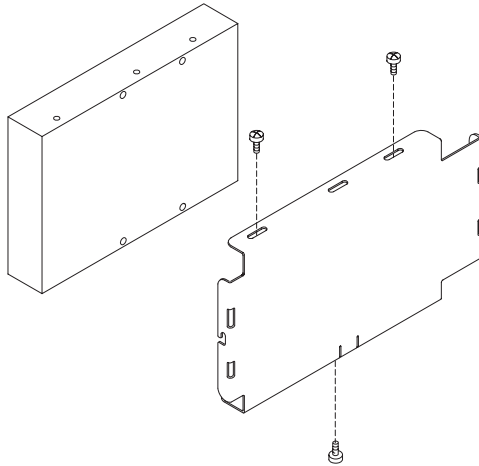


Figure 124. Removing the HDD from its bracket

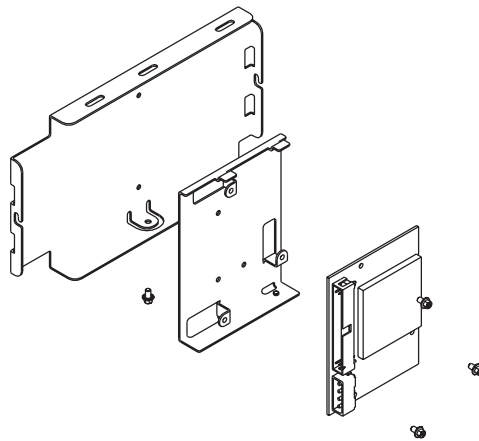


Figure 125. Removing the CompactFlash from its bracket, Model 532 only

8. To replace a HDD, reverse this procedure.

Note: When replacing the HDD, route the power connector cable so it does not get pinched under the mounting plate tabs.

9. Power on the system and use the Setup Utility to verify that the system recognizes the new HDD.

Note: If the system fails to recognize the new HDD, verify that the address jumper is correctly installed. If the HDD needs a jumper to be recognized as Drive 0, the correct position is indicated on a label on the top of the HDD.

Wall mount memory removal and installation

Attention: Establish personal grounding before touching this unit. For more information, see “Electrostatic discharge (ESD)” on page 228 for more information.

To get access to the memory modules, you will need to remove the SurePOS 500/600 from the wall.

1. Switch OFF the power to the system. Unplug the power cord from the external power source.
2. Remove the system from the wall mount plate as described at “Removing the SurePOS 500/600 with Wall Mount feature from the wall mount plate” on page 134 and place face down on a clean smooth surface.
3. Remove the HDD, as described at “Wall mount hard-disk drive (HDD) or CompactFlash replacement” on page 143.
4. Loosen the captive screw **A** from the memory cover **B** located on the back of the display, as shown in Figure 126, and slip the cover off of the two alignment pins **C**.

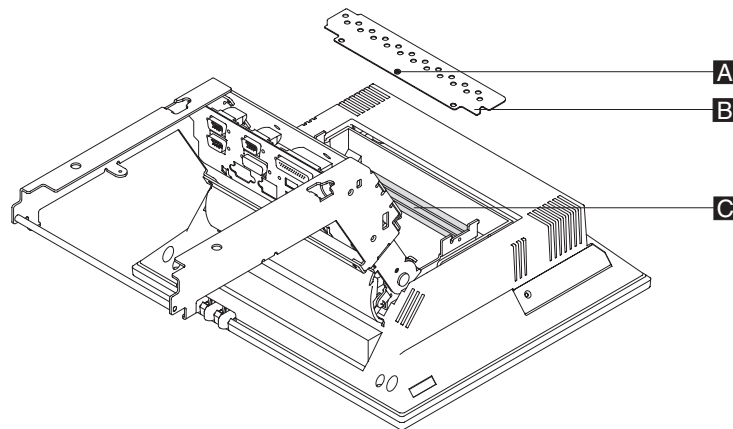


Figure 126. Removing the memory cover

5. To remove a memory module, press down on the white tabs at the ends of the socket until they are both at a 45° angle. The module will rise slightly out of the socket.
6. Touching only the upper corners of the module, lift it gently until it is free from the socket.

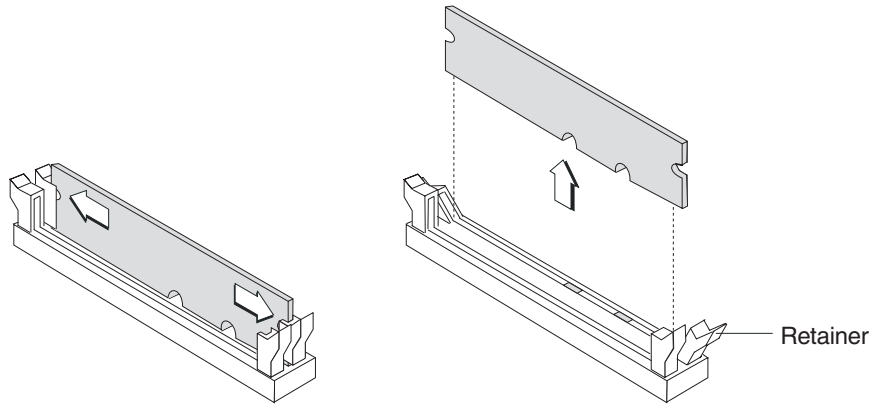


Figure 127. Removing the memory module

7. Before inserting a replacement module, note the alignment notches along the bottom of the module and where it plugs into the slot. One notch is located in the center of the gold connectors and the other notch is offset.
8. Touching only the top corners of the module, align the connector tabs and press the module down firmly. The white tabs at the ends of the socket will close as you insert the module.
9. Replace the HDD, rear cover, back throat cover. Remount to wall bracket and secure screws. Install base cover.

Connector panel (tailgate) – removal and replacing

Connector panel (tailgate) removal

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Unplug any peripheral cables from the front connector panel.
3. Remove the system from the wall mount plate as described at “Removing the SurePOS 500/600 with Wall Mount feature from the wall mount plate” on page 134 and place face down on a clean smooth surface.
4. Remove the HDD, as described at “Wall mount hard-disk drive (HDD) or CompactFlash replacement” on page 143.
5. Remove the front throat cover by pulling it off the two metal posts. The rear cover and back throat cover should already be removed. See “Reinstalling the front throat cover” on page 140 for location.
6. Remove the system-board connector cover (two screws) located behind the removed HDD.
7. Unplug the cables between the rear connector panel and the system board at the system-board end.

Note: Do not unplug the HDD power cable or the HDD data connector from the system board.

8. Detach the tailgate assembly from the mounting plate by removing four screws, as shown in Figure 128.

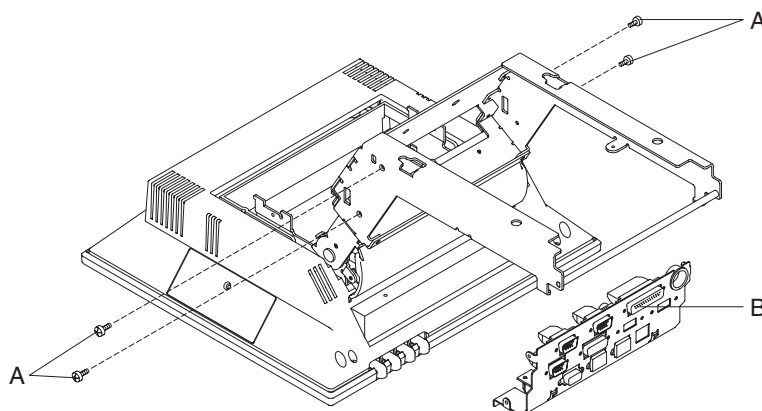


Figure 128. Detaching the tailgate from the mounting plate

9. Remove the entire tailgate assembly **B**.
10. Reassemble in the reverse order

Reinstalling the connector panel (tailgate)

1. Insert the new tailgate into the holding bracket.
2. Align the tailgate assembly with the screw holes on the holding bracket.
3. Install four screws to secure the tailgate assembly to the holding bracket.
4. Route the cables from the tailgate assembly toward the system board.
5. Plug the cables from the tailgate assembly into their connectors on the system board area.

6. Install the system-board connector cover with two screws **A** , by performing the following steps:
 - a. Hold up the HDD power cable and data connector while resting the system-board connector cover flat and slightly about the connector locations on the rear of the display. Notice that the cover is notched to accommodate the cables.
 - b. Guide the cover down and between the slots on the rear of the display.
 - c. Install the two screws.
7. Install the HDD. See “Wall mount hard-disk drive (HDD) or CompactFlash replacement” on page 143.
8. Install the rear cover and back throat cover.
9. Attach the SurePOS 500/600 to the wall mount plate. See “Attaching the system to the wall mount plate” on page 135.
10. Reattach cables, see “Connecting the cables and using cable-ties” on page 151. Route the cables under the metal power supply bar.
11. Install the power supply as described in “Wall mount power supply removal and replacement” on page 141 and install the power cord.
12. Attach the front throat cover, see “Reinstalling the front throat cover” on page 140.
13. Power on the SurePOS 500/600.

Hinge assembly removal and replacement

1. Switch OFF the power to the SurePOS 500/600. Unplug the power cord from the external power source.
2. Unplug any peripheral cables from the front connector panel.
3. Remove the system from the wall mount plate as described at “Removing the SurePOS 500/600 with Wall Mount feature from the wall mount plate” on page 134 and place face down on a clean smooth surface.
4. Remove the HDD, as described at “Wall mount hard-disk drive (HDD) or CompactFlash replacement” on page 143.
5. Remove the front throat cover by pulling it off the two metal posts. The rear cover and back throat cover should already be removed. See “Reinstalling the front throat cover” on page 140 for location.
6. Remove the four screws **A** securing the base mounting bracket and tailgate assembly **B**.

Note: “Reinstalling the front throat cover” on page 140 does not show the cables attached from the tailgate to the system board, but they will be during this procedure.

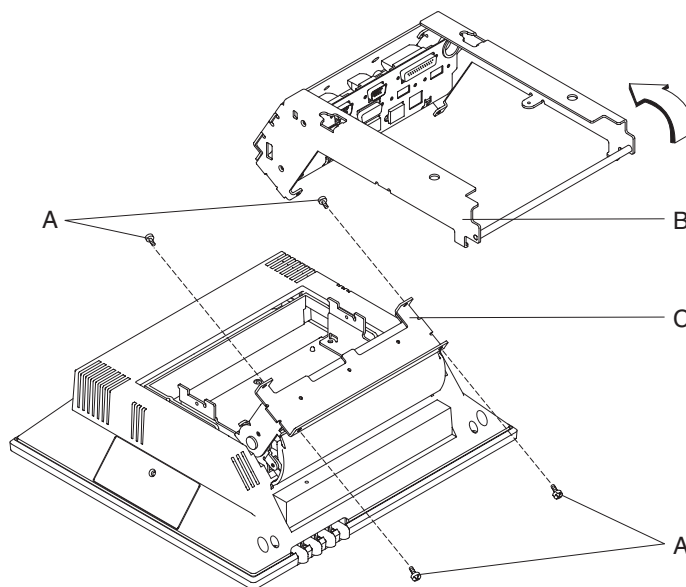


Figure 129. Removing the base mounting bracket from the hinge assembly

7. Rotate the base mounting bracket and tailgate assembly **C** over the top of the display and position it as shown in Figure 130.
8. Detach the hinge assembly **B** by removing four screws **A** and remove from the system as shown in Figure 130.

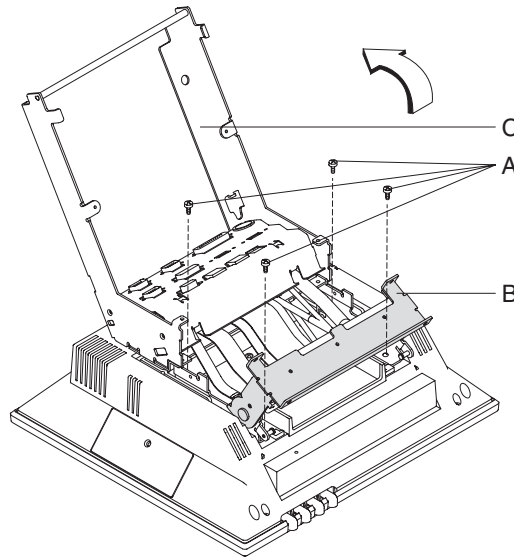


Figure 130. Removing the hinge assembly

Connecting the cables and using cable-ties

To access the front connector panel (under the front edge of the display), tilt the display to its rearmost position. To access the tailgate connector panel, remove the base cover using the procedure at “Wall mount covers removal and replacing” on page 138.

Connecting cables to the front panel, wall mounted

Figure 131 describes the front panel of a SurePOS 500/600 with Wall Mount feature Model 561. Figure 132 describes the front panel of a SurePOS 500/600 with Wall Mount feature Model 562.

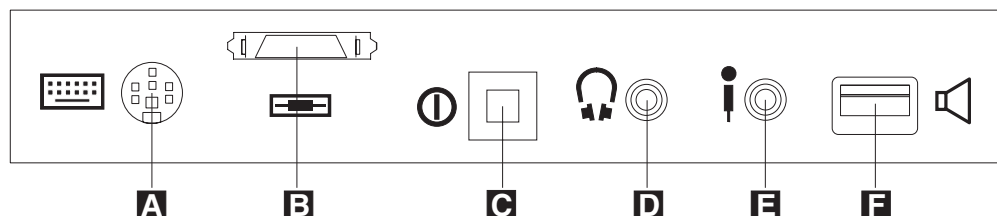


Figure 131. Front connector panel description for a Model 561

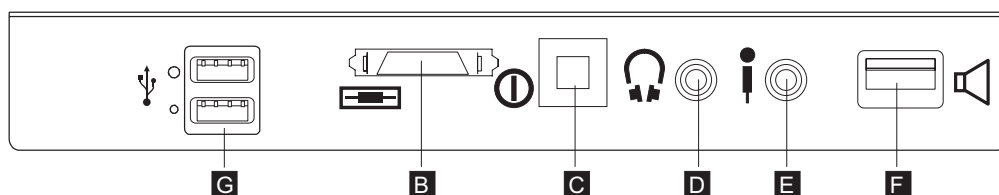


Figure 132. Front connector panel for a Model 562

- | | |
|---|---|
| A Keyboard/Mouse connector (Models xx1 only) | E Microphone connector (Models 551, 552, 561, 562, 621, 622, 651, and 652 only) |
| B Diskette drive connector | F Speaker kit connector (Models 551, 552, 561, 562, 621, 622, 651, and 652 only) |
| C Power switch | G USB connectors (2) |
| D Headphone connector (Models 551, 552, 561, 562, 621, 622, 651, and 652 only) | |

1. Switch the power OFF at the system unit.
2. Connect the cables for the keyboard/mouse (a “Y” cable is needed to connect a mouse), diskette drive, microphone, headphone, and speaker kit.

Connecting cables to the tailgate connector panel, wall mounted

This section explains how to connect cables to the tailgate connector panel (shown in Figure 133 on page 152 and Figure 134 on page 152), using cable-ties. Connect the cables in the back row first, then work forward connecting any additional cables.

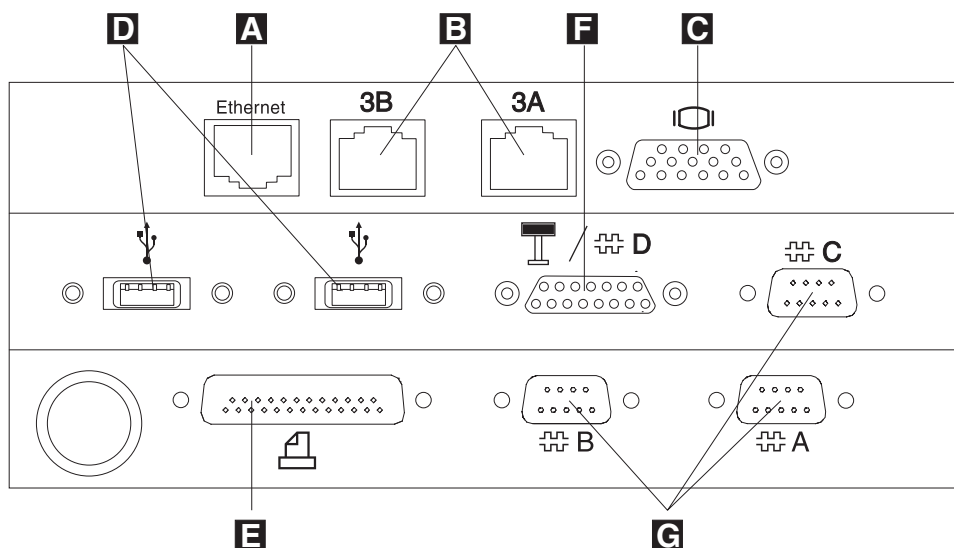


Figure 133. Tailgate connector panel, Models xx1, wall mounted

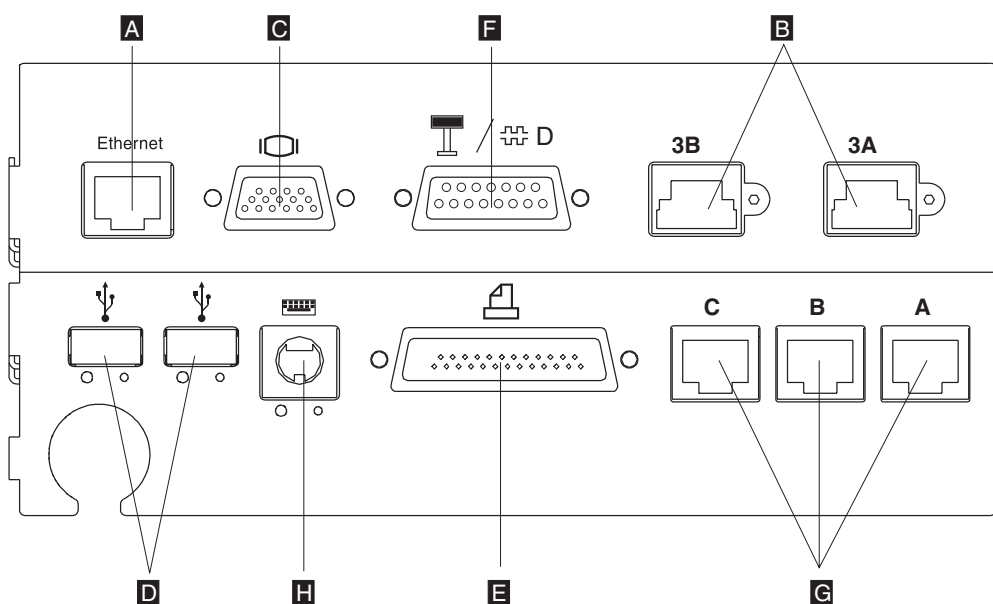


Figure 134. Tailgate connector panel, Models xx2, wall mounted

- | | |
|-------------------------------------|---|
| A Ethernet connector | E Parallel connector |
| B Cash drawer connectors (2) | F 15-pin serial connector (distributed character display or APA VFD) |
| C External video connector | G Serial connectors (3) |
| D USB connectors | H Keyboard/mouse connector (Models xx2 only) |

1. Switch OFF the power at the system. Unplug the power cord from both the system unit and the external power source. Remove the base cover. See "Wall mount covers removal and replacing" on page 138.
2. Remove the power supply for easier access to the tailgate connector panel. See "Wall mount power supply removal and replacement" on page 141.

3. Route the cables through the wall and out the cutout for the wall mount plate or route the cables up the front of the wall and under the power supply bracket and to the tailgate panel.
4. Connect the cables in the back row first, then work forward connecting any additional cables as shown in as shown in Figure 133 on page 152.
5. Secure the cables, especially the USB cables to the wall mount plate with tie-warps, see Figure 135 for an example. Cut the end of the tie-wraps flush so there are no sharp edges sticking out to get hurt on as shown in Figure 135.

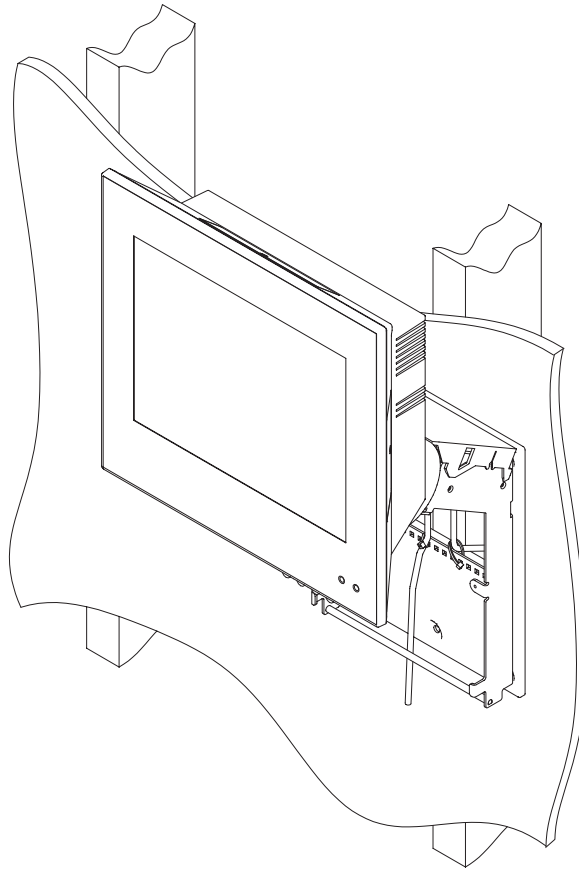


Figure 135. Securing cables using tie-wraps

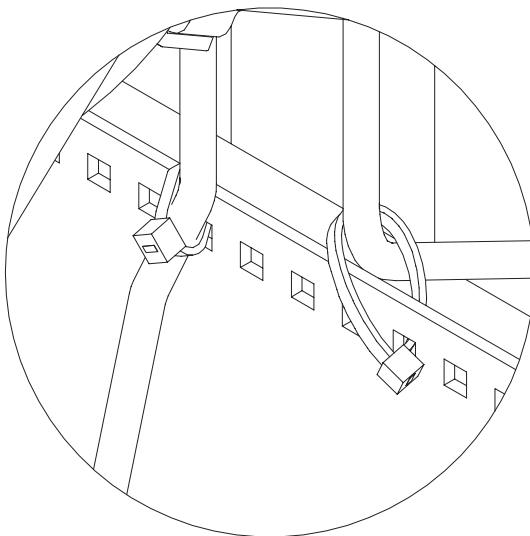


Figure 136. Exploded view of tie-wraps with ends cut flush.

6. Route the ac power cord under the power supply bar.
7. Reinstall the power supply. Tighten the two thumbscrews **A** in Figure 137, to secure the power supply.

Note: When replacing the power supply, make sure that the U-shaped ends of the power supply bracket are on the metal bar **B**.

