IBM

Guide to Operations

IBM 7690 Clinical Workstation

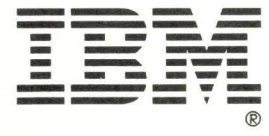# IBM

®

Guide to
Operations

IBM 7690 Clinical Workstation

First Edition, September 1989

The following statement applies to this IBM product. The statement
for other IBM products intended for use with this product will appear
in their accompanying materials.

Federal Communications Commission (FCC) Statement

Warning: This equipment generates, uses, and can radiate radio fre-
quency energy and if not installed and used in accordance with the
instruction manual, may cause interference to radio communications.
It has been tested and found to comply with the limits for a Class A
computing device pursuant to Subpart J of Part 15 of FCC rules, which
are designed to provide reasonable protection against such interfer-
ence when operated in a commercial environment. Operation of this
equipment in a residential area is likely to cause interference in
which case the user at his own expense will be required to take what-
ever measures may be required to correct the interference.

Instructions to User: If this equipment does cause interference to
radio or television reception, which can be determined by turning the
equipment off and on, the user is encouraged to try to correct the
interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that computer and
  receiver are on different branch circuits.

Properly shielded and grounded cables and connectors must be used
for connection to peripherals in order to meet FCC emission limits.
Proper cables are available from IBM authorized dealers. IBM is not
responsible for any radio or television interference caused by using
other than recommended cables or by unauthorized modifications to
this equipment. It is the responsibility of the user to correct such
interference.

If necessary, the user should consult the dealer or an experienced
radio/television technician for additional suggestions. The user may
find the following booklet prepared by the Federal Communications
Commission helpful:

How to Identify and Resolve Radio-TV Interference Problems

This booklet is available from the following:

Consumer Assistance and
Small Business Division
Room 254
1919 M St. NW
Washington, DC 20554
Tele (202) 632-7000

FOB Public Contact Branch
Room 725
1919 M St. NW
Washington, DC 20554
Tele (202) 634-1940

International Business Machines Corporation   Armonk, New York 10504

Warranty Exhibit to IBM Statement of Limited Warranty
IBM 7690 Clinical Workstation

If you purchased this Machine directly from International Business Machines Corporation (IBM) or another IBM organization under an agreement for purchase of IBM machines, the warranty provisions therein shall prevail and this Warranty Exhibit and the IBM Statement of Limited Warranty (Z125-3744) shall not apply.

If you purchased this Machine from a Remarketer, the warranty services described in the IBM Statement of Limited Warranty is available only for Machines purchased and located in the United States or Puerto Rico.

If you purchased this Machine from a supplier authorized by an IBM organization to market this Machine in other than the United States or Puerto Rico, warranty information is available only from such supplier.

I. Date of Installation (Warranty start date):

IBM, an IBM Remarketer or an IBM authorized supplier will supply the Date of Installation to you. The Warranty Period will commence on this Date.

II. Warranty Duration:

Three months

III. Type of Service:

IBM On-Site Repair (IOR)

IV. Provider of Warranty Service:

IBM or Remarketer may provide warranty service for this Machine.

V. Period of Warranty Service Availability:

Contact a Remarketer to determine the available periods of warranty service.

Contact IBM for warranty service 24 hours a day, 7 days a week by calling 1-800-428-2569.

This Machine is a customer Set-up (CSU) Machine. You are responsible to set up this Machine in accordance with the instructions furnished by IBM.

You may be required to present proof of purchase for this Machine to IBM or a Remarketer to obtain warranty service.

If you have any questions about warranty service, contact a Remarketer for this Machine. You may also call IBM Direct at 1-800-IBM-2468.

Statement of Limited Warranty

International Business Machines (IBM) gives you the following limited warranty for this IBM Machine. IBM gives you this limited warranty only if this Machine was originally purchased for use, and not for resale, from an IBM Authorized Dealer, IBM Authorized Industry Remarketer or an IBM approved Reseller. The Dealer, Remarketer or Reseller must be authorized or approved by IBM to market this Machine. The Warranty Exhibit to this Statement identifies this Machine and specifies other important information. This Machine will be subject to this Statement of Limited Warranty only if purchased in the United States or Puerto Rico.