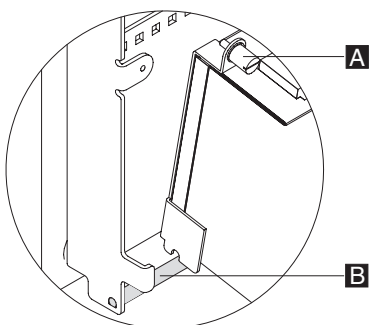


Figure 137. Attaching the power supply

8. Attach the power connector cable and the ac power cord into the power supply.
9. Replace the base cover. See "Wall mount covers removal and replacing" on page 138.
10. Plug the power supply line cord into an AC outlet.
11. After your installation is complete, press the printer power switch under the printer cover to power on the printer. See "Connecting cables to the front panel, wall mounted" on page 151 for location.
12. Switch ON the power to your system and verify that it is operating correctly by checking the indicator lights (LEDs) on the front of the touch screen.

Status/Power Indicator

On: Logic working correctly.
Source ac power present
and within tolerance.

Off: System board defective or
power is off

Blinking: Logic malfunction or
system in suspend mode

HDD Indicator

On HDD is reading or writing

Off: No HDD activity

Blinking: HDD is reading or writing

Figure 138 shows the front indicators of the SurePOS 500/600 Model 521/522 display. Looking at the exploded view, the symbols from left to right are contrast, brightness, status/power and hard disk drive indicators.

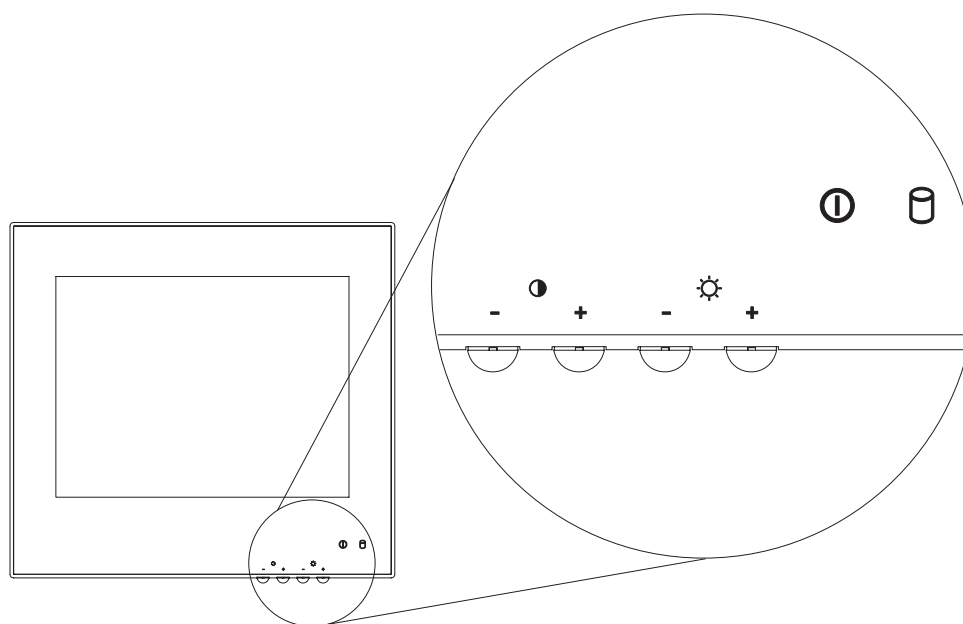


Figure 138. Locations of front panel display indicators

Note: Models 541, 542, 561, and 562 do not have contrast buttons.

Chapter 6. Control procedures for the SurePOS 500/600 Series

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This chapter contains information about updating flash BIOS and about the Setup Utility.

Updating the flash BIOS

The system board contains the following:

- 1 MB flash electrically-erasable ROM for storing the POST/BIOS
- Video BIOS
- IBM logo
- Setup Utility
- RPL code
- Plug-and-Play data

To obtain the latest level of flash BIOS for the SurePOS 500/600 Series:

1. Insert a formatted diskette into the diskette drive of a PC *with Internet access*.
2. Access the IBM Retail Store Solutions Web site at:
www.ibm.com/solutions/retail/store/.
3. Select **Support**.
4. Under Download, download the update program to a temporary location on the PC's hard-disk drive. Run the self-extracting program and respond to the messages that displays. This program writes the updates to the diskette.
5. After the program completes, switch OFF the power on the SurePOS 500/600 Series. Insert the diskette into a drive attached to the system, then switch the system ON again. The system boots from the diskette, the flash BIOS update occurs, and the system powers OFF automatically.
6. Remove the diskette and then switch ON the power. The system boots using the new BIOS update.

Note: The flash utility saves and restores your CMOS setting.

Power interruption during flash BIOS update procedure

If power is interrupted during the flash BIOS update procedure, the BIOS could be corrupted. Should this event occur, the system will correct the BIOS by automatically running from a backup copy of BIOS. (This backup copy resides in the second half of the flash.) Using the Setup Utility's DMI Event Logging you can see whether the system is using normal BIOS or backup BIOS. Locate this option in the Advanced menu item window. To repair the corrupt version of BIOS and return to using the normal BIOS, repeat the steps to update the flash BIOS. The system corrects the corrupt version of the BIOS, so the backup copies and the normal copies are correct.

Using the Setup Utility

The Setup Utility is a ROM-based program that is used to define the system configuration. The Setup Utility provides the following menu item windows:

- Summary
- Main
- Advanced
- Power
- Boot
- Exit

Usage tips and navigation

Before you begin the Setup Utility, you should become familiar with navigating and using the program. Figure 139 on page 159 is an example of the initial screen that displays in the Setup Utility.

Menu Items

The selectable windows provided by the Setup Utility. Touch or select these terms to open the window.

Variable Information

This section displays configuration settings applicable to your system

Item Specific Help

This section provides dynamic and extensive help for the program.

Navigation Keys

These keys allow you to move within the program. Touching the screen at these units also allows navigation.

Other features of the program are:

- Navigate the program and select items by using the keyboard or the touch screen.
- Select and change information that is located within the square brackets.
- Selecting an item preceded by a plus sign opens a drop down menu.
- Re-booting enables your new configuration settings.
- Record your configuration settings after completing the Setup Utility. This information is required during service.
- Save your settings before exiting.

Menu Items							
←	Summary	Main	Advanced	Power	Boot	Exit	→
CPU Type CPU Speed System Memory Extended Memory Shadow RAM BIOS Version BIOS Date Diskette A Serial Ports LPT Ports PS/2 or USB Mouse Ethernet MAC Address			Variable Information			Item Specific Help	
						Help Information	
F1 Help	ESC Exit	↑ Up	↓ Down	Enter Select	F9 Default	F10 Save & Exit	
Navigation Keys							

Figure 139. Example of Summary window

Starting the Setup Utility

Follow these steps to start the Setup Utility:

1. Switch the power ON.
2. Press F2 when the IBM SurePOS 500 logo and the message **Press F2 to <Enter> setup** appears.

Note: If you do not have a keyboard, wait for a few seconds. The following message appears: **Touch screen twice for Setup, or three times for Screen Calibration..**

Using the Summary and Main windows

The Summary window (Figure 139 on page 159) displays an overview of your system configuration. Use this window to review your current configuration settings.

Use the Main window (Figure 140) to set the system time and system date. The numbers displayed in the Item Specific Help-frame allow you to enter the numeric time and date.

←	Summary	Main	Advanced	Power	Boot	Exit	→
System Time [02:30:03] System Date [2000] ▶ Serial Ports Configuration ▶ Other I/O Device Configuration ▶ Primary Master Onboard Ethernet [Enabled] Onboard Audio [Enabled] Onboard PCMCIA [Disabled]						Item Specific Help <TAB>, <Shift + TAB> on <Enter> selects field:	
						1	2
						4	5
						7	8
						Del	0
						Enter	
F1 Help ESC Exit ↑ Up ↓ Down Enter Select F9 Default F10 Save & Exit							

Figure 140. Example of the Main window

Using the Advanced window

The Advanced window (Figure 141) allows you to view the current states of the Hardware monitor, modify the Desktop Management Interface (DMI) event logging and set the keyboard features.

←	Summary	Main	Advanced	Power	Boot	Exit	→
▶ Hardware Monitor ▶ DMI Event Logging ▶ Keyboard Features Secured Setup Configurations [No] Reset Configuration Data [No] Plug and Play OS [No] Legacy USB Support [Enable] Large Disk Access MOD [DOS] Video Memory Size [4MB] Video Aperture Size [32M]						Item Specific Help	
						Show hardware monitor current state	
F1 Help	ESC Exit	↑ Up	↓ Down	Enter Select	F9 Default	F10 Save & Exit	

Figure 141. Example of the Advanced window

Using the Power window

Use the Power window (Figure 142) to configure the power savings, hard disk time-out, video time-out and other power settings.

←	Summary	Main	Advanced	Power	Boot	Exit	→
Power Savings [Customized] Auto Suspend Timeout [Off] Hard Disk Timeout [Disabled] Video Timeout Power-Up / Wake on LAN Power-Up / Wake on Ring Power-Up / Wake on Alarm Resume On Presence Sensor Power Button Function						Item Specific Help	
						Maximum power savings conserves the greatest of system power	
F1 Help	ESC Exit	↑ Up	↓ Down	Enter Select	F9 Default	F10 Save & Exit	

Figure 142. Example of the Power window

Using the Boot window

The Boot window (Figure 143) allows you to set the boot priority, to boot protocol and to enable or disable the POST diagnostic screen.

←	Summary	Main	Advanced	Power	Boot	Exit	→
► Boot Priority [RPL] Boot Protocol [RPL] [Disabled] POST Diagnostic Screen						Item Specific Help	
						Select Boot Priority	
F1 Help	ESC Exit	↑ Up	↓ Down	Enter Select	F9 Default	F10 Save & Exit	

Figure 143. Example of the boot window

Setting the Boot Priority: The items listed in the Boot Priority window (Figure 144 on page 163) are in boot order. For example, the system boots the first item first, the next item second, and so forth. To change the priority, or order, use the keys at the bottom of the screen to move the items as follows:

- + Moves the items upward in the list
- Moves the items downward in the list
- ! Denotes that this selection is not bootable

						Exit Submenu		
Boot Priority							Item Specific Help	
+Removable Devices ATAPI CD-ROM Drive +Hard Drive Systemboard 10/100 Ethernet							Keys used to view or configure devices	
F1 Help	ESC Exit	↑ Up	↓ Down	-	+	!	Enter Command	F9 Default
								F10 Save & Exit

Figure 144. Example of the boot priority window

Exiting the Setup Utility

Use the Exit window (Figure 145) to determine your settings upon exiting.

Note: The **Load Setup Defaults** selection changes **all** settings to their original default.

←	Summary	Main	Advanced	Power	Boot	Exit	→
[Exit Saving Changes] [Exit Discarding Changes] [Load Setup Defaults] [Discard Changes] [Save Changes]						Item Specific Help	
						Exit Setup Utility and Save your changes to CMOS	
F1 Help	ESC Exit	↑ Up	↓ Down	Enter Select	F9 Default	F10 Save & Exit	

Figure 145. Example of the Exit window

Remember that your configuration settings become effective after the next boot.

System diagnostics and troubleshooting

This section describes the use of the Service Diskette, and the use of the CMOS reset jumper.

Using the Service Diskette

The SurePOS 500/600 Series Service Diskette is a DOS-bootable diskette. It provides menu-driven tests and utilities that enable trained service technicians to configure and test the SurePOS 500/600 Series and I/O devices. The diskette is not shipped with the system. However, you can create one by downloading the Service Diskette code from the IBM Retail Store Solutions Web site using the following steps:

1. Go to www.ibm.com/solutions/retail/store/
2. Select **Support**.
3. Under SurePOS Systems and Peripherals select **IBM SurePOS 500/600 Series**.
4. Under Downloads, select **Service Diskette**.

To build diskettes from image files, download the EXE file, insert a diskette in drive A: and run the EXE file.

When you boot the SurePOS 500/600 Series with the Service Diskette, detected devices are shown in a box. On touch-enabled systems, you are given the option to use the keyboard if one is attached. Following the logo, a subsystem selection menu is displayed for POS Devices Test, Subsystem Unit Test, and Utilities (for VPD and Touch Calibration). Sub menus are dynamically tailored for your system and display only available tests.

Note: Using the Service Diskette requires a diskette drive on the system. If the system does not have a diskette drive, the service technician will have to use a Field Replaceable Unit (FRU) diskette drive.

Peripheral default baud rates

The following are the default baud rates for the SurePOS 500/600 Series peripherals:

- The MSR default baud rate is 19 200 bps, 8 data bits, no parity bit, and 1 stop bit (19200–8–N–1).
- The character graphic display default baud rate is 9 600 bps, 8 data bits, no parity bit, and 1 stop bit (9600–8–N–1).

Real-time clock and CMOS

The real-time clock is a low-power clock that provides a time-of-day clock and a calendar. The clock settings are maintained by the battery when the power cord is removed. See “System-board battery – removing and replacing” on page 95 for the location of the battery.

Restoring the default CMOS settings

You can restore CMOS default settings while in Setup by pressing the F9 function key.

Clearing the CMOS settings

The SurePOS 500/600 uses 242 bytes of battery-backed complementary metal-oxide semiconductor (CMOS) memory to store system settings. If the CMOS

memory becomes corrupted and the system does not boot, you can restore the factory default values by following these steps:

1. Referring to Figure 146, loosen the captive screw **A** from memory cover **B** located on the back of the display. Slip the cover off the two alignment pins as described in “Memory module – removing and replacing” on page 78.
2. Remove the memory module(s) **C**.
3. Locate the CMOS reset jumper (JP4) **D** on the system board near the memory modules.

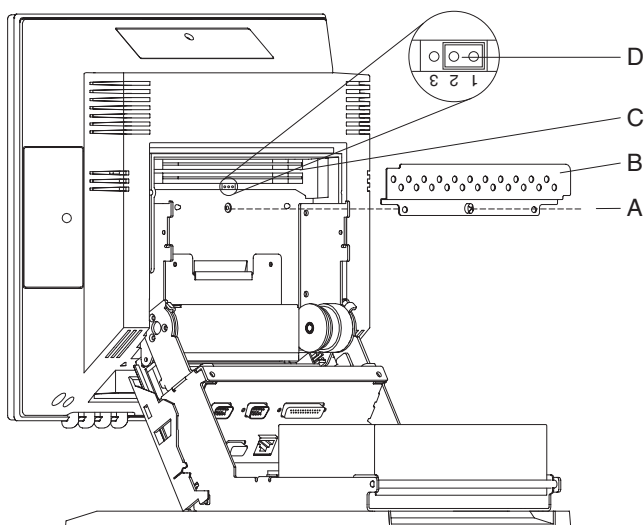


Figure 146. CMOS reset jumper JP4

4. Remove the jumper, which is normally located on pins 1 and 2.
5. Place the jumper on pins 2 and 3 and wait for 5 seconds. This resets the CMOS.
6. Return the jumper to pins 1 and 2.
7. Reinstall the memory module, memory cover and rear cover as described in the *IBM SurePOS 500 Series Hardware Service Guide*.
8. Power ON the system.

When you restart the system after resetting the CMOS, the following error messages display:

```
0271: Check date and time setting
0251: System CMOS checksum bad
```

To correct these errors, run the Setup Utility and press F9 to restore the CMOS defaults. After the defaults are restored, reset the date, the time, and any other settings that were changed before the CMOS was reset.

Losing Vital Product Data (VPD)

If the Onboard Ethernet is disabled in the Setup Utility and you clear CMOS, you could lose your VPD, such as machine serial. (Locate this setting in the Setup Utility's Main window.) To restore your VPD, enable the Onboard Ethernet and boot to Setup one time. During this boot, the system restores the VPD from the Ethernet EPROM to CMOS. You can disable the Onboard Ethernet setting again, if desired.

Chapter 7. Keyboard– Removing and Replacing

Keyboard/pointer symptoms.	168
CANPOS Keyboard components - removing and replacing	169
CANPOS keypad assembly.	169
CANPOS keyboard logic card	172
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The following keyboard type are available for the SurePOS 500/600:

1. IBM Space Saver II keyboard
2. IBM SurePOS 500/600 Compact ANPOS Keyboard (CANPOS Keyboard)

For problems with the Space Saver II Keyboard, refer to the *Space Saver II Keyboard User's Guide*. This publication can be downloaded from www.pc.ibm.com. Click on **Accessories** to locate the publication

This chapter contains repair and usage information for the CANPOS Keyboard.

The CANPOS Keyboard provides a QWERTY layout, an integrated pointing device, a numeric keypad, and 32 programmable keys. Key caps can be inserted onto the programmable keys to show a new key definition. The 32 programmable keys are programmed by the customer using the CANPOS Keyboard Utility program. See the *SurePOS 500/600 Installation and Operations Guide* for more information on the CANPOS Keyboard Utility program.

DANGER

To avoid a shock hazard, do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.

DANGER

To avoid a shock hazard:

- **The power cord must be connected to a properly wired and earthed receptacle.**
- **Any equipment to which this product will be attached must also be connected to properly wired receptacles.**

DANGER

When possible, use one hand to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.

Keyboard/pointer symptoms

Use Table 13 to determine the failing CANPOS keyboard FRU.

Table 13. Repair actions for CANPOS keyboard problems

Symptom	Repair actions
One or several keyboard keys is failing (keyboard is operational).	1. Replace the keypad assembly. See "CANPOS keypad assembly" on page 169. 2. Replace the keyboard logic board. See "CANPOS keyboard logic card" on page 172.
All keyboard lights are on (keyboard is not operational).	Replace the keyboard logic board. See "CANPOS keyboard logic card" on page 172.
All keyboard lights are failing (keyboard is not operational)	1. Ensure that the keyboard cable is attached securely at the keyboard and the system unit. 2. Try a known operational I/O device and cable in the port where the keyboard is attached. If the device is operational, then continue checking the keyboard. If the device is not operational, then the port is not operational. 3. Replace the keyboard cable. 4. Replace the keyboard logic board.
The cursor responds sluggishly or does not move when using the CANPOS keyboard with integrated pointing device.	When the computer initially boots up, the cursor may respond sluggishly. The cursor will calibrate itself as it is being used. If the problem persists, follow these steps: 1. Push the joystick to its maximum deflection in each direction – up, down, left, and right – for 2–3 seconds in each direction. 2. If the problem is not resolved, then replace the keypad assembly.
MSR not reading.	1. Run the Setup Utility and check the setting in the MSR serial port. 2. Ensure that the keyboard cable is attached securely at the keyboard and the system unit. 3. Go into WordPad or another word processor and swipe the MSR test card. Make sure data appears. 4. Ensure that the MSR cable are securely connected inside the keyboard. 5. Replace the MSR. See "CANPOS keyboard with MSR" on page 173.

CANPOS Keyboard components - removing and replacing

Figure 147 shows the CANPOS keyboard and its components:

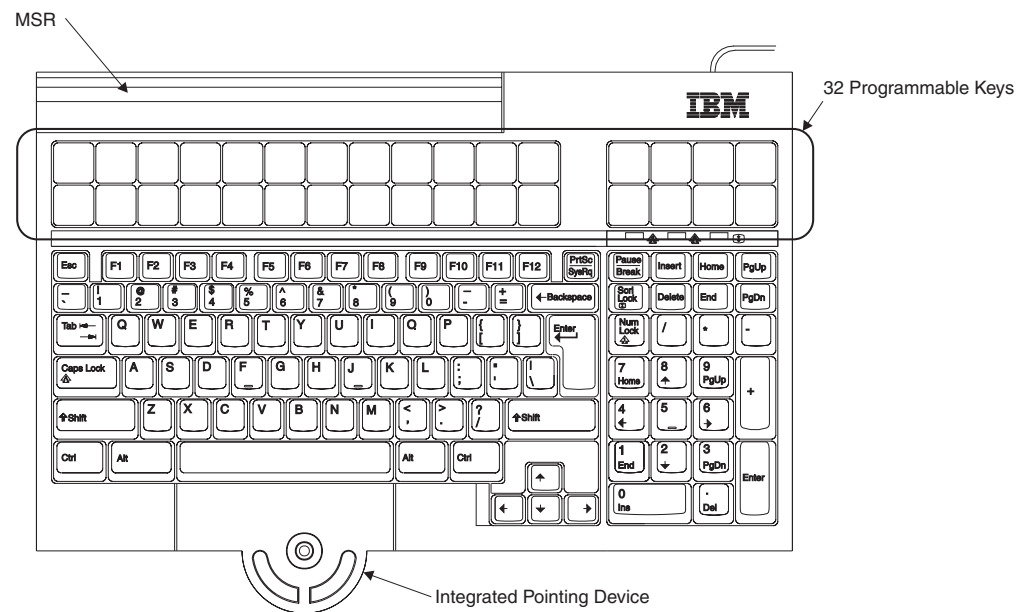


Figure 147. CANPOS Keyboard

CANPOS keypad assembly

You must remove the keyboard from the keyboard integration tray to service the keyboard.

1. To remove the keyboard from the keyboard integration tray, perform the following steps:
 - a. Remove the keyboard **E** from the keyboard integration tray by lifting the keyboard up and off the keyboard integration tray, as show in Figure 148 on page 170.

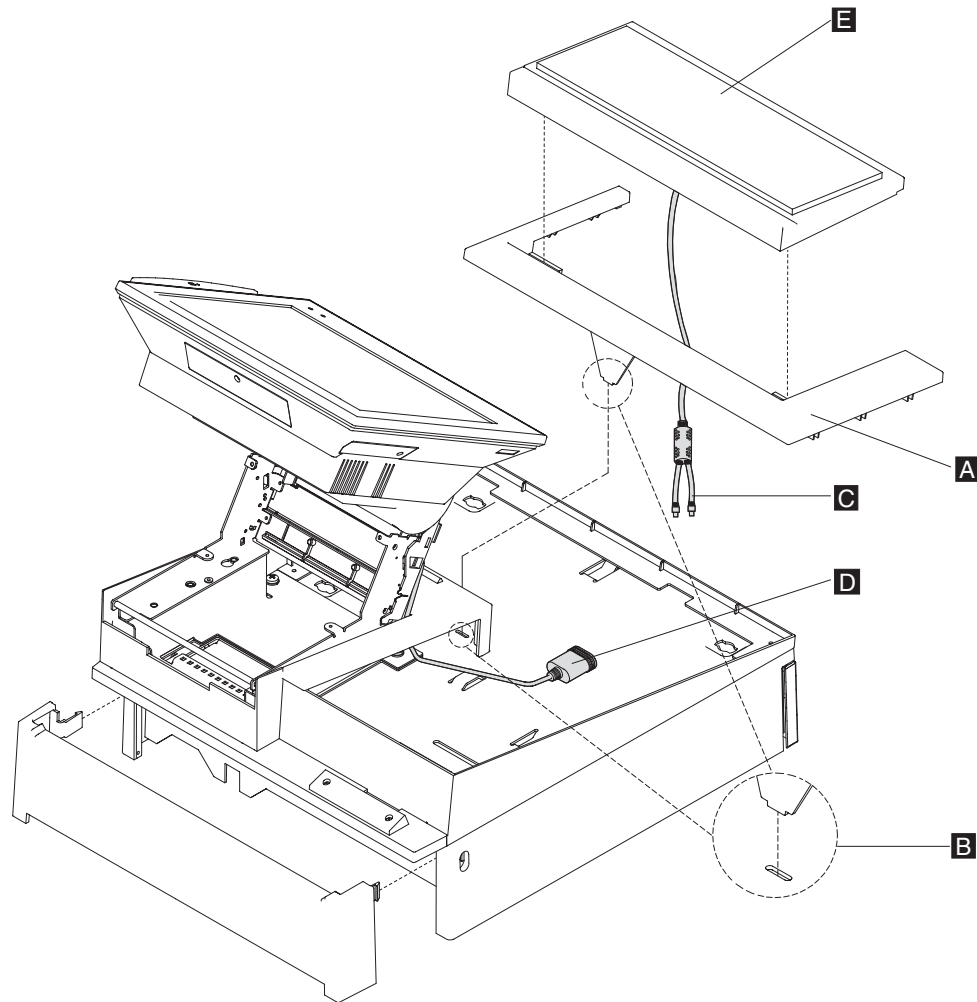


Figure 148. Removing the keyboard from the integration tray

- b. Remove the keyboard filler panel **A** . For reassembling, observe that the keyboard filler panel is inserted into the slot on integration tray, as show in exploded view **B** , as show in Figure 148.
 - c. Detach the keyboard cable **C** from the Y-cable **D** , if the Y-cable is used.
2. Replace the internal FRUs in the CANPOS keyboard keypad assembly:
 - a. Disconnect the cable from the rear of the keyboard.
 - b. Remove the three screws from the underside of the front edge of the keyboard.
 - c. Lift the front edge of the keyboard enough to access the cables inside the keyboard.

- d. Disconnect all cables between the keypad assembly and the keyboard logic card. See Figure 149 for cable callouts and locations.

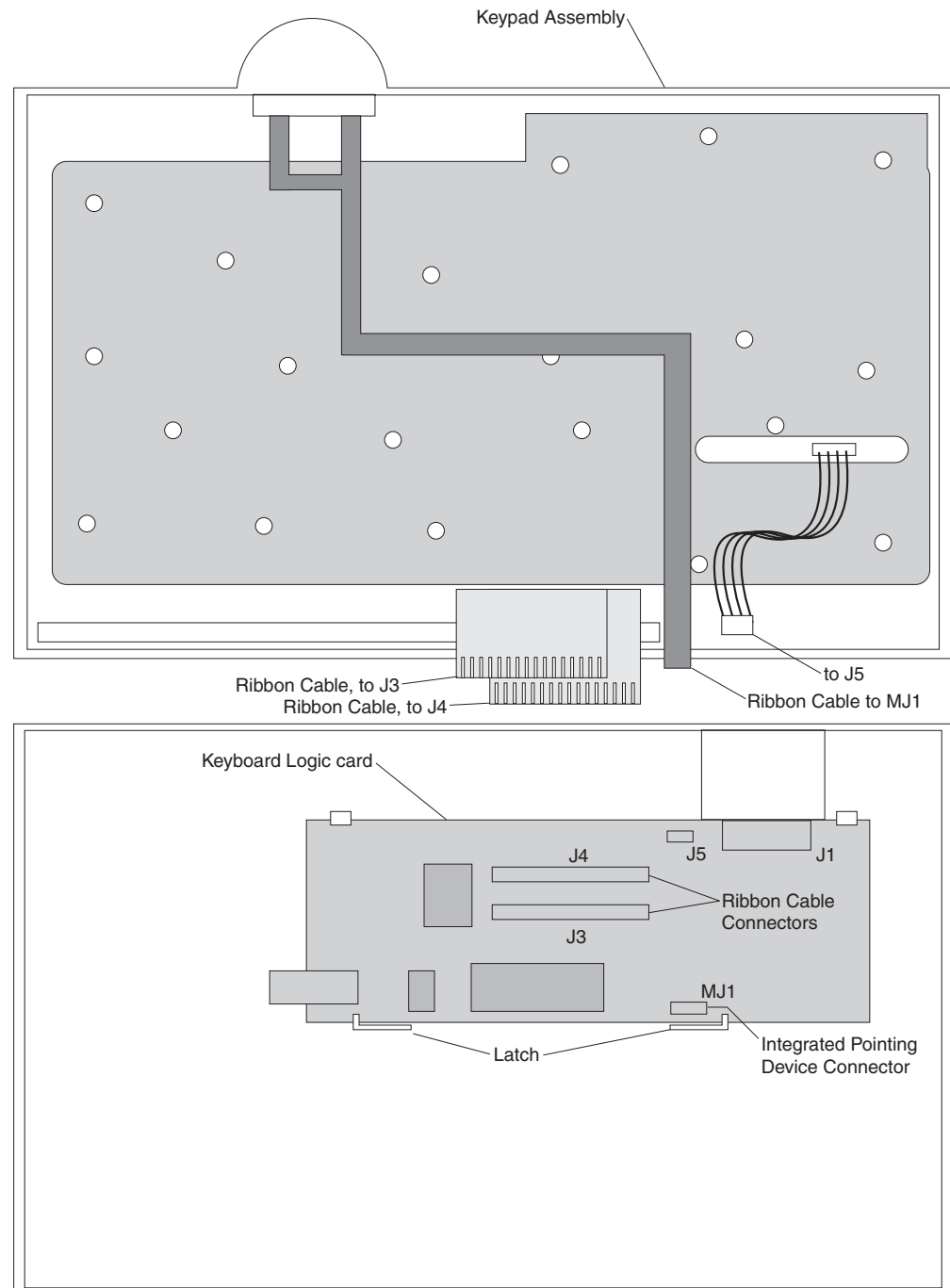


Figure 149. CANPOS keypad assembly without MSR

3. Lift and remove the keypad assembly.

To reinstall the keypad assembly, reverse these steps.

CANPOS keyboard logic card

To remove the keyboard logic card:

1. Remove the keypad assembly. See “CANPOS keypad assembly” on page 169.
2. Pull the two card-retention latches away from the card and lift the logic card out of the keyboard base. See Figure 149 on page 171 for card and latch locations.

To replace the logic card, reverse these steps. Contact the customer to use the CANPOS Keyboard Utility program to download the information about the 32 programmable keys to the CANPOS keyboard.

CANPOS keyboard with MSR

To remove the MSR:

1. Remove the keypad assembly. See “CANPOS keypad assembly” on page 169.
2. Remove the two screws holding the MSR to the keypad assembly as shown in Figure 150. Lift the MSR up and off the the two plastic guides on the keypad assembly.

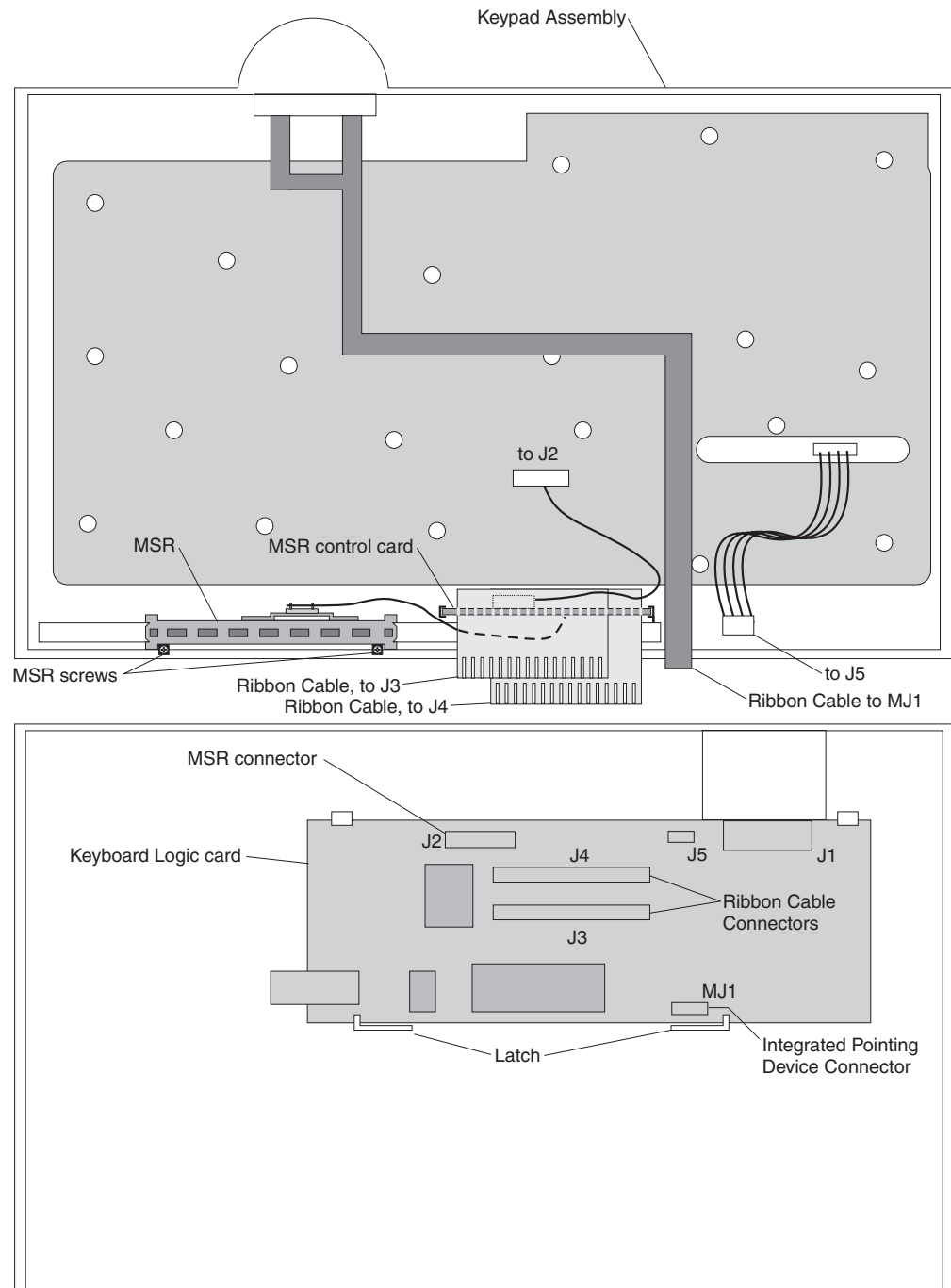


Figure 150. CANPOS keypad assembly with MSR

3. Remove the MSR control card by placing a small slotted screwdriver between the metal keypad assembly and the bottom of the MSR control card **A** ; and

pry the control card up and off the two plastic guides as shown in Figure 151.

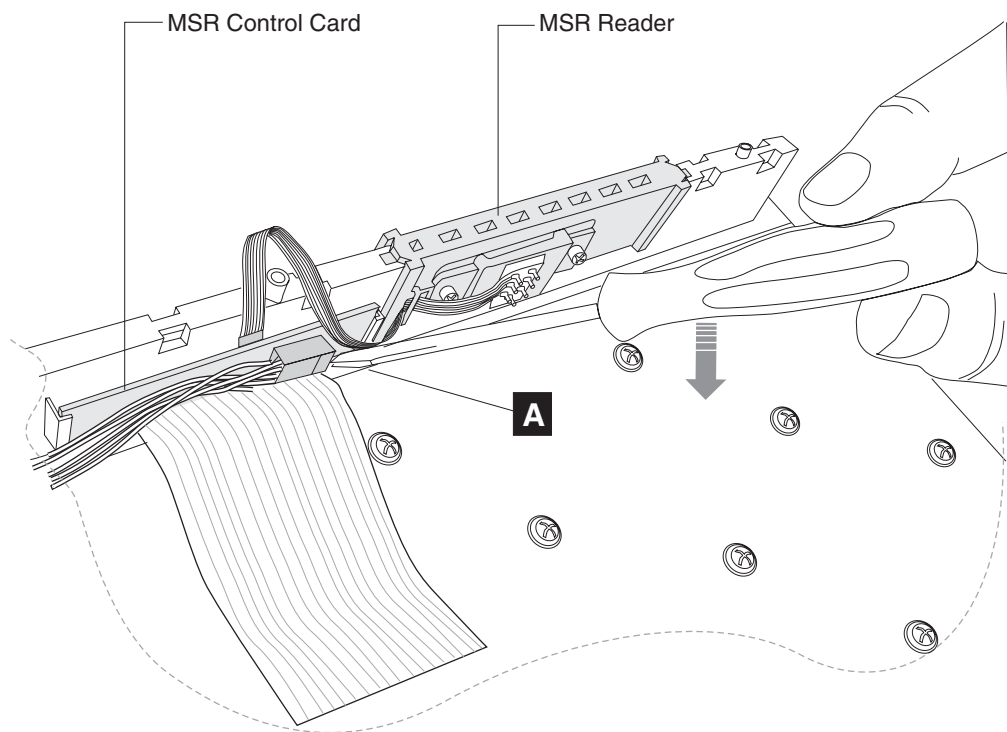


Figure 151. Removing the MSR control card

To replace the MSR:

1. Install the MSR control card onto the keypad assembly by inserting the control card into the two plastic guide, as shown in Figure 151.
2. Before installing the MSR onto the keypad assembly, route the thin ribbon cable from the MSR control card to the MSR under the plastic clip on the MSR.
3. Align the MSR's two screw-holes tabs with the screw holes on the keypad assembly and slide the MSR into the two plastic guides. Install and tighten the two screws, as shown in Figure 150 on page 173.
4. Install the keypad assembly. See "CANPOS keypad assembly" on page 169.

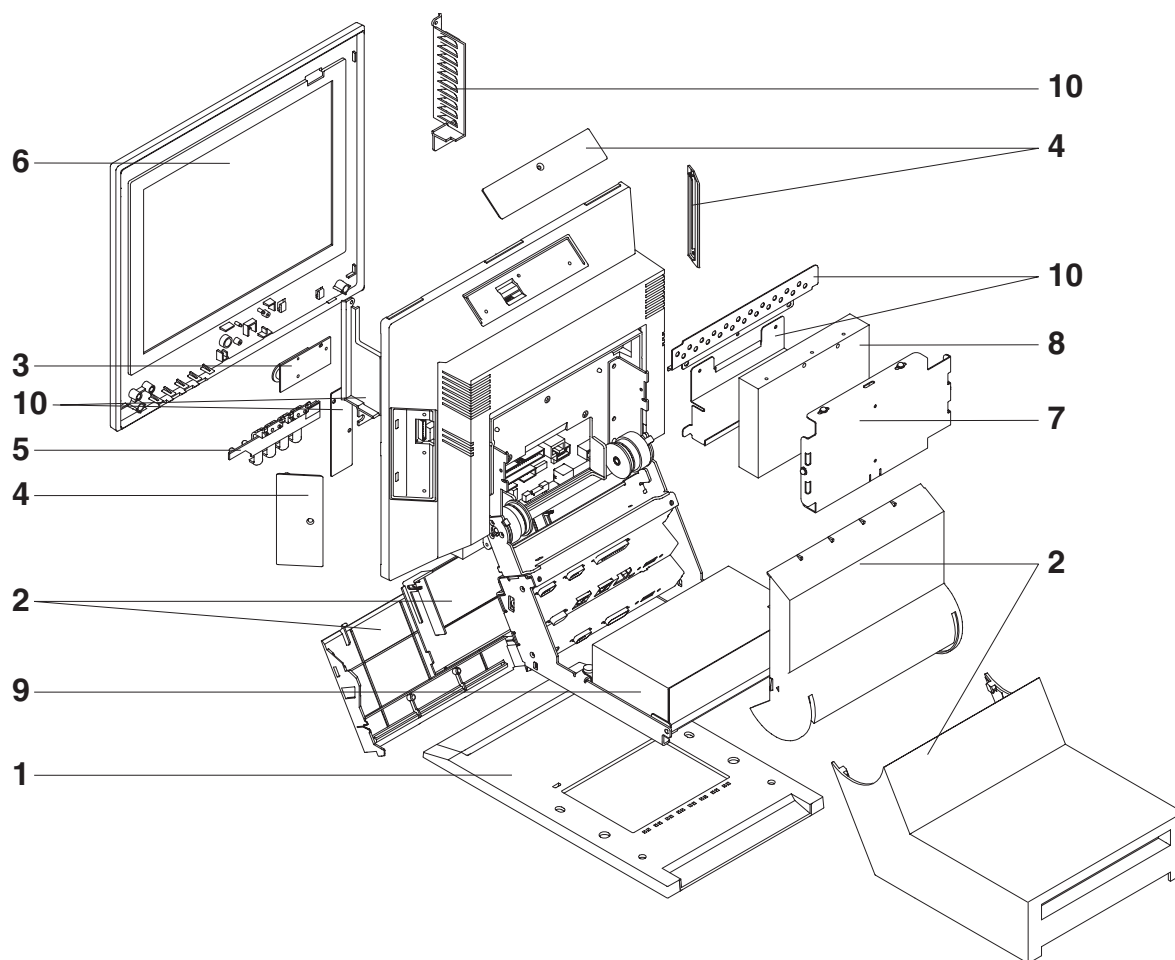
Contact the customer to use the CANPOS Keyboard Utility program to download the programmable MSR information to the CANPOS keyboard.

Appendix A. SurePOS 500/600 Series parts catalog

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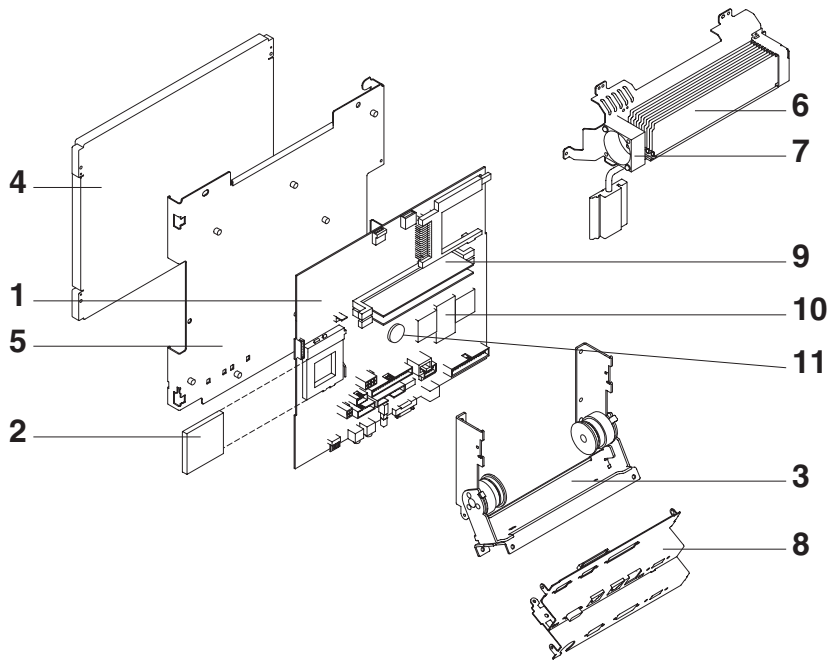
This chapter contains part number information for the FRUs that are part of the SurePOS 500/600 Series.

Assembly 1: External parts



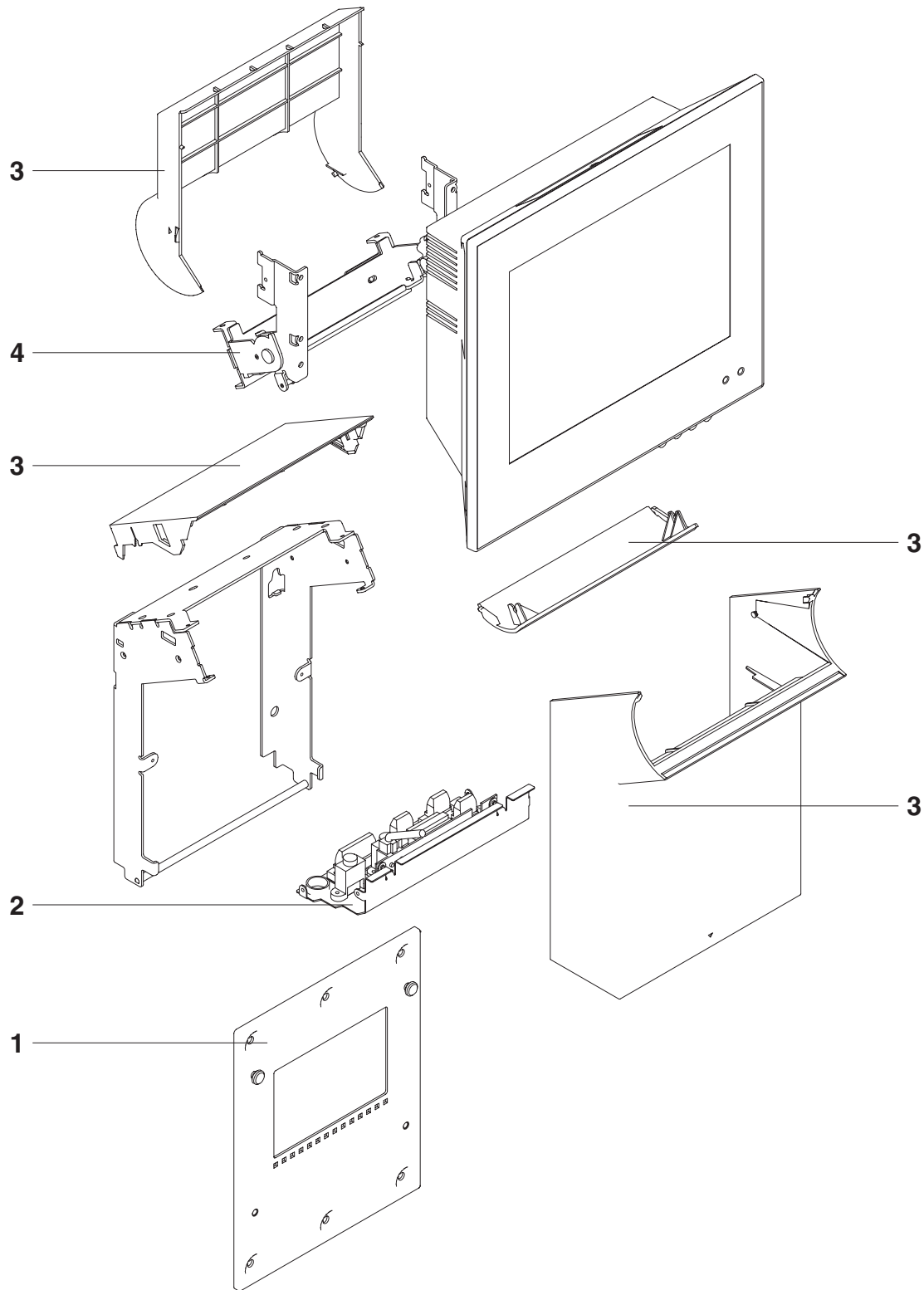
Asm- Index	Part Number	Units	Description
1-			External part numbers
-1	20P3951	1	Foot, base (includes feet, 4 screws) (counter mount only)
-2	20P3954	1	Plastic covers (base, display, front base, throat - kit) (counter mount only)
-3	20P3957	1	Sensor, presence (Models 561, 562 - includes cable, 2 screws)
-4	20P3959	1	Panels, filler (PC Card, MSR, integrated customer display)
-5	20P3972	1	Buttons, operator-panel (includes buttons, card, 5 screws and cable)
-6	20P3969	1	Touch screen assembly (Model 561 - includes front cover, touch panel data diskette, NOVRAM, and usage instructions)
-	66P2110	1	Touch screen assembly (Modes 562 - includes front cover, touch panel data diskette, NOVRAM, and usage instructions)
-	20P3990	1	Touch screen assembly (Models 531, 541, 551, and 651, - includes front cover, touch panel data diskette, NOVRAM, and usage instructions)
-	66P2111	1	Touch screen assembly (Models 532, 542, 642, 552, and 652 - includes front cover, touch panel data diskette, NOVRAM, and usage instructions)
-	10N0677	1	Touch screen assembly, 15-inch (Model 541 only, RPQ only)
-	20P3952	1	Touch screen assembly (Model 521 - includes front cover, touch panel data diskette, NOVRAM, and usage instructions)
-	47P9286	1	Front cover assembly (Models 611, 621 and 622 - includes front cover, non-touch panel)
I -7	20P3970	1	Bracket, HDD (includes 5 screws) (Models xx1 only)
I -	66P2115	1	Bracket, HDD or Compact Flash (includes 5 screws) (Models xx2 only)
-8	07P1310	1	Hard disk drive (10.1 GB)
-	10J1696	1	Hard disk drive (20 GB)
-	66P2106	1	Adapter assembly, CompactFlash (Model 532 only) (not shown)
-	66P2107	1	CompactFlash memory card, 64 MB (Model 532 only)
-	66P2108	1	CompactFlash memory card, 128 MB (Model 532 only)
I -	20P3956	1	Cables, HDD power and data (kit) (Models xx1 only)
I -	66P2114	1	Cables, HDD/CompactFlash power and data (kit) (Models xx2 only)
-9	15K2018	1	Power supply (Models xx1 only)
-	57P4085	1	Power supply (Models xx2 only)
-	20P3922	1	Cable, power connector DC (not shown) (counter mount only) (Models xx1 only)
I -	66P2101	1	Cable, 94 watt power connector DC (not shown) (counter mount only) (Models xx2 only)
I -10	20P3967	1	Covers (memory, cables, spill shield, drain shield)
-	20P3966	1	Hardware, miscellaneous (all screw sizes, washers, standoffs)
-	20P0368	1	Filler panel, wide PC Card wireless (not illustrated)
-	20P0369	1	Filler panel, narrow PC Card wireless (not illustrated)
-	03R7892	1	Cable, serial, RJ45, 0.75 meter (not shown)
-	03R7893	1	Cable, serial, RJ45, 2.0 meter (not shown)

Assembly 2: Internal parts



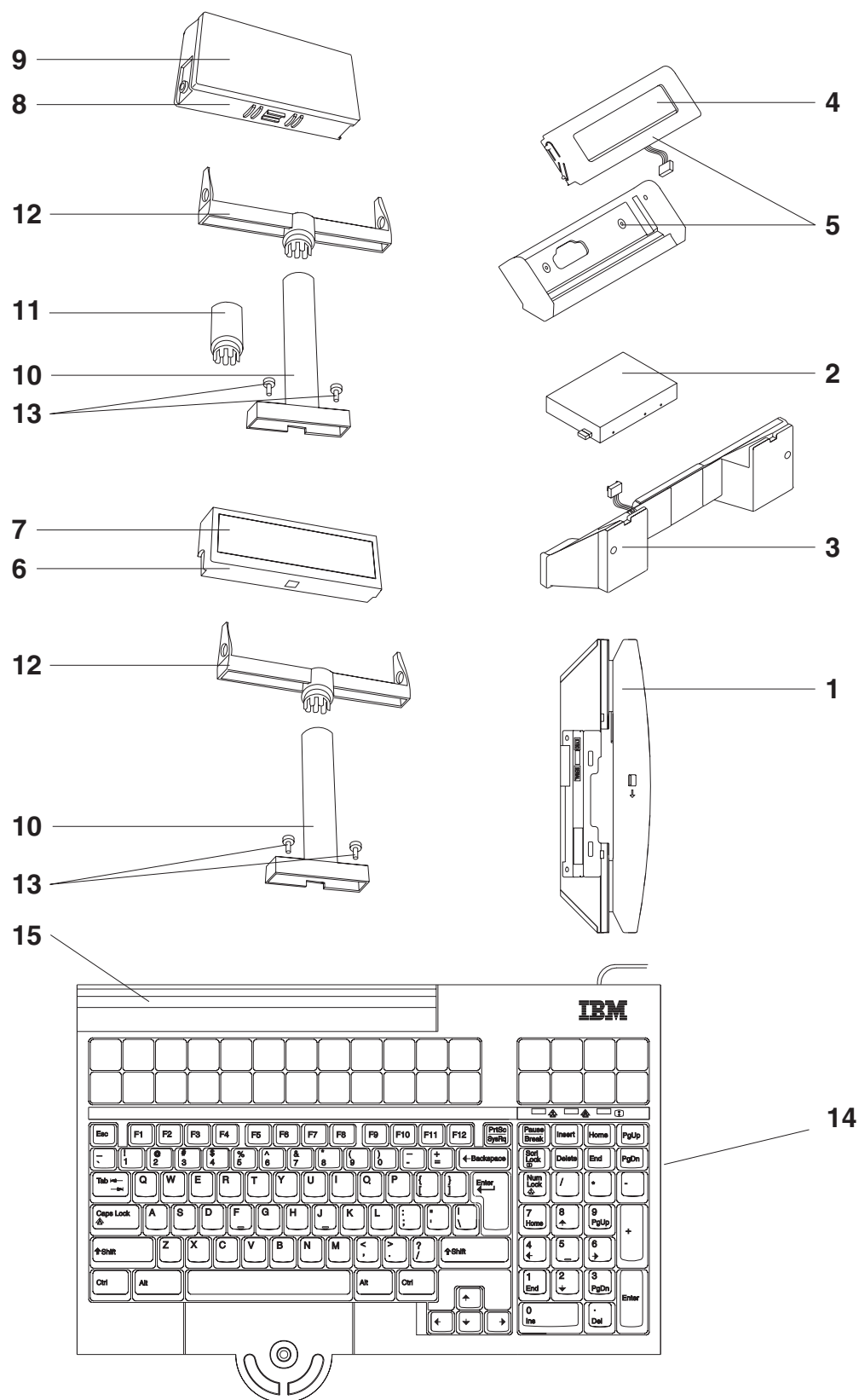
Asm- Index	Part Number	Units	Description
2-			Internal part numbers
-1	20P3980	1	Board, system (Model 521 and 541 - includes 6 screws)
-	20P3955	1	Board, system (Model 561 - includes 6 screws)
-	47P9283	1	Board, system, non-touch (no audio or PCMCIA) (Model 611)
-	47P9284	1	Board, system, non-touch (with audio and PC Card) (Model 621)
-	66P2109	1	Board, system, non-touch (with audio and PC Card) (Model 622)
-	47P9291	1	Board, system, touch (no audio or PC Card) (Models 521, 531 and 541)
-	66P2098	1	Board, system, touch (no audio or PC Card) (Model 532, 542, and 642)
-	47P9292	1	Board, system, touch (with audio and PC Card) (Models 551, 561 and 651)
-	61P5649	1	Board, system, touch (with audio and PC Card) (Model 552, 652, and 562)
-	10N0676	1	Board, system, touch (Model 541 RPQ with 15-inch LCD display only)
-2	20P3973	1	Processor (includes thermal grease) (Models xx1 only)
-	66P2104	1	Processor, 1.2 GHz Celeron (includes thermal grease) (Models xx2 only)
-3	20P3958	1	Hinge assembly (counter mount only)
I -4	20P3979	1	LCD (Model 521)
I -	20P3961	1	LCD (Models 541, 542, 561, 562, and 642)
I -	47P9282	1	LCD, Sanyo (Models 531, 532, 551, 552, 611, 621, 622, 651, and 652)
-5	20P3964	1	Shield, LCD (includes standoffs, grommet, I/O shield)
-6	20P3962	1	Heat pipe assembly (includes bracket, clip, fan, thermal grease, 4 screws) (Models xx1 only)
-6	66P2099	1	Heat pipe assembly, high flow (includes bracket, clip, fan, thermal grease, screws) (Models xx2 only)
-7	20P3963	1	Fan
-8	20P3968	1	Tailgate, counter mount (includes tailgate pieces, tailgate card, cables, power supply cable, mounting screws) (Models xx1 only)
-	66P2102	1	Tailgate, counter mount (includes tailgate pieces, tailgate card, cables, power supply cable, mounting screws) (Models xx2 only)
-9	20P3974	1	DIMM (32 MB) (Models xx1 only)
-	20P3975	1	DIMM, PC-100 (64 MB) (Models xx1 only)
-	03R7889	1	DIMM, PC-133 (64 MB) (Models xx2 only)
-	20P3976	1	DIMM, PC-100 (128 MB) (Models xx1 only)
-	03R7890	1	DIMM, PC-133 (128 MB) (Models xx2 only)
-	03R7891	1	DIMM, PC-133 (256 MB) (Models xx2 only)
-10	20P3978	1	Card, LCD, operator display (Model 521) (includes LCD daughter card, cable, LCD connector card)
I -	20P3960	1	Card, LCD, operator display (Models 541, 542 561, 562 and 642) (includes LCD daughter card, cable, LCD connector card)
I -	47P9285	1	Card, LCD, operator display (Models 531, 532, 551, 552, 611, 621, 622, 651, and 652)
-11	30L6297	1	CMOS battery

Assembly 3: Wall Mount feature parts



Asm- Index	Part Number	Units	Description
3-			Wall mount part numbers
-1	29P7103	1	Plate, wall mount (Note: Wall mount plate is the customer's responsibility to install)
-2	29P7100	1	Tailgate, wall mount (includes cables, DC power connector cable, mounting screws) (Models xx1 only)
-	66P2103	1	Tailgate, wall mount (includes cables, DC power connector cable, mounting screws) (Models xx2 only)
-3	29P7102	1	Plastic covers (base, rear, front throat, back throat - kit) (Models xx1 only)
-	66P2100	1	Covers, (Models xx2 only)
-4	29P7101	1	Hinge assembly (wall mount)
-	29P7104	1	Cable, power connector DC (not shown – wall mount models xx1 only)
-	66P2105	1	Cable, power connector DC (not shown – wall mount models xx2 only)

Assembly 4: Optional features

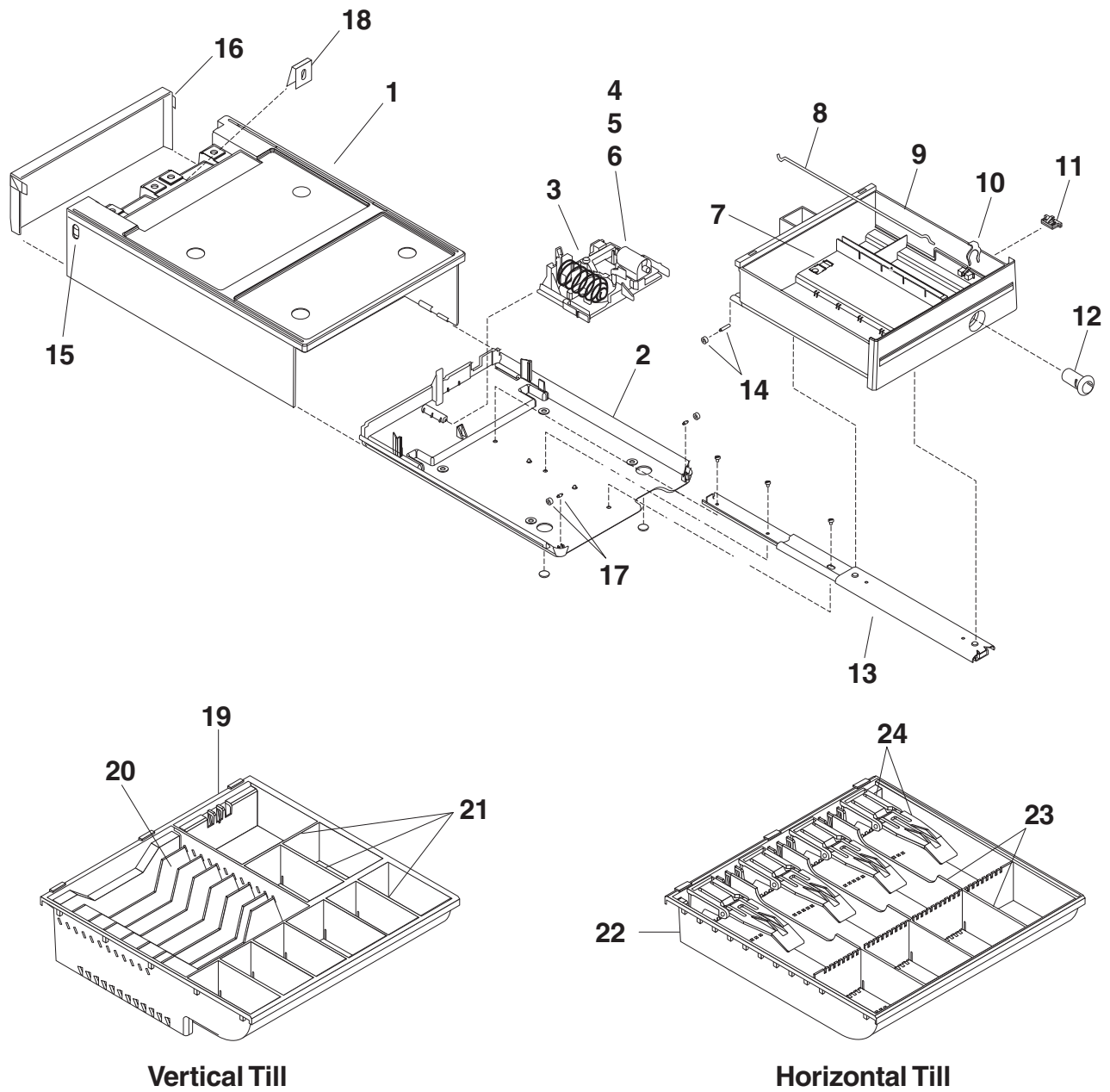


Asm- Index	Part Number	Units	Description
4-			Optional features
-1	15K2019	1	MSR, three-track, (Models xx1 only)
-	03R7895	1	MSR, three-track, (Models xx2 only)
-	15K2020	1	MSR, dual sided single track, (Models xx1 only)
-	03R7897	1	MSR, dual sided single track, (Models xx2 only)
-2	15K2023	1	Diskette drive, external 1.44 MB (kit)
-3	15K2024	1	Speaker, stereo (kit)
-4	15K2011	1	Display, integrated customer (2x20)
-5	20P3984	1	Holder and covers, integrated (2x20)
-6	15K2012	1	Display, distributed customer (2x20)
-7	15K2021	1	Display, distributed customer (APA)
-8	10J0851	1	Lens kit, distributed display (2x20)
-9	10J0849	1	Lens (smoke filter), distributed display (APA)
-10	20P0334	1	Mounting post assembly, distributed display
-11	20P0360	1	Post extension assembly
-12	20P0338	1	Yoke, one-sided, distributed display
-13	20P0337	2	Thumbscrews, mounting post
-	15K2022	1	Cable, distributed display (3.8 m)
-	20P0295	1	Cable, distributed display (0.8 m)
-	20P0365	1	Cable, RS-232 (short)
-	47P9273	1	Footprint adapter, printer (Iron Gray) (Models 531, 532, 551, 552, 611, 621, 622, 651, and 652)
-	47P9274	1	Plate assembly, terminal mounting (Models 531, 532, 551, 552, 621, 622, 651, and 652)
-	47P9280	1	Mounting post, SurePoint 4820 (Models 531, 532, 551, 552, 611, 621, 622, 651, and 652)
-	47P9281	1	Tray, hardware kit (Models 531, 532, 551, 552, 611, 621, 622, 651, and 652)
-	15K2025	1	Y-Cable, mouse and keyboard (Models 521, 541, 542, 561 and 562)
-	47P9290	1	Y-Cable, mouse and keyboard, thin black (Models 531, 532, 551, 552, 611, 621, 622, 651 and 652)
-14			Keyboards, CANPOS (Models 531, 551, 611, 621 and 651)
-	54P8779	1	• Keyboard, CANPOS (English)
-	54P8780	1	• Keyboard, CANPOS (UK English)
-	54P8781	1	• Keyboard, CANPOS (French)
-	54P8782	1	• Keyboard, CANPOS (Canadian French)
-	54P8783	1	• Keyboard, CANPOS (Spanish)
-	54P8784	1	• Keyboard, CANPOS [Portuguese (BR.)]
-	54P8785	1	• Keyboard, CANPOS (German)
-	54P8786	1	• Keyboard with MSR, CANPOS (English)
-	54P8787	1	• Keyboard with MSR, CANPOS (UK English)
-	54P8788	1	• Keyboard with MSR, CANPOS (French)
-	54P8789	1	• Keyboard with MSR, CANPOS (Canadian French)
-	54P8790	1	• Keyboard with MSR, CANPOS (Spanish)
-	54P8791	1	• Keyboard with MSR, CANPOS [Portuguese (BR.)]
-	54P8792	1	• Keyboard with MSR, CANPOS (German)
-	54P8817	1	• Top cover, CANPOS keyboard (English)
-	54P8818	1	• Top cover, CANPOS (keyboard UK English)
-	54P8819	1	• Top cover, CANPOS keyboard (French)
-	54P8820	1	• Top cover, CANPOS keyboard (Canadian French)
-	54P8821	1	• Top cover, CANPOS keyboard (Spanish)
-	54P8822	1	• Top cover, CANPOS keyboard [Portuguese (BR.)]
-	54P8823	1	• Top cover, CANPOS keyboard (German)
-	54P8824	1	• Internal card assembly, CANPOS keyboard (German)

Asm- Index	Part Number	Units	Description
—	54P8827	1	• Integrated cable, CANPOS keyboard
—	54P8828	1	• Distributed cable, CANPOS keyboard
—	54P8807	1	• Integrated cable single end, right angle, CANPOS keyboard
—	54P8808	1	• Distributed cable single end, right angle, CANPOS keyboard
—	54P8829	10	• 1 x 2 keycap, CANPOS keyboard (Quantity x10)
—	54P8830	10	• 1 x 1 keycap, CANPOS keyboard (Quantity x10)
—	60G4142	4	• Screw (4), keyboard housing
—15	54P8855	1	• MSR, three-track, for CANPOS keyboard
—	90X9640	1	• Test card, MSR

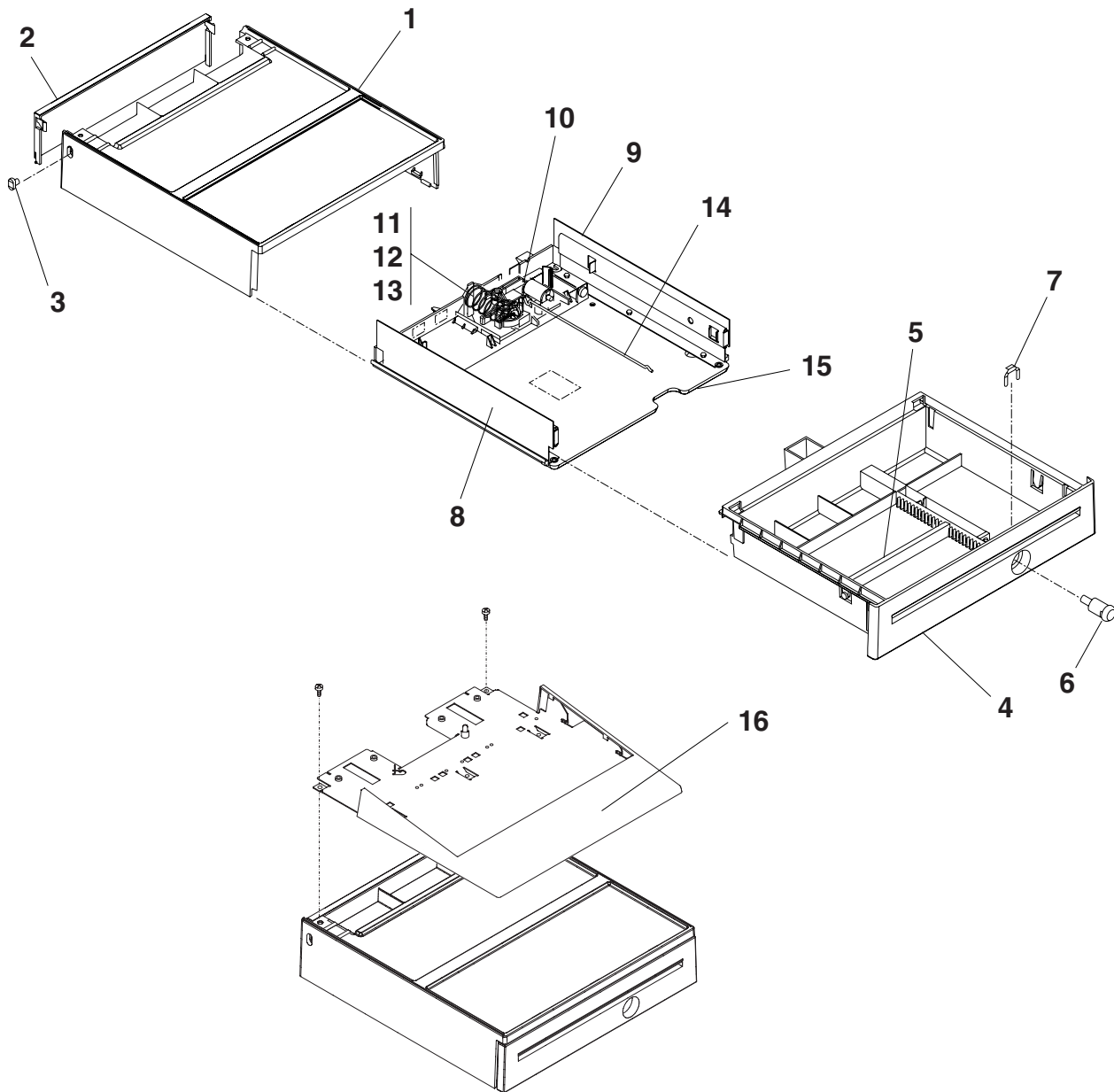
Updated August 7, 2003

Assembly 5: Compact cash drawer



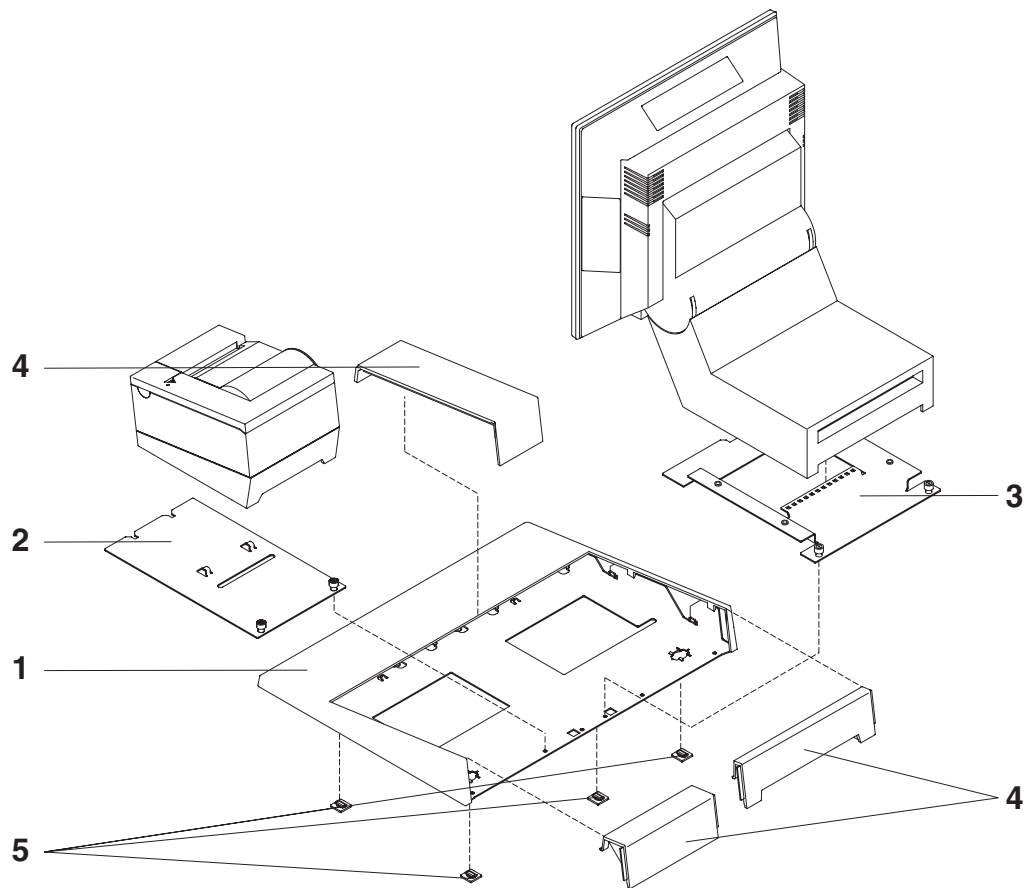
Asm- Index	Part Number	Units	Description
5-			Compact cash drawer
-1	15K2009	1	Cover assembly, top
-2	20P0331	1	Base
-3	42H3783	1	Latch, drawer
-4	93F1915	1	Spring, propulsion
-5	93F1916	1	Card assembly (24 V)
-6	93F1913	1	Cam, pawl, latch spring (kit)
-7	10H3375	1	Latch assembly
-8	93F1905	1	Rod, actuator
-9	15K2010	1	Cash drawer assembly, compact (includes index 7 and 14)
-	47P9272		Cash drawer plate/fence assembly (Models 531, 532, 551, 552, 611, 621, 622, 651 and 652)
-	47P9277		Panels, filler (Models 531, 532, 551, 552, 611, 621, 622, 651 and 652)
-10	42H3785	1	Clip, lock
-11	10H3355	1	Opener, coin roll
-12	93F1909	1	Cylinder, lock
-	4783923	1	Insert, lock, non operational
-	33G3352	1	Lock
-	33G3353	1	Lock
-	33G3354	1	Lock
-	33G3355	1	Lock
-	33G3356	1	Lock
-	33G3357	1	Lock
-	33G3358	1	Lock
-	33G3359	1	Lock
-	33G3360	1	Lock
-	33G3361	1	Lock
-	4783922	1	Lock change kit
-13	10H3316	1	Slide
-14	10H3373	1	Rollers and shafts (kit)
-15	20P0276	2	Button, modesty cover
-16	20P0329	1	Cover, modesty
-17	10H3374	1	Bearings and shafts (kit)
-18	10H3378	1	Clip, emergency open
-19	10H3331	AR	Till insert, vertical
-20	10H3379	AR	Divider, bill, vertical till (kit)
-21	10H3380	AR	Divider, coin, vertical till (kit)
-22	10H3371	AR	Till insert, horizontal
-23	10H3381	AR	Divider, horizontal till (kit)
-24	10H3319	AR	Retainer, bill
-	10H3341	AR	Cover, till, locking (not illustrated)
-	13H9612		Bracket, under counter mounting (not illustrated)
-	72H7814	1	Packaging (not illustrated)
-	6316831	1	0.5 m (19.69 in.), cash drawer cable
-	6316832	1	3.8 m (149.6 in.), cash drawer cable
-	10F1143	1	0.53 m (20.87 in.), cash drawer cable (need for some integrated tray configurations)

Assembly 6: Standard cash drawer



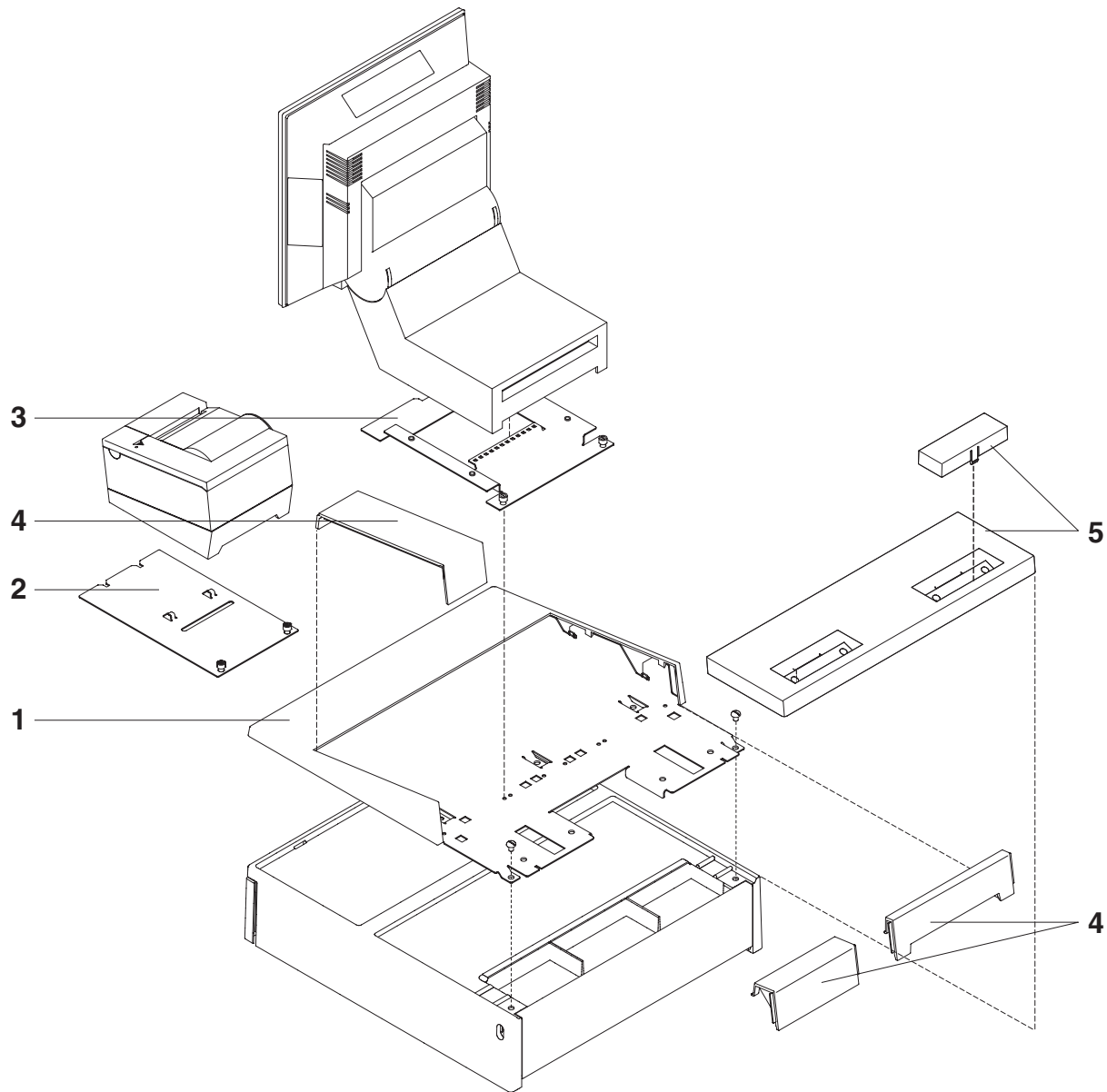
Asm- Index	Part Number	Units	Description
6-			Standard cash drawer
-1	20P0277	1	Cover assembly, top
-2	20P0279	1	Cover, modesty
-3	20P0276	2	Button, modesty cover
-4	20P0278		Cash drawer assembly, standard
-16	47P9271		Cash drawer plate/fence assembly (Models 531, 532, 551, 552, 611, 621, 622, 651 and 652)
-	47P9276		Panels, filler (wide and countertop) (Models 531, 532, 551, 552, 611, 621, 622, 651 and 652)
-5	93F1897	1	Stop, document
-6	93F1909	1	Cylinder, lock
-	4783923	1	Insert, lock, non operational
-	33G3352	1	Lock
-	33G3353	1	Lock
-	33G3354	1	Lock
-	33G3355	1	Lock
-	33G3356	1	Lock
-	33G3357	1	Lock
-	33G3358	1	Lock
-	33G3359	1	Lock
-	33G3360	1	Lock
-	33G3361	1	Lock
-	4783922	1	Lock change kit
-7	42H3785	1	Clip, lock
-8	93F1906	1	Slide, left
-9	93F1907	1	Slide, right
-10	42H3783	1	Latch assembly
-11	93F1915	1	Spring, propulsion
-12	93F1916	1	Card assembly (24 V)
-13	93F1913	1	Cam, pawl, latch spring (kit)
-14	93F1905	1	Rod, actuator
-15	20P0280	1	Base
-	4783869	AR	Tray, fixed till (not illustrated)
-	4783870	AR	Tray, adjustable till (not illustrated)
-	4783875	AR	Mount, bill retainer (not illustrated)
-	4783876	AR	Retainer, bill (not illustrated)
-	4783877	AR	Partition, coin (not illustrated)
-	4783878	AR	Partition, bill (not illustrated)
-	4783879	AR	Till insert, fixed (not illustrated)
-	4783880	AR	Till insert, adjustable (not illustrated)
-	6316718	AR	Cover, till (locking - not illustrated)
-	13H9612	1	Bracket, under-counter mounting (not illustrated)
-	72H3825	1	Packaging
-	42H3791	1	Repair kit, drawer
-	6316831	1	0.5 m (19.69 in.), cash drawer cable
-	6316832	1	3.8 m (149.6 in.), cash drawer cable
-	10F1143	1	0.53 m (20.87 in.), cash drawer cable (need for some integrated tray configurations)

Assembly 7: Countertop non-keyboard integration tray and filler panels



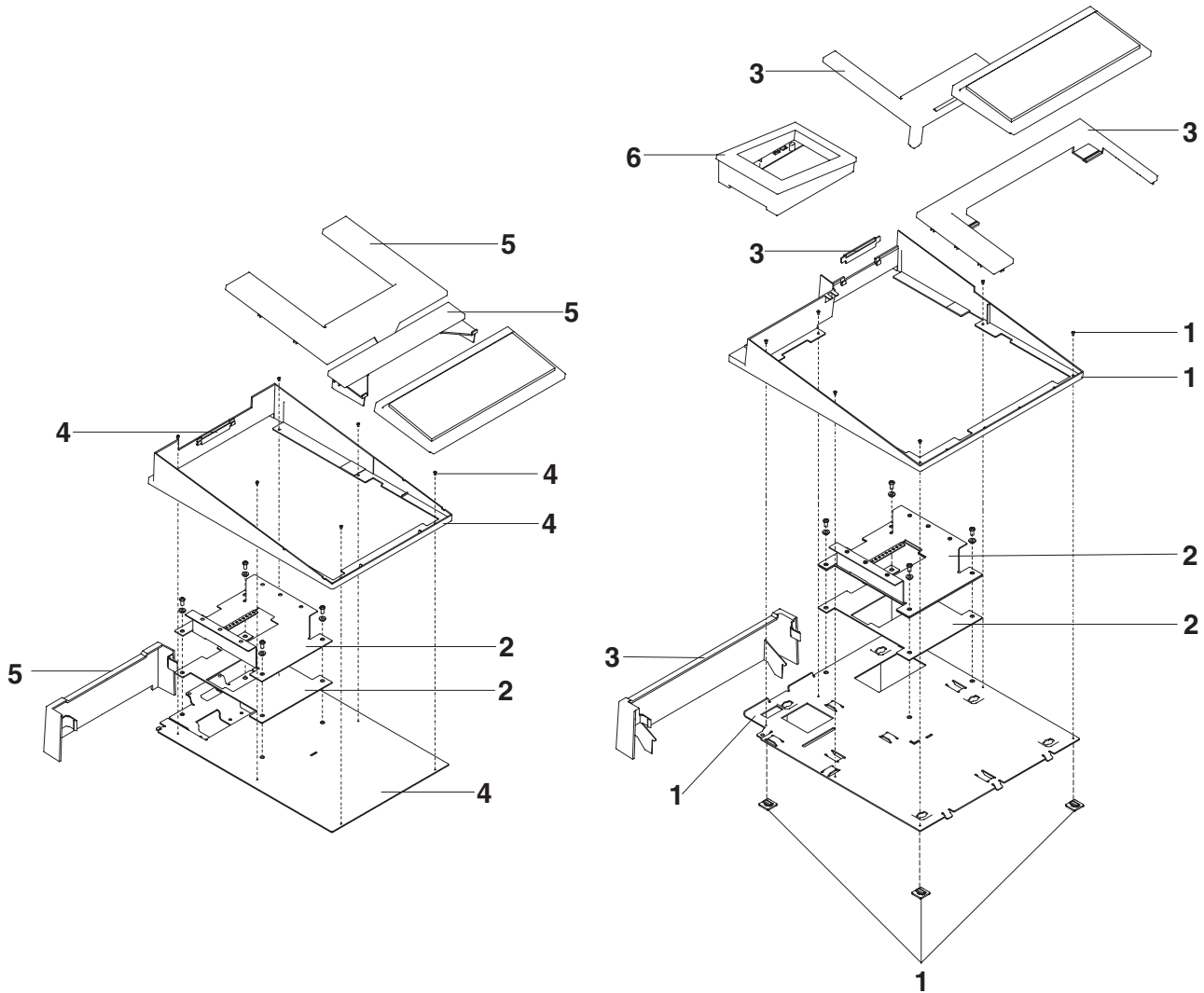
Asm- Index	Part Number	Units	Description
7-			Countertop non-keyboard integration tray and filler panels
-1	20P0304	1	Plate and fence, countertop mount
-2	20P0305	1	Plate, printer mounting
-3	20P0306	1	Plate, terminal mounting
-4	20P0307	1	Panels, filler (1 center - narrow, 2 side - wide, 2 rear - system and printer)
-	47P9276		Panels, filler (wide and countertop) (Models 531, 532, 551, 552, 611, 621, 622, 651 and 652)
-	20P0309	1	Hardware, non-keyboard integration tray (kit - includes feet and screws, not illustrated)
-5	93F0663	1	Feet, rubber (5)

Assembly 8: Cash drawer non-keyboard integration tray and filler panels



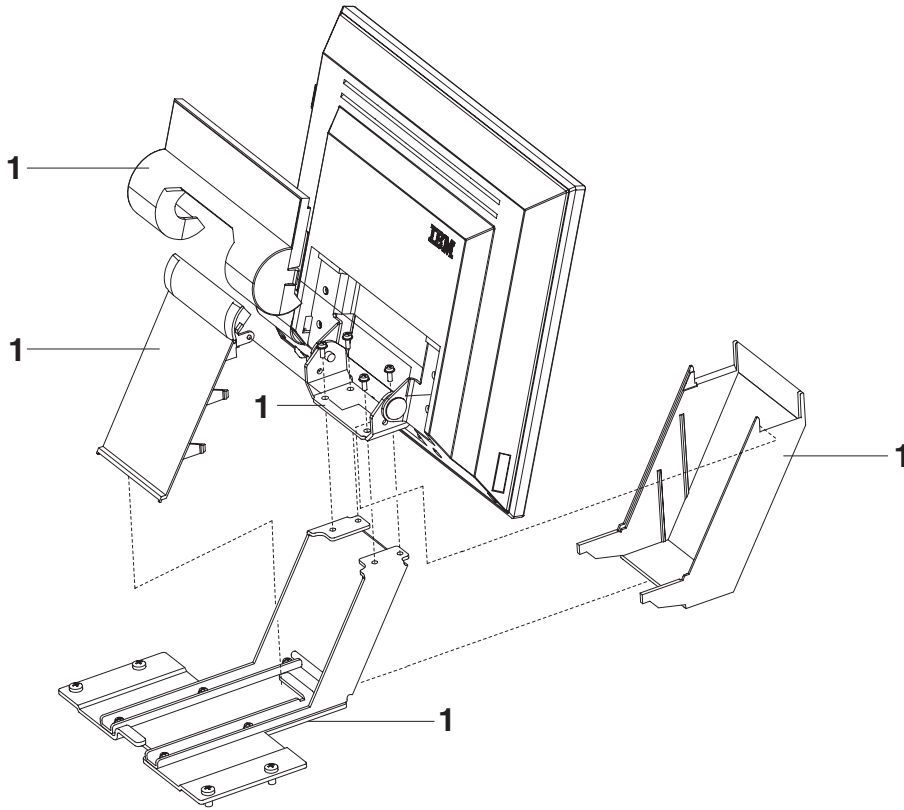
Asm- Index	Part Number	Units	Description
8-			Cash drawer non-keyboard integration tray and filler panels
-1	20P0303	1	Plate and fence, cash drawer mount
-2	20P0305	1	Plate, printer mounting
-3	20P0306	1	Plate, terminal mounting
-4	20P0307	1	Panels, filler (1 center - narrow, 2 side - wide, 2 rear - system and printer)
-5	20P0308	1	Cover, modesty
-	20P0309	1	Hardware, non-keyboard integration tray (kit - includes screws, not illustrated)

Assembly 9: Countertop and cash drawer keyboard integration tray and filler panels



Asm- Index	Part Number	Units	Description
9-			Countertop and cash drawer keyboard integration tray and filler panels
-1	47P9271	1	FRU, plate/fence ASM, wide cash drawer or countertop (includes hardware)
-		1	• ASM, wide cash drawer plate
-		1	• - M6X8 screws, cash drawer mount
-		1	• - Fence, wide
-		1	• - M3X5 screws, fence mounting
-		1	• - Feet, rubber
-2	47P9274	1	FRU, plate ASM, terminal mounting
-		1	• ASM, terminal mount
-		1	• - Plate, terminal mount insulator
-		1	• - Washer, insulating
-		1	• - M6X12 screws, terminal mount
-3	47P9276	5	FRU, filler panels, wide and countertop
-		1	• Cover, keyboard filler, retail keyboard
-		1	• Cover, terminal filler, wide tray and countertop
-		1	• Cover, wide CD rear curtain
-		1	• Fence, plug
-4	47P9272	1	FRU, plate/fence ASM, wide cash drawer or countertop (includes hardware)
-		1	• ASM, narrow cash drawer plate
-		1	• - M6X8 screws, cash drawer mount
-		1	• - Fence, narrow
-		1	• - M3X5 screws, fence mounting
-5	47P9277	4	FRU, filler panels, wide and countertop
-		1	• Cover, keyboard filler, retail keyboard
-		1	• Cover, narrow CD rear curtain
-		1	• Fence, plug
-6	47P9273	1	FRU, Iron gray printer footprint adapter – SST to 4610 (not shown)
-		1	• ASM, iron gray printer footprint adapter
-		1	• - Base, SST to 4610 footprint, iron gray
-		1	• - Panel, SST to 4610 footprint, iron gray
-		1	• - Feet, printer base
-	57P4062	1	FRU, Retail integration, installation hardware kit (not show)
-		1	• Hardware kit, retail integration
-		1	• -M3X5 screws, fence mounting (6)
-		1	• -M5X10 screws, system unit mounting (4)
-		1	• -M6X12 screws, terminal mounting (4)
-		1	• -Washer, insulation (for terminal mount screws) (4)
-		1	• -M6X8 screws, CD plate mounting (4)
-		1	• -Feet, CD plate countertop mounting (5)

Assembly 10: 4820 mounting hardware and covers

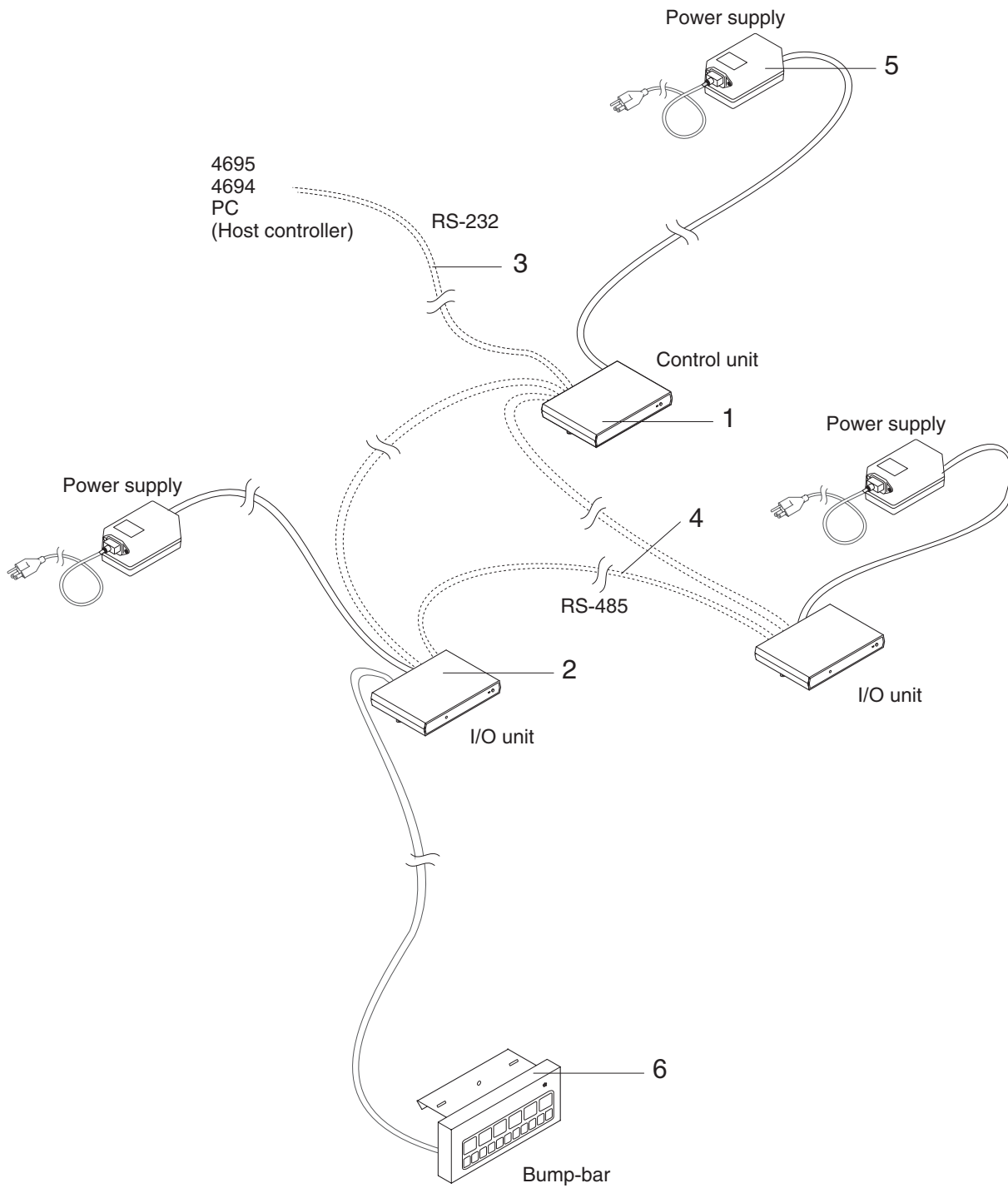


Asm- Index	Part Number	Units	Description
10-	47P6405		4820 mounting hardware and covers
-1		1	Assembly, 4820 to terminal mounting kit includes mount and all covers
-		1	• Plate, 4820 to terminal
-		1	• Bracket, 4820 to plate
-		1	• Cover, outside 4820 mount
-		1	• Cover, inside 4820 mount
-		1	• Cover, hinge

Assembly 11: Tools (not shown)

Asm- Index	Part Number	Units	Description
11-			Tools
-	00G2380	1	Wrap plug, Ethernet (not illustrated)
-	72X8546	1	Wrap plug, RS-232 and parallel port (not illustrated)
-	15K2023	1	Diskette drive, external 1.44 MB (kit)

Assembly 12: Kitchen system



Asm- Index	Part Number	Units	Description
12-			Kitchen system for all models except 611 and 621
-1	86H2131	1	Control unit
-2	86H2134	1	I/O unit
-3	86H2145	1	Control unit cable
-4	86H2148	1	I/O unit cable
-5	86H2140	1	Power supply
-6	85H7995	1	Bump bar

Appendix B. Power cords

Table 14. Power cords

Part number	Length	Country
13F9938	4.3M	Argentina, Australia, New Zealand
13F9977	4.3M	Europe, Korea
13F9995	4.3M	Denmark
14F0013	4.3M	South Africa
14F0031	4.3M	United Kingdom, Hong Kong
14F0049	4.3M	Switzerland
14F0067	4.3M	Chile, Italy
14F0085	4.3M	Israel
34G0230	4.3M	Japan
6952296	4.3M (non-locking)	United States
6952298	1.8M	United States, Chicago
7842130	4.3M (locking)	United States

Appendix C. Connector-pin assignments

This appendix lists the connector-pin assignments for the external and internal connectors.

External connectors

The following sections show the connector-pin assignments for external connectors.

Speaker kit connector

This connector is functional only for Models 551, 552, 561, 562, 621, 622, 651, and 652.

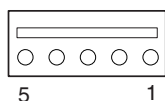


Table 15. Speaker kit connector-pin assignments

Pin	Connector
1	+10.8 V dc at 0.3 A maximum
2	Ground
3	Line L
4	Ground
5	Line R

MSR connector

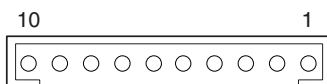


Table 16. MSR connector-pin assignments

Pin	Connector
1	+5 V dc
2	Serial data in
3	Serial data out
4	Ground
5	MSR present
6	MSR mode
7	Keyboard enable
8	Keyboard data
9	Keyboard clock
10	Ground

USB port connector (2)

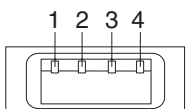


Table 17. USB port connector-pin assignments

Pin	Connector
1	+5 V dc
2	–Data
3	+Data
4	Ground

Keyboard and mouse connector

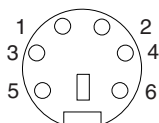


Table 18. Keyboard and mouse connector-pin assignments

Pin	Signal	I/O	Pin	Signal	I/O
1	Keyboard data	I/O	4	+5 V dc	
2	Mouse data	I/O	5	Keyboard clock	I/O
3	Ground		6	Mouse clock	I/O

Microphone connector

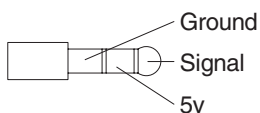


Table 19. Microphone connector-pin assignments

Pin	Signal
Tip	Signal
Ring	+5 V dc
Base	Ground

Headphone connector

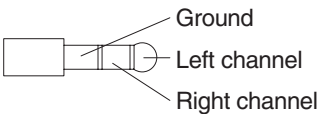


Table 20. Headphone connector-pin assignments

Pin	Signal
Tip	Left channel audio
Ring	Right channel audio
Base	Ground

Serial connectors

9-pin serial connector (3)

The 9-pin serial connector is a male connector.

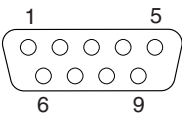


Table 21. Assignment for 9-pin serial connector

Pin	Signal	I/O	Pin	Signal	I/O
1	Carrier detect	I	6	Data set ready	I
2	Receive data	I	7	Request to send	O
3	Transmit data	O	8	Clear to send	I
4	Data terminal ready	O	9	Ring indicator	I
5	Signal ground				

RJ-45 Connectors

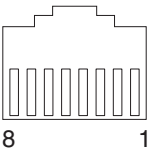


Table 22. RJ-45 connector-pin assignments

Pin	Signal	Pin	Signal
1	DSR	5	RXD
2	CD	6	TXD
3	DTR	7	CTS
4	Ground	8	RTS

15-pin serial connector

The 15-pin serial connector is a female connector.

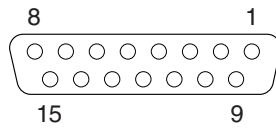


Table 23. Assignments for 15-pin serial connector

Pin	Connector	Pin	Connector
1	Carrier detect	8, 9	+12 V dc at 0.5 A maximum
2	Receive data	11	Distributed display present
3	Transmit data	12	Data set ready
4	Data terminal ready	13	Request to send
5	Ground	14	Clear to send
6	Ground	15	Ring indicate
7, 10	+5 V dc at 0.5 A maximum		

Parallel connector

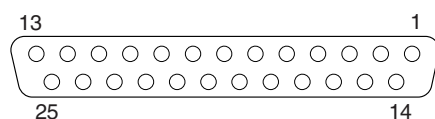


Table 24. Assignment of parallel-connector pins

Pin	Signal	I/O	Pin	Signal	I/O
1	Strobe#	I/O	14	Auto Fd XT#	O
2	Data bit 0	I/O	15	Error#	I
3	Data bit 1	I/O	16	Init#	O
4	Data bit 2	I/O	17	Slct In#	O
5	Data bit 3	I/O	18	Ground	
6	Data bit 4	I/O	19	Ground	
7	Data bit 5	I/O	20	Ground	
8	Data bit 6	I/O	21	Ground	
9	Data bit 7	I/O	22	Ground	
10	Ack#	I	23	Ground	
11	Busy	I	24	Ground	
12	Pe	I	25	Ground	
13	Slct	I			

Diskette-drive connector

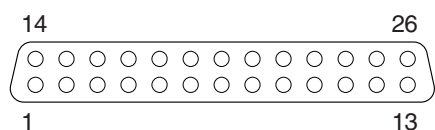


Table 25. Assignment of diskette-drive connector pins

Pin	Signal	I/O	Pin	Signal	I/O
1	Ground		14	No connection	
2	+5 V dc		15	No connection	
3	Ground		16	No connection	
4	Ground		17	Index sensing	I
5	No connection		18	No connection	
6	Drive select 0	O	19	No connection	
7	Motor control 0	O	20	Ground	
8	Direction (0=inward, 1=outward)	O	21	Track step pulse	O
9	Write data	O	22	Write gate	O
10	Ground		23	Track 0 sensing	I
11	Drive density select 0	O	24	Write protect	I
12	Read data	I	25	Head select (0=side 1, 1=side 0)	O

Table 25. Assignment of diskette-drive connector pins (continued)

Pin	Signal	I/O	Pin	Signal	I/O
13	No connection		26	Diskette change	I

Ethernet connector

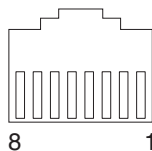


Table 26. Ethernet connector-pin assignments

Pin	Signal	I/O	Pin	Signal	I/O
1	TxD+	O	5	Ground	
2	TxD-	O	6	RxD-	I
3	RxD+	I	7	Ground	
4	Ground		8	Ground	

External video connector

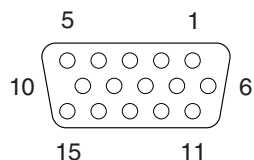


Table 27. Assignment of external-video connector pins

Pin	Connector	Pin	Connector
1	Red	9	No connection
2	Green	10	Ground
3	Blue	11	No connection
4	No connection	12	Monitor ID1
5	Ground	13	Horizontal sync
6	Red ground	14	Vertical sync
7	Green ground	15	Monitor ID3
8	Blue ground		

Cash drawer connector (2)

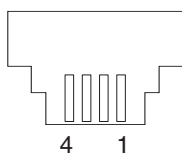


Table 28. Assignment of cash drawer connector pins

Pin	Connector
1	Ground
2	Sensor
3	Open signal
4	+24 V dc

Integrated customer display connector

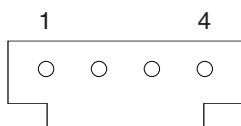


Table 29. Assignment of integrated customer-display connector pins

Pin	Connector
1	+5 V dc at 0.5 A maximum
2	Transmit data
3	Integrated customer display present
4	Ground

Appendix D. IRQ and DMA channel assignments

This appendix lists the interrupt request (IRQ) and direct memory access (DMA) channel assignments. The IRQs listed in Table 30 are not shareable, but you can make them available for use by another device as noted.

Table 30. IRQ assignments - fixed

IRQ	System resource	Comments
NMI	Critical system error	
SMI	System management interrupt for power management	
0	System Timer	
1	PS/2 Keyboard	
2	Cascade	
6	Diskette Drive	Available if diskette drive not attached
8	Real-time clock	
9	ACPI	Available if APM mode used
12	Mouse	
13	Floating Point	
14	HDD controller	
15	Touch	

Other system resources typically reside at certain IRQs, but you can relocate some IRQs if necessary. Some resources are optional and not installed, and you can disable an installed resource to make its IRQ available. Table 31 identifies these resources and IRQs.

Table 31. Relocatable IRQs

System Resource	Typical/default IRQ
Serial port A	4
Serial port B	3
LPT1	7
Serial port C	Disabled by default. Use requires disabling other legacy resource to provide IRQ
Serial port D VFD	11
Audio, Ethernet, USB, PCMCIA	5
Serial port E MSR	10

To enable the use of serial port C by Windows, you must disable a system function that has an IRQ assigned. Candidate functions for releasing IRQs, and their default assignments, are:

- IRQ6, assigned to the diskette drive
- IRQ7, assigned to the parallel port (LPT1)
- IRQ10, assigned to serial port E, MSR

- IRQ11, assigned to serial port D (VFD)

Table 32. DMA channel assignments

DMA channel	Data width	System resource
0	8 bits	User available for ISA bus
1	8 bits	User available for ISA bus (normally used for LAN)
2	8 bits	Reserved, diskette drive
3	8 bits	Parallel port if ECP; otherwise, user available for ISA bus
4		Reserved, cascade channel
5	16 bits	User available for ISA bus
6	16 bits	User available for ISA bus
7	16 bits	User available for ISA bus

Appendix E. Operating and maintaining the system

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This chapter explains how to operate and maintain the SurePOS 500/600 Series.

Using the operator display

Before you begin using the display, follow these tips to ensure that you are comfortable:

- Keep your head in a comfortable viewing position.
- Maintain a comfortable viewing distance.
- Position the display to avoid glare or reflection from overhead lighting or outside sources of light.

Note: When tilting the display, do not attempt to force it in either direction after reaching the end of its movement range.

- Keep the screen clean from dust and dirt by regularly performing the steps at “Cleaning the screen”
- Set levels of brightness and of contrast that allow you to see clearly.

Using the brightness controls

Pressing the pair of buttons (– or +) at the lower right corner of the display adjusts the display brightness down or up.

Using the contrast controls (Model 521 only)

Pressing the pair of buttons (– or +) at the lower right corner of the display adjusts the display contrast down or up.

Cleaning the screen

Keeping the screen free from dirt and dust enables the screen to operate effectively. Follow these guidelines:

- Use a soft, dry cloth with isopropyl alcohol or any non-abrasive and non ammonia-based cleaner and non chlorine-based cleaner. Do not apply cleaning solution directly to the screen. Always spray the cleaner on a clean cloth and then wipe the screen.
- Wipe gently across the surface.
- Allow a few minutes for the surface to dry before using.

Using the touch screen

Before you use the touch screen, follow this tip:

- With your finger or a manufacturer-approved stylus provided for use with the touch screen, press the touch screen only as hard as necessary for use.

Attention: Do not use a pen or other sharp object to press the touch screen.

Calibrating the touch screen in Windows®

This section describes how to calibrate the touch screen using the MicroTouch TouchWare application.

Touching and calibrating the screen

Note: During calibration, the lift-off position of your touch, and not the touchdown position, determines the calibration position. If you do not touch down on the screen accurately, you can slide your finger to the center of the calibration target. Hold your finger as still as possible after you reach the target. Do not use a swiping motion during lift-off.

The calibration process defines the center and the limits of the touch screen's active area. Calibrate the touch screen when:

- You initially install the TouchWare
- The cursor does not accurately follow your finger movement
- You change the video resolution or video mode
- You adjust the touch-screen controller frequency using the Stabilize Cursor function
- You enable or disable the Filtering option

Steps for calibrating

Launch the TouchWare application. For consistent calibration accuracy, perform the following steps:

1. Select the **Touch Settings** tab
2. Select **Desktop Mode** before continuing

This choice allows you to slide your finger to the calibration point before lifting your finger off of the screen. Follow these steps to calibrate:

1. Allow the system to warm up for 30 minutes before you begin calibration.
2. Select **Touchscreen Properties**. In the dialog box, select the **Calibrate** tab.
3. Click **Calibrate**. Calibration targets display on the screen.
4. Press your fingertip directly on the target identified by the on-screen indicator and hold it there for at least 3 seconds. The indicator blinks during calibration.
5. When the indicator stops blinking and the **Touch Enabled** message displays, lift your finger off of the screen.
6. Repeat steps 4 and 5 until you have pressed all targets.
7. The program saves the new calibration values and displays a dialog box.

8. Test the calibration as described in “Testing the calibration”.

Testing the calibration

1. Touch random points on the screen and ensure that the cursor repositions itself directly under your finger.
2. Drag your finger across the screen. Verify that the cursor accurately follows your movements.
3. Touch each corner and along each edge of the screen. Check that the cursor can access all points on the screen, and that you can touch and activate all icons and menus.
4. If any part of the test fails, calibrate the touch screen again.

Specifying the touch-response mode

The touch-response mode defines how your touch emulates the functions of a mouse. For example, you can specify that a touch generates either a *button down* (pressing a mouse button) or *button up* (releasing the mouse button).

Touch-response modes also define how your touch generates a single or double mouse click. To select a touch-response mode, use the Touch Settings tab or the Special tab. Some modes require you to select options on both tabs. The TouchWare application supports the following touch modes:

Desktop Mode (default)

The program moves the cursor to the touch point, but does not generate a button down as long as you continue to slide your finger around the screen. When you pause and hold your finger steady, the system generates a mouse button down. You can now slide your finger around the screen. When you lift your finger, the system generates a button up.

Drawing Mode

The system moves the cursor to the touch point and generates a button down. You can move your finger around the screen with the “button” held down. When you lift your finger, the system generates a button up.

Button Mode

The system moves the cursor to the touch point and generates a button down and then a button up (a click). To drag, move your finger on the screen button down. When you lift your finger, the system generates a button up.

Click Mode

The system moves the cursor to the touch point and immediately generates a button down and then a button up (a click). Click mode does not generate a second button down, does not support drag, and does not generate an event when you lift your finger.

Lift-off Mode

The system moves the cursor to the touch point, but *does not* generate a button down. You can slide your finger around the screen and your movements are followed; however, the system generates only move events. Lifting your finger off of the screen generates a button down. The system then waits for a system-defined time delay, and generates a button up. The system does not support drag in this mode; however, lift-off mode is useful for applications that require fine accuracy.

Touchdown Mode

The system moves the cursor to the touch point, generates a button down,

waits for a system-defined time delay, and generates a button up. The system does not generate an event when you lift your finger. The system does not support drag in this mode.

Table 33 describes how to click, double-click, and drag with the touch response modes.

Table 33. Summary of touch-response modes

Touch mode	How to click	How to double-click	How to drag
Desktop	Touch the object and lift your finger.	Touch twice in quick succession in the same place.	Touch the object, pause briefly, and slide your finger.
Drawing			
Button	Touch the object.		Not supported.
Click			
Lift-off			
Touchdown	Touch the object. Provides a pause for you to receive visual feedback that a button was pressed and released.	Touch twice in quick succession in the same place.	Not supported.

Specifying the touch beep

You can configure your touch screen so that it produces a beep when you touch the screen or when you lift your finger off of the screen. To enable or disable the touch beep:

- Select the **Touch Settings** tab to access the Touch Sound option.
- Select **Beep** to cycle through the choices:
 - Beep on touchdown produces a beep when you touch the screen
 - Beep on lift-off produces a beep when you lift your finger off of the screen.
 - Beep off (default) disables beeping when you touch the screen.

Customizing the touch beep: If you enable the touch beep, you can customize both frequency (pitch) and duration. To customize the touch beep:

- Select the **Special** tab to access the Custom Touch Sound options.
- Click the right and left arrows to change the frequency (pitch) and duration of the touch beep. The range of settings is as follows:
 - Frequency: 200 to 5 000 Hz in 10-Hz increments (default is 1 500 Hz)
 - Duration: 50 to 600 ms in 10-ms increments (default is 200 ms)

Other adjustments to the touch screen

This section provides a summary of other TouchWare features. For additional information, refer to the program online help.

Adjusting the double-click settings: You can adjust the speed and area values of the double-click. The **speed value** defines how quickly you must touch the screen twice for the system to interpret your actions as a double-click. The **area value** defines the size of the space in which you must touch twice for the system to interpret your actions as a double-click. Changing these settings for the touch screen also changes the mouse double-click settings.

Changing the cursor display and position: After calibration, the cursor appears directly beneath your finger when you touch the screen. The Cursor tab provides options, which enable you to set the following preferences:

Cursor Visibility

Specifies whether to show or hide the cursor

Cursor Vertical Offset

Defines the vertical distance between your touch point and the position of the cursor on the screen

Edge Adjustment

Adjusts the cursor position as your finger approaches the left or right edge of the screen

Stabilizing a jittery cursor: The Stabilize Cursor option adjusts the operating frequency of your touch screen to ensure that the cursor follows your touch smoothly and accurately. Normally, you will not need to stabilize the cursor. However, if you experience problems with a jittery cursor or ragged lines, use this option.

Using the Filtering option: The Filtering option allows you to select additional filtering to eliminate the interference that may occur in ungrounded 50 HZ or 60 Hz touch systems. This option is intended only for use in ungrounded systems. The default Filtering setting is disabled. If erratic touch-screen problems occur, enable this option.

Uninstalling and reinstalling TouchWare drivers

When reinstalling TouchWare drivers, you must uninstall the existing drivers using the *TouchWare Uninstall* program. The Uninstall program removes all TouchWare components from your system. These components include TouchWare files, directories, program folders, and folder items. The Uninstall program also removes all TouchWare entries from the system registry files. You must restart the system before installing new TouchWare driver.

Note: Do not use the Windows uninstall program; it will not completely uninstall the old TouchWare drivers.

To uninstall TouchWare drivers:

1. Make sure that the TouchWare and Windows control panels are closed.
2. Click **Start**, → **Programs** → **MicroTouch TouchWare** → **Uninstall MicroTouch TouchWare**.

(The path will be different if you performed a custom installation and chose a custom name for the TouchWare program group.)

3. Follow the onscreen instructions to remove TouchWare.
4. Restart the system before installing new TouchWare drivers.

You might see the following messages when the Uninstall is complete: "Some elements could not be removed. You should manually remove items related to the applications." This message appears because several files remain in use until you restart the system. No action is required. Click **Details** to see the remaining files.

To install TouchWare drivers:

1. Go to www.ibm.com/solutions/retail/store/.
2. Select **Support**.
3. Select **IBM SurePOS 500/600 Series**.
4. Under Downloads, select the appropriate TouchWare driver.
5. Restart the system.

Calibrating the presence sensor (Models 561 and 562)

A presence sensor **A** resumes from standby, based upon the operator's proximity. The sensor may be calibrated to change the maximum detection range from approximately 609.6 mm (24 in.) to 1524 mm (60 in.), depending on the reflectivity of the object being sensed. The sensor will detect objects as close as 304.8 mm (12 in.).

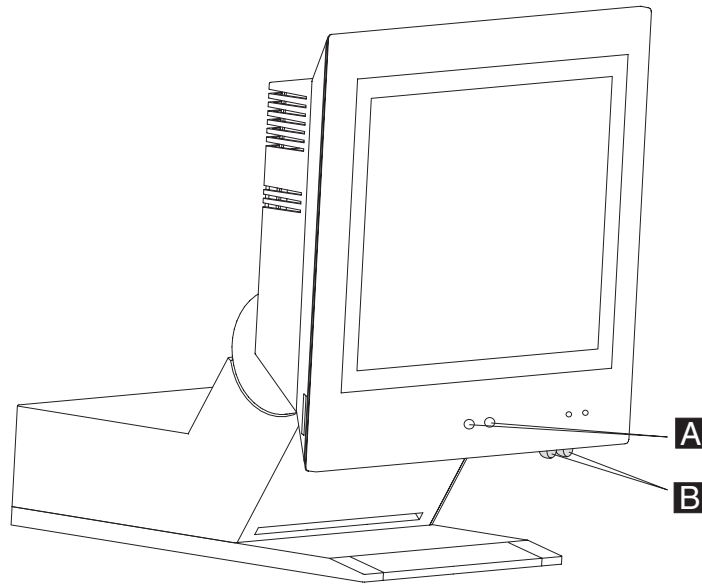


Figure 152. Location of presence sensor

To calibrate the presence sensor, follow these steps:

1. Hold an object (preferably a white object for best reflectivity) at the distance from the sensor at which you want the sensor to detect presence. Refer to **A** Figure 152 to locate the presence sensor.
2. Press the two brightness buttons **B** simultaneously. When the power-on indicator blinks rapidly, the sensor is ready to begin calibration. Release the buttons and keep the object to be detected in place for at least for an additional 5 seconds.

Note: On systems that have speaker, the buttons are not easily accessible. You must use small object, such as a straightened paper clip, to press the buttons.

Maintaining the SurePOS 500/600 Series

This section describes how to maintain the SurePOS 500/600 Series.

Using and maintaining the MSR

To use the MSR, place the credit or debit card into the top of the slot at the right side of the display with the magnetic stripe facing left. Slide the card downward. The system reads the card's magnetic stripe.

You can use the test card provided with the MSR to determine whether the device is working properly.

Other maintenance hints

The following hints will keep the SurePOS 500/600 Series in good operating condition:

- Make sure that the system unit is fastened securely to the appropriate mounting surface.
- Clean up any food or drink spills as soon as possible.
- Do not get the power button or other controls wet. Moisture can damage these parts and cause equipment failure.
- When disconnecting the power plug, always grasp the plug instead of the cord.
- Clean the system unit frequently to protect its surfaces and to ensure trouble-free operation. Use only mild cleaning liquids (such as isopropyl or rubbing alcohol) on a damp cloth.

Appendix F. SurePOS 500/600 Series tips

This section contains tips for service personnel when servicing the SurePOS 500/600 Series.

- You can determine whether a problem you are experiencing has already been resolved. Just review the symptoms and fixes in the knowledgebase at the IBM Retail Stores Solutions Web site.
 1. Go to www.ibm.com/solutions/retail/store/.
 2. Select **Knowledgebase**.
- Always reset CMOS (as described at “Restoring the default CMOS settings” on page 165) before replacing a system board to resolve a problem. This practice allows you to see if corrupted CMOS is the source of the trouble. Corrupted CMOS can cause unpredictable problems.
- After replacing a system board, verify that the CMOS settings correspond with any customer-specific settings. See “System board – removing and replacing” on page 91.
- After replacing a system board or processor, verify that the jumper settings on the system board correspond with the processor that is installed.

For more information see:

- “System board – removing and replacing” on page 91
- “Processor module – removing and replacing” on page 96
- “System-board jumper locations” on page 93

Tools

Table 34 lists the tools that are required by service personnel to service the SurePOS 500/600 Series.

Table 34. Service personnel tools

Description	Part Number	Units
Wrap plug, Ethernet	00G2380	1
Wrap plug, RS-232 and parallel port	72X8546	1
Adapter cable, RJ-45 to 9-pin conversion	03R7892	1

Appendix G. Notices

This information was developed for products and services offered in the U.S.A.

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Electronic emission notices

Federal Communications Commission (FCC) statement

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.

Industry Canada Class A emission compliance statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformité aux normes d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

European Union (EU) Mark of Conformity Statement

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Properly shielded and grounded cables and connectors must be used in order to reduce the potential for causing interference to radio and TV communications and to other electrical or electronic equipment. Such cables and connectors are available from IBM authorized dealers. IBM cannot accept responsibility for any interference caused by using other than recommended cables and connectors.

Germany

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richtlinie 89/336).

Dieses Gerät ist berechtigt in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Konformitätserklärung nach Paragraph 5 des EMVG ist die IBM Deutschland Informationssysteme GmbH, 70548 Stuttgart.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

Das Gerät erfüllt die Schutzanforderungen nach EN 50082–1 und EN 55022 Klasse A.

EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden:

"Warnung: dies ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen."

EN 50082–1 Hinweis:

"Wird dieses Gerät in einer industriellen Umgebung betrieben (wie in EN 50082–2 festgelegt), dann kann es dabei eventuell gestört werden. In solch einem Fall ist der Abstand bzw. die Abschirmung zu der industriellen Störquelle zu vergrößern."

Anmerkung:

Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den IBM Handbüchern angegeben, zu installieren und zu betreiben.

Australia / New Zealand

Attention: This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Japanese Voluntary Control Council for Interference (VCCI) statement

This product is a Class A Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Technology Equipment (VCCI). In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Chinese Class A warning statement

Attention: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

中华人民共和国“A类”警告声明

声 明

此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

Taiwanese Class A warning statement

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Korean communications statement

A급 기기(업무용)

이 기기는 업무용으로 전자파적합등록을 받은 기기이오니 판매자 또는 이용자는 이점을 주의하시기 바라며, 만약 구입하였을 때에는 구입한 곳에서 가정용으로 교환하시기 바랍니다.

Please note that this device has been approved for business purposes with regard to electromagnetic interference. If you find this is not suitable for your use, you may exchange it for a non-business purpose one.

Electrostatic discharge (ESD)

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

ESD Damage Prevention

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

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

Handling Removed Cards

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

Mercury-added statement

The fluorescent lamp in the liquid crystal display contains mercury. Dispose of it as required by local ordinances and regulations.

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Appendix H. Safety Information

Before you begin to install or service this product, read the following safety information.

Safety Information-English



DANGER

To avoid a shock hazard, do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.



DANGER

To avoid shock hazard:

- The power cord must be connected to a properly wired and earthed receptacle.
- Any equipment to which this product will be attached must also be connected to properly wired receptacles.

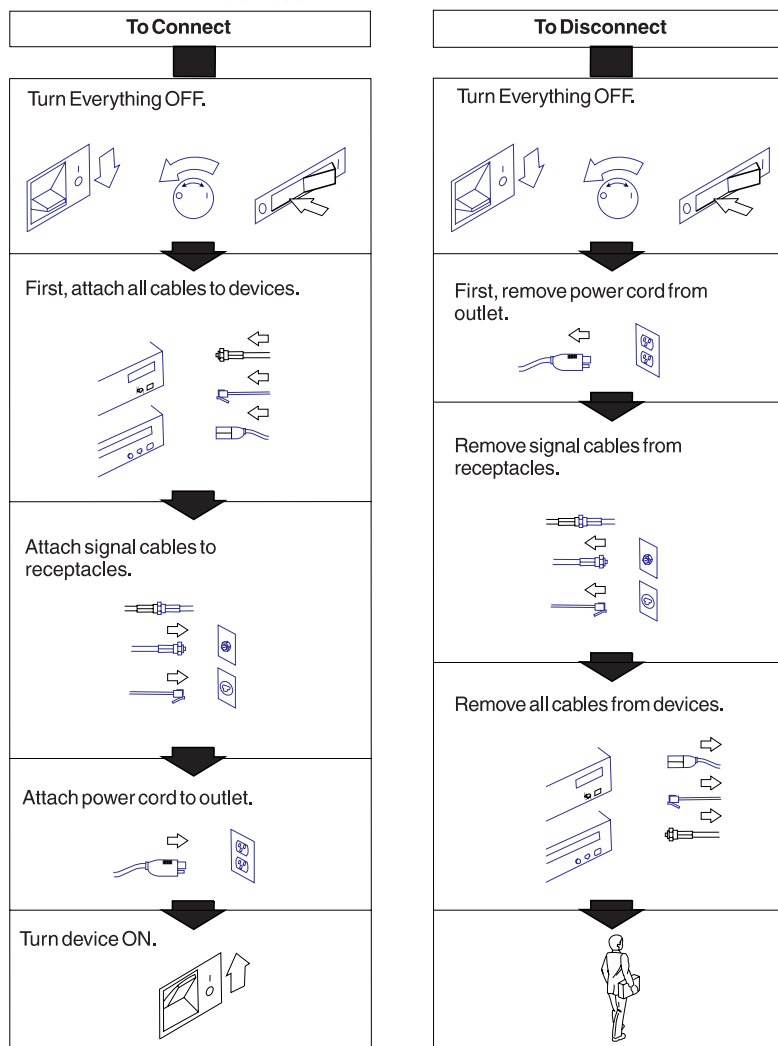


DANGER

When possible, use one hand to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.



DANGER: Electrical current from power, telephone, and communications cables is hazardous. To avoid shock hazard, connect and disconnect cables as shown below when installing, moving, or opening the covers of this product or attached devices.



Note: In the UK, by law, the telephone cable must be connected after the power cord.

Note: In the UK, by law, the power cord must be disconnected after the telephone line cable.

Caution:

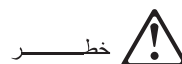
A lithium battery can cause a fire, an explosion, or a severe burn. Do not recharge, disassemble, heat above 100 degree C (212 degree F), solder directly to the cell, incinerate, or expose the cell contents to water.

Keep away from children.

Replace only with the part number specified for this IBM product. Use of a different battery may present a risk of fire or explosion. The battery connector is polarized; do not attempt to reverse the polarity.

Dispose of the battery according to local regulations.

Safety Information-Arabic



لتجنب خطورة الصدمات الكهربائية، لا يجب فصل أو توصيل أي كابلات أو القيام بأعمال تركيبات أو صيانة أو إعادة تنظيم أي من الأجهزة الكهربائية أثناء سريان التيار الكهربائي.

لتجنب خطورة الصدمات الكهربائية:

♦ لا بد من توصيل السلك الكهربائي لمصدر جيد التوصيل بالأرض ومجهز بطريقة صحيحة .

♦ وأي جهاز مصاحب لهذا المنتج يجب توصيله بمصدر مجهز بطريقة صحيحة .

وان أمكن يجب استخدام يد واحدة في توصيل أو فصل كابلات الاشارات (التحكم) لتفادي أي صدمة محتملة نتيجة تلامس سطحين بجهد كهربائي مختلف .

التيار الكهربائي النابع من كابلات الكهرباء أو التليفون تمثل خطورة ولتجنب مخاطر الصدمات الكهربائية، يجب اتباع التعليمات الخاصة بتوصيل الأسلاك كما هو موضح أدناه عند تركيب أو نقل أو فتح أغشية هذا المنتج أو الأجهزة المصاحبة له .

للتوصيل	للفصل
♦ يجب إيقاف الأجهزة (ظهور علامات سخونة للمقبس) يجب قراءة دليل الاستخدام للحصول على أي معلومات إضافية.	♦ يجب إيقاف الأجهزة . (يجب قراءة دليل الاستخدام للحصول على أي معلومات إضافية).
♦ أو لا يجب توصيل كل الأسلاك للأجهزة .	♦ قم برفع أسلاك الكهرباء من الخارج .
♦ يجب توصيل أسلاك الاشارة للمصادر الكهربائية	♦ قم برفع أسلاك الاشارة من المصادر الكهربائية.
♦ قم بتوصيل سلك الكهرباء للمخرج الخاص بالجهاز .	♦ قم برفع كافة الأسلاك من الأجهزة .
♦ قم بتشغيل الجهاز .	

تحذير :

يمكن أن تتسبب البطارية الليثيوم في حريق أو انفجار أو حريق شديد

لا تقم بإعادة شحن البطارية أو تفكيكها أو تسخينها أعلى من 100 درجة مئوية (212 درجة فهرنهايت)، أو لحامها مباشرة بخلية البطارية أو تعريض محتويات خلية البطارية للمياه

تحفظ بعيدا عن متناول الاطفال

تستبدل فقط برقم الجزء المحدد لهذا المنتج من شركة IBM

قد ينتج عن استعمال نوع مختلف من البطارية المخاطرة بحدوث حريق أو انفجار

لوصلة البطارية قطبية محددة، لا تحاول عكس هذه القطبية
تخلص من البطارية طبقا للقانون المحلي

Safety Information-Brazilian Portuguese



PERIGO

Para evitar choque elétrico, não conecte ou desconecte qualquer cabo ou faça instalação, manutenção, ou reconfiguração deste produto quando houver relâmpagos.



PERIGO

Para evitar risco de choque:

- O cabo de força tem que estar conectado a uma tomada com fios adequados e corretamente aterrada.
- Qualquer equipamento, ao qual este produto será acoplado, também deverá estar conectado a tomadas com fios adequados.

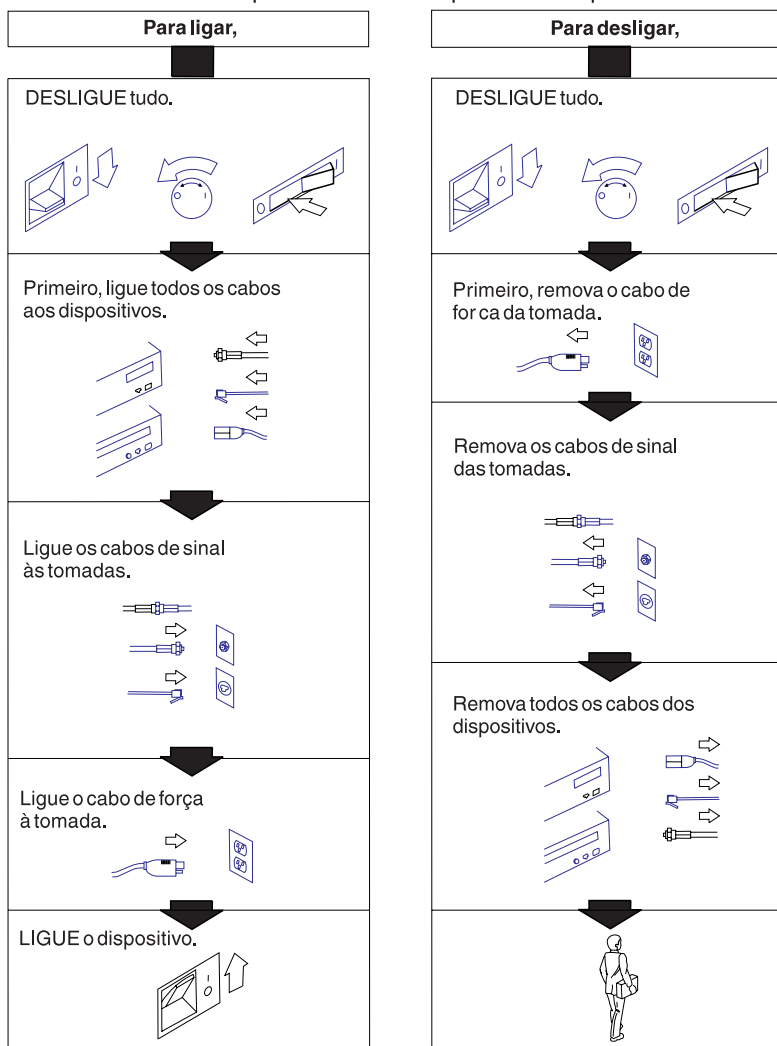


PERIGO

Sempre que possível, utilize apenas uma das mãos para ligar ou desligar os cabos de sinal, a fim de evitar possíveis choques elétricos por tocar em duas superfícies com potenciais diferentes.

**PERIGO:**

A corrente elétrica dos cabos de força, telefônicos, e de comunicação é perigosa. Para evitar risco de choque elétrico, ligue e desligue os cabos, como mostrado abaixo ao instalar, mover, ou abrir as tampas deste produto ou dos dispositivos acoplados.

**Cuidado:**

Uma bateria de lítio pode causar incêndio, explosão ou queimaduras graves. Não recarregue, desmonte ou aqueça acima de 100°C (212°F), não utilize solda diretamente na célula, nem incinere ou exponha o conteúdo da célula à água.

Mantenha longe do alcance de crianças.

Substitua apenas pelo número de peça especificado para este produto IBM. A utilização de uma bateria diferente representa risco de incêndio ou explosão. O conector da bateria é polarizado; não tente reverter a polaridade.

Descarte a bateria de acordo com as regulamentações locais.

Safety Information-French



DANGER

Pour éviter tout risque de choc électrique, ne manipulez aucun câble et n'effectuez aucune opération d'installation, d'entretien ou de reconfiguration de ce produit au cours d'un orage.



DANGER

Pour éviter tout risque de choc électrique:

- Le cordon d'alimentation doit être branché sur une prise d'alimentation correctement câblée et mise à la terre.
- D'autre part, tout le matériel connecté à ce produit doit également être branché sur des prises d'alimentation correctement câblées et mises à la terre.

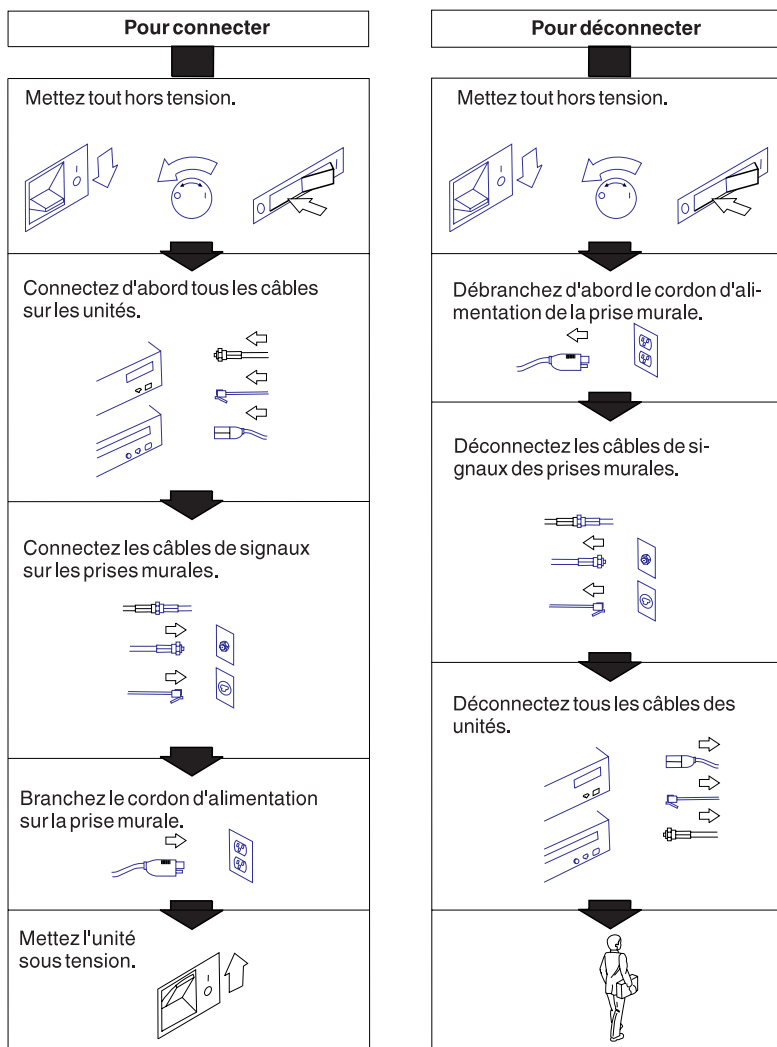


DANGER

Afin d'éviter tout risque de choc électrique provenant d'une différence de potentiel de terre, n'utilisez qu'une main, lorsque cela est possible, pour connecter ou déconnecter les cordons d'interface.

**DANGER:**

Le courant électrique provenant des câbles d'alimentation, téléphoniques et de transmission peut présenter un danger. Pour éviter tout risque de choc électrique, connectez et déconnectez ces câbles comme indiqué ci-dessous lorsque vous installez ou déplacez ce matériel ou les unités connectées, ou que vous soulevez un carter.

**Attention:**

Prenez garde aux risques d'incendie, d'explosion ou de brûlures graves liés à l'utilisation d'une pile au lithium. Ne la rechargez pas et ne la déamontez pas. Ne l'exposez pas à une température supérieure à 100 °C, ne la soudez pas, ne la faites pas brûler et n'en exposez pas le contenu à l'eau.

Gardez la pile hors de portée des enfants.

Si vous la remplacez, commandez une pile de rechange de e. même référence. Toute autre pile risquerait de prendre feu ou d'exploser. Le connecteur de la pile est polarisé. N'essayez pas d'inverser la polarité.

Updated August 7, 2003

Pour le recyclage ou la mise au rebut, reportez-vous à la réglementation en vigueur.

Safety Information-Hebrew



כדי להימנע ממכת חשמל, אסור לחבר או לנתק כל כבל או לבצע התקנה, תחזוקה או הגדרה מחדש של מוצר זה במהלך סופת ברקים.



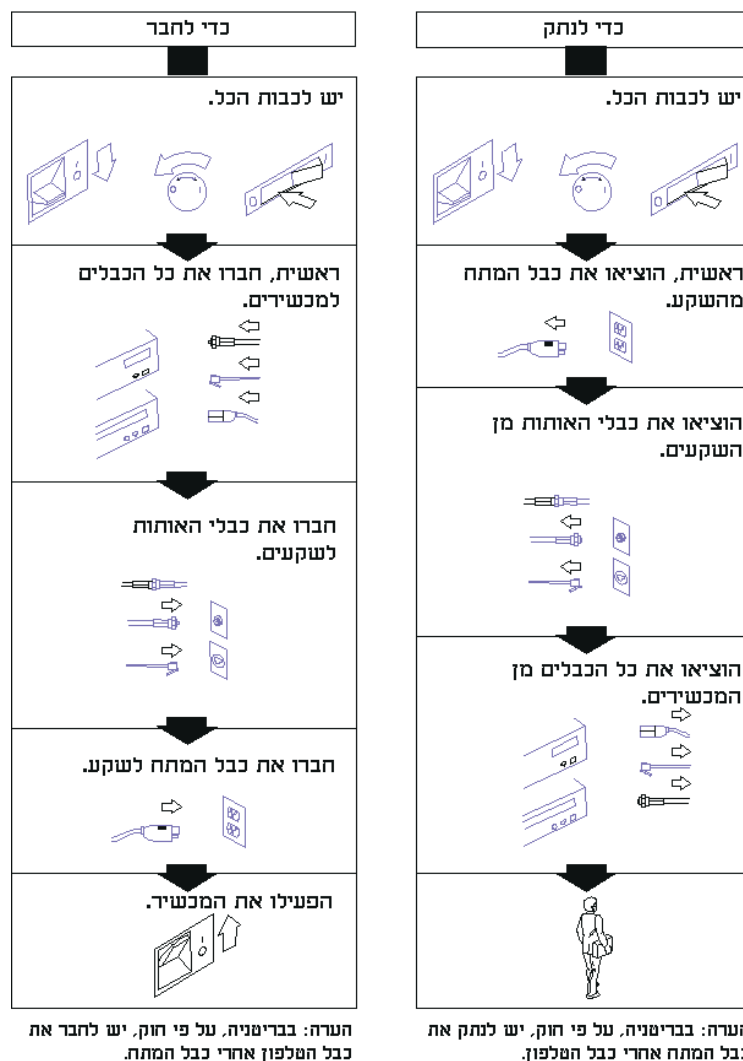
כדי להימנע מסכנת מכת חשמל:

- כבל המתח חייב להיות מחובר לשקע מחוטט ומוארק כראוי.
- כל ציוד שאליו מוצר זה יחובר, חייב גם הוא להיות מחובר לשקעים מחוטטים כראוי.



כאשר ניתן, השתמשו ביד אחת על מנת לחבר או לנתק את כבלי האותות, כדי למנוע מכת חשמל אפשרית כתוצאה מוניהה בשני משטחים בעלי פוטנציאל חשמלי שונה.

סכנה: זרם חשמלי ממקור מתח, מלפון וכבלי תקשורת הוא מסוכן. כדי להימנע מסכנת מכת חשמל, יש לחבר ולנתק את הכבלים כפי שמודגם להלן, כאשר מתקינים, מעבירים או פותחים את המכסה של מוצר זה או של מכשירים מצורפים.



זהירות:

סוללת ליתיום עלולה לגרום לשריפה, לפיצוץ או לכוויה קשה.

אין לטעון אותה מחדש, לחממה מעל 100 מעלות צלזיוס (212 מעלות פרנהייט), להלחים ישירות לתא הסוללה, לשרוף אותה או לחשוף את תוכן התא למים.

יש להרחיק מילדים.

יש להחליף רק עם מספר החלק שצויין עבור מוצר יבמ זה.

השימוש בסוללה אחרת עלול לגרום לסכנת אש או פיצוץ.

המחבר של הסוללה הוא מקוטב; אין לנסות ולשנות את הקיטוב. יש לסלק את הסוללה על פי הנוהלים המקומיים.

Safety Information-Korean



위험

감전 쇼크의 위험을 피하기 위하여 천동번개가 치는 동안에는 전원을 연결하거나 또는 끊지 마시고 또한 본 제품의 설치, 수리 및 시스템 재구성을 하지 마시오.



위험

감전 쇼크의 위험을 피하기 위하여:

- 전원은 반드시 적정 규격의 전선을 사용하시고
접지선이 연결된 접속기와 연결 하십시오.
- 본 제품과 연결되는 모든 기기는 반드시 적정
규격의 전선으로 접지선이 연결된 접속기와
연결되어 있어야 합니다.



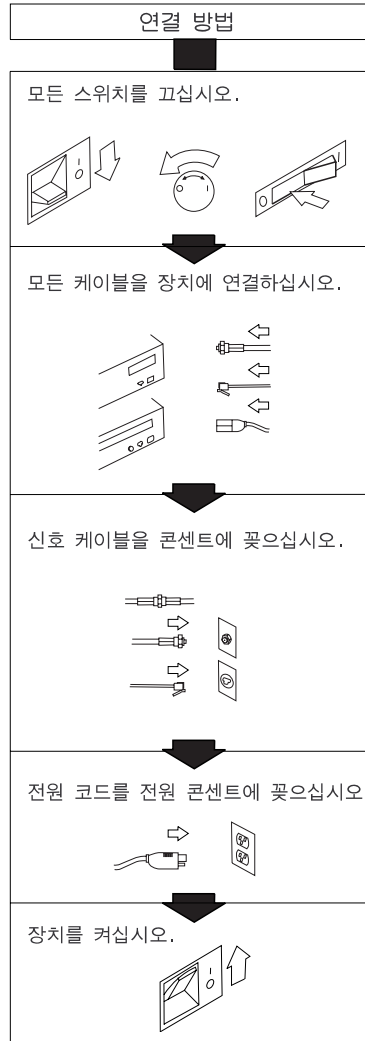
위험 통지 사항

위험

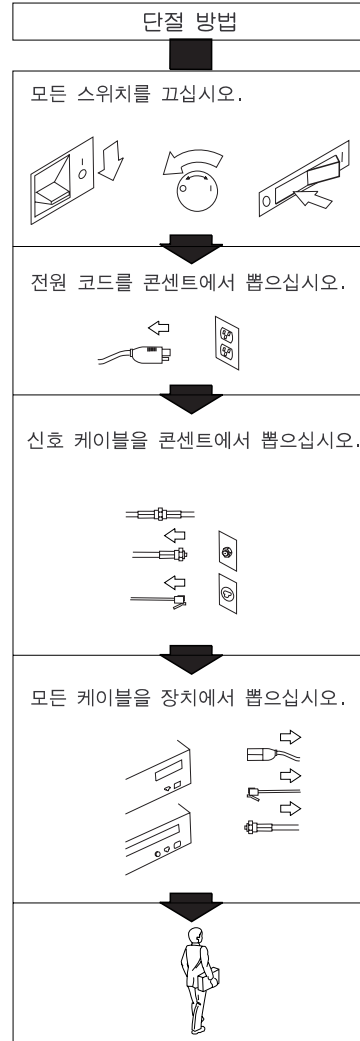
신호케이블을 연결하거나 단절할 때는 가능하면 한 손만을 사용하십시오. 전위 / 다른 두 표면을 동시에 만지면 전기적 충격을 받을 수 있기 때문입니다.



위험: 전원, 전화 및 통신 케이블에 흐르는 전류는 위험합니다. 전기 쇼크를 방지하려면 이 제품이나 부속장치를 설치, 이동하거나 덮개를 열때 아래에 표시된 대로 케이블을 연결하거나 단절하십시오.



Note: In the UK, by law, the telephone cable must be connected after the power cord.



Note: In the UK, by law, the power cord must be disconnected after the telephone line cable.

주의:

리튬 배터리는 화재, 폭발 또는 심각한 화상을 유발할 수 있습니다.

재충전, 분해, 섭씨 100도(화씨 212도) 이상으로 과열하거나 셀에 직접 납땜하거나 태우거나 셀 내용물을 물에 노출시키지 마십시오.

아이들의 손이 닿지 않게 하십시오.

이 IBM 제품에 대해 지정된 부품 번호로만 교체하십시오.

다른 배터리를 사용할 경우 화재나 폭발의 위험이 있습니다.

이 배터리에는 극성이 있습니다. 극성을 바꾸지 마십시오. 현지 법에 의거하여 배터리를 폐기하십시오.

Safety Information-Italian



PERICOLO

Per evitare scosse elettriche, non collegare o scollegare cavi o effettuare installazioni, riconfigurazioni o manutenzione di questo prodotto durante un temporale.



PERICOLO

Per evitare scosse elettriche:

- Il cavo di alimentazione deve essere collegato a una presa munita di terra di sicurezza e propriamente cablata.
- Tutte le unità esterne di questo prodotto, devono essere collegate a prese munite di terra di sicurezza e propriamente cablate.

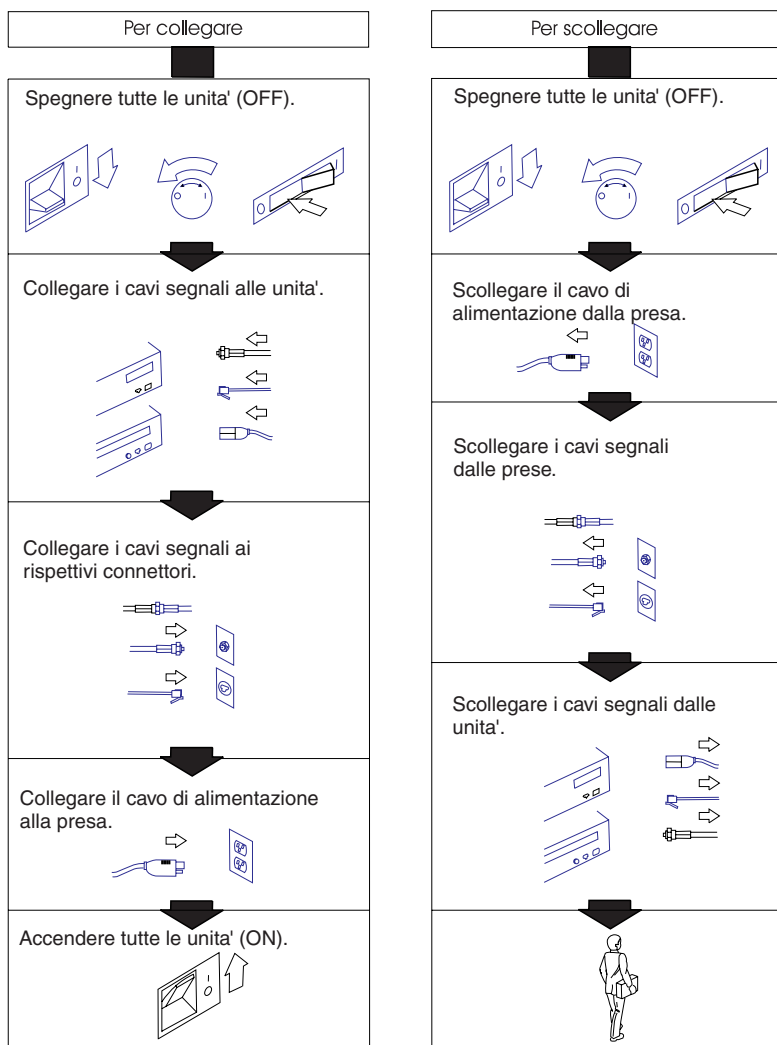


PERICOLO

Quando possibile, collegare o scollegare i cavi di segnale con una mano così da evitare il rischio di scosse, derivante dal contatto con due superfici a diverso potenziale elettrico.

**PERICOLO:**

La corrente elettrica di alimentazione del telefono e dei cavi di comunicazione e' pericolosa. Per evitare scosse elettriche collegare e scollegare i cavi, nella sequenza mostrata in figura, quando si installa, si trasporta o si tolgono i coperchi di questo prodotto o delle unita' ad esso collegate. Non maneggiare i cavi di interconnessione durante temporali.

**Attenzione:**

Una batteria al litio può incendiarsi, esplodere o causare ustioni. Non ricaricarla, non smontarla, non riscaldarla ad una temperatura superiore a 100° C, non saldarla, non incenerirla, non gettarla in acqua.

Tenere la batteria lontano dalla portata dei bambini.

Sostituirla soltanto con una batteria contrassegnata dal numero parte specifico per questo prodotto IBM. L'utilizzo di un altro tipo di batteria può determinare rischi di incendio o di esplosione. Il connettore della batteria è polarizzata; non tentare di invertire la polarità.

Updated August 7, 2003

Smaltire la batteria secondo la normativa in vigore (D.Lgs. 22 del 5/2/97) e successive disposizioni nazionali e disposizioni locali.

Safety Information-Spanish



PELIGRO

Para evitar peligro de descargas, no conecte o desconecte ningún cable, ni realice ninguna instalación, mantenimiento o reconfiguración de este producto durante una tormenta eléctrica.



PELIGRO

Para evitar peligro de descargas:

- El cable de alimentación debe estar conectado a una toma de alimentación adecuadamente cableada y con toma de tierra.
- Cualquier equipo al cual se conecte este producto debe estar también conectado a tomas de alimentación adecuadamente cableadas.



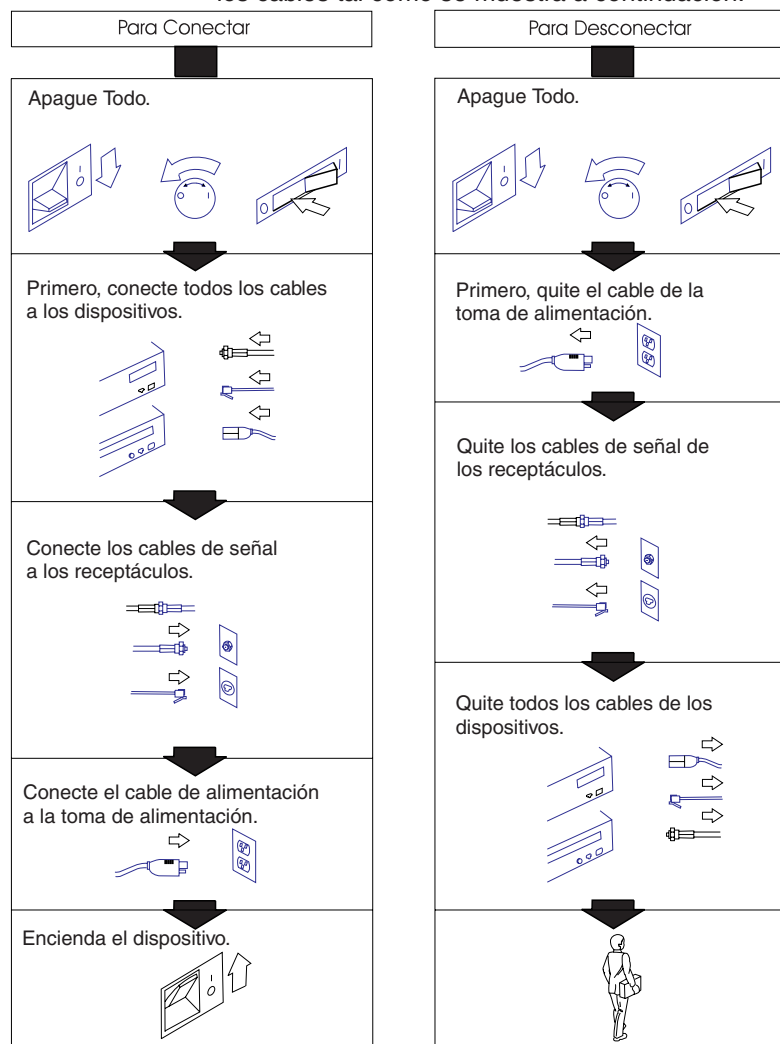
PELIGRO

Cuando sea posible, utilice una mano para conectar o desconectar los cables de señal para impedir que se produzcan posibles descargas eléctricas al tocar dos superficies con potencial eléctrico distinto.



PELIGRO:

La corriente eléctrica de la alimentación, teléfono y cables de comunicación es peligrosa. Para evitar peligro de descargas cuando instale, mueva o abra las cubiertas de este producto o de un disp. conectado, conecte y desconecte los cables tal como se muestra a continuación.



Caution:

Una batería de litio puede causar un incendio, una explosión o quemaduras graves. No recargar, desmontar, calentar por encima de los 100 grados C (212 grados F), soldar directamente a la pila, incinerar o mojar el contenido de la pila.

Manténgala alejada de los niños.

Sustitúyala sólo con el número de pieza que se especifica para este producto IBM. El uso de una batería distinta puede causar riesgos de incendio o explosión. El conector de batería está polarizado; no intente invertir la polaridad.

Deseche la batería se acuerdo con la normativa local.

Safety Information-German



VORSICHT

Um gefährliche Spannungen zu vermeiden, dürfen während eines Gewitters an diesem Gerät keine Kabel angeschlossen oder gelöst werden, ferner keine Installation, Wartung oder Rekonfiguration durchgeführt werden.



VORSICHT

Aus Sicherheitsgründen

- darf das Netzkabel nur an eine Schutzkontaktsteckdose angeschlossen werden.
- dürfen für den Anschluß anderer Geräte an den Drucker auch nur Schutzkontaktsteckdosen verwendet werden.



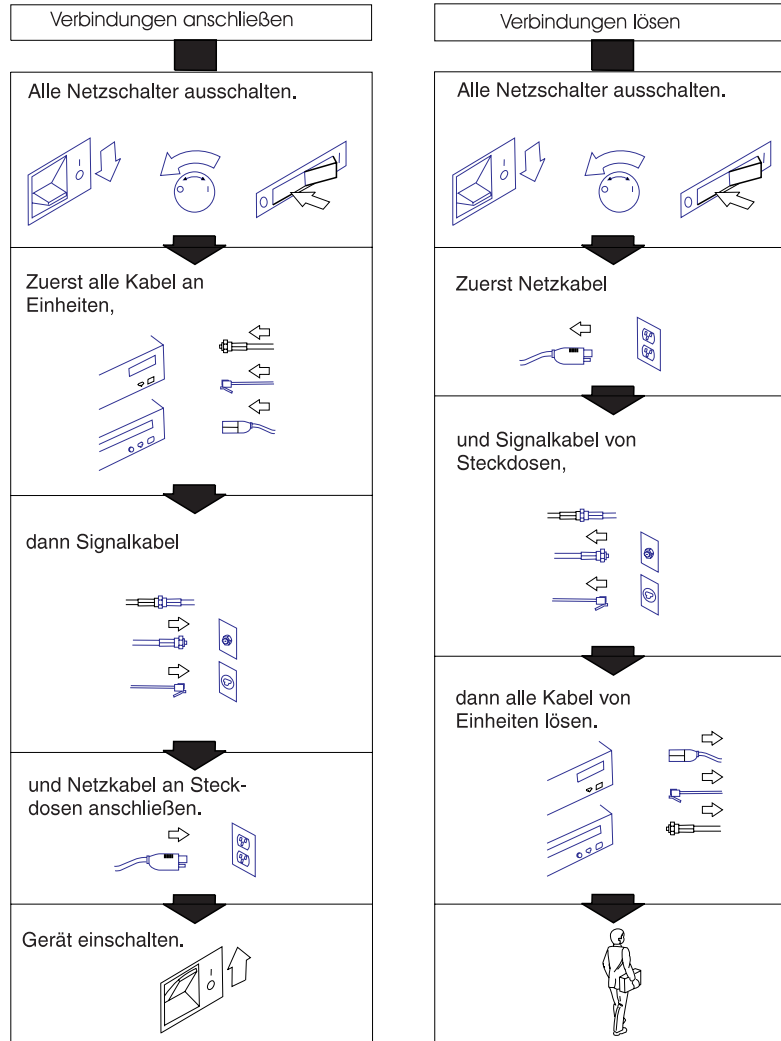
VORSICHT

Die Signalkabel nach Möglichkeit mit einer Hand anschließen oder lösen, um gefährliche Körperströme zu vermeiden, die bei Berühren zweier Flächen mit möglicherweise unterschiedlichen elektrischen Potentialen auftreten können.



Elektrische
Sicherheit:

Gefährliche Spannungen an Netz-, Telefon- und Übertragungskabeln. Bei Installation, Transport oder Öffnen des Gerätegehäuses oder angeschlossenen Einheiten die Kabel wie abgebildet anschließen bzw. lösen. Bei Gewittern dürfen keine Kabel angeschlossen bzw. gelöst werden.



Achtung:

Lithiumbatterien sind feuergefährlich, explosiv und können schwere Verbrennungen verursachen. Batterie nicht wiederaufladen, öffnen oder über 100 Grad Celsius erhitzen; die Zelle nicht direkt anlöten, verbrennen oder den Inhalt der Zelle mit Wasser in Berührung bringen.

Batterie nicht in Reichweite von Kindern aufbewahren.

Eine verbrauchte Batterie nur durch eine Batterie mit der für dieses IBM Produkt spezifizierten Teilenummer ersetzen. Andere Batterien können sich entzünden oder explodieren. Der Batterieanschluß hat zwei verschiedene Pole; beim Anschließen die Pole nicht vertauschen.

Batterie gemäß den örtlichen Richtlinien für Sondermüll entsorgen.

Safety Information-Traditional Chinese



為了避免雷擊，在閃電期間，請勿連接或拔掉本裝置上的任何電纜線，或請勿安裝、維修或重新架構本產品。



為了避免雷擊：

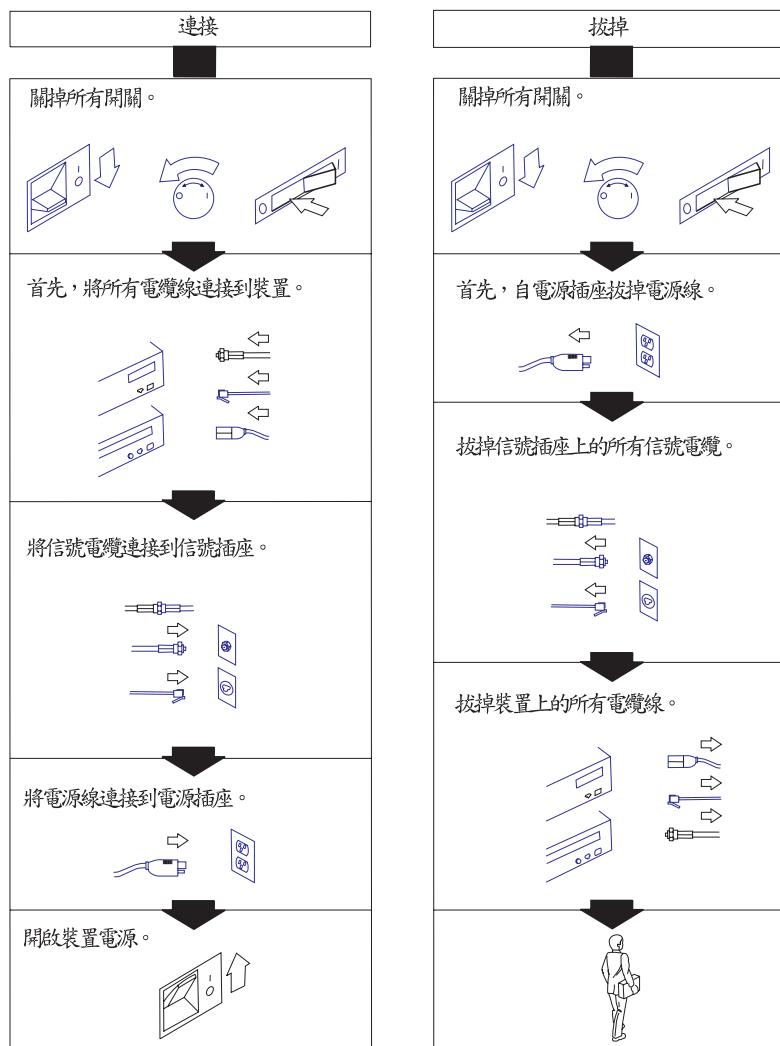
- 電源線必須連接到接線及接地正確的插座。
- 本產品所連接的設備也必須連接到接線正確的插座。



儘可能使用單手來連接或拔掉信號電纜，以避免因接觸兩不同電位的平面，而受到電擊。



危險： 電源、電話及通信電纜上均有電流通過，為了避免電擊，在安裝、移動本產品，或開啟本產品的蓋子或與本產品連接之裝置的蓋子時，請依照下列「連接」及「拔掉」電纜的步驟操作。



註：英國法律規定，需在電源線接妥後，才可連接電話線。

註：英國法律規定，需在電話線拔掉後，才可拔掉電源線。

注意：

锂电池可能会引起火灾、爆炸或严重烧伤。

请勿对锂电池进行充电、分解、加热超过 100 摄氏度（212 华氏度）、直接焊接、焚烧或置于水中。

请将电池放在孩童够不到的地方。

更换电池时只能使用指定产品。

使用其它电池可能有引起火灾或爆炸的危险。

电池接头带有极性，请勿掉换极性。
请按照当地法规处理电池。

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Hardware Service Guide**

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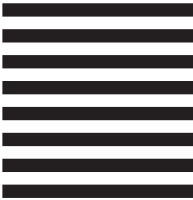
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