DEFINITIONS

The term "Remarketer" shall mean an IBM Authorized Dealer, IBM Authorized Industry Remarketer or IBM approved Reseller for this Machine unless the context requires individual reference.

The term "Machine" shall mean a machine and/or its features, model conversions, machine elements and accessories unless the context requires individual reference.

The term "failing machine" shall mean a machine or machine element requiring warranty service as initially determined by you and, as applicable, verified by IBM.

The term "exchange machine" shall mean a machine or machine element provided to you by IBM under an Exchange Type of Service.

LIMITED WARRANTIES

A Machine subject to this Statement of Limited Warranty will be 1) newly manufactured by or for IBM from new and serviceable used parts which are equivalent to new in performance in the Machine, 2) assembled by or for IBM from serviceable used parts, or 3) a Machine which has been previously installed.

IBM warrants that on this Machine's Date of Installation it will be in good working order and will conform to IBM's official published specifications. IBM will make these specifications available to you upon request.

The Warranty Period for this Machine commences on its Date of Installation. The Warranty Period duration is specified in the Warranty Exhibit. If the Warranty Period expires on a Friday or Saturday, IBM will extend the Warranty Period so that its last day will be the following Sunday.

IBM or a Remarketer will notify you of the Date of Installation. IBM reserves the right to correct any error in such date.

Service and Parts Warranty

IBM agrees to provide the availability of warranty service for the duration of the Warranty Period at no additional charge except as set forth in this Statement. IBM will provide warranty service, as required, by 1) repairing this machine, model upgrade or feature addition or 2) exchanging the machine or machine element. IBM will render repair or exchange under one of the Types of Service described in this Statement. IBM will specify the specific Type of Service for this Machine during its Warranty Period in

the Warranty Exhibit. For certain Machines, IBM offers a Warranty Option that provides an alternate method of obtaining warranty service under another Type of Service. Any such Warranty Option is available under the IBM Maintenance Agreement.

IBM shall have full, free and safe access to this Machine to provide On-Site Types of Service. You shall promptly inform IBM of any change in this Machine's location during its Warranty Period.

You are responsible to initially determine that the machine or machine element requires warranty service. Before requesting such service, you shall follow IBM's problem determination, or problem analysis and service request procedures.

You are responsible to remove and control funds contained in a Machine. IBM will service a Machine containing funds only when you cannot open the cash container. If so, you will remove the funds as soon as the container is, or can be, opened.

IBM will render a Repair or Exchange Type of Service only when you present a failing machine to IBM.

Under a Repair Type of Service, IBM will provide remedial maintenance to restore the Machine to good working order. IBM may also provide preventive maintenance based on the specific needs of Machine as determined by IBM. IBM may also lubricate, adjust and replace parts when IBM considers it necessary. IBM will install parts, which may be used parts, on an exchange basis. IBM will acquire title to the replaced parts. You are responsible to remove or protect all programs, data and removable storage media before IBM repairs the Machine.

Under an Exchange Type of Service, IBM will provide an exchange machine which may not be new but will be in good working order. You will acquire title to it at the time of exchange. IBM will acquire title to the failing machine at the time of exchange. IBM reserves the right to verify that a failing machine is acceptable for exchange. You are responsible to remove all non-IBM parts, options, alterations and attachments before you present a failing machine for exchange. You give up all rights to any such items not removed. You will not present IBM a failing machine for exchange which is defaced, altered, in need of a repair not included in warranty service, or damaged beyond repair. IBM will inspect the failing machine to determine if the failing machine is in such condition. If so, IBM will nullify the exchange and each party will return to the other machine or machine element in its possession. You will ensure that a failing machine is free of any encumbrances at the time you present it to IBM under an Exchange Type of Service.

The Period of Warranty Service is 24 hours a day, 7 days a week for IBM On-Site Types of Service. The Period of Warranty Service for all other Types of Service is the normal business hours of the IBM designated location.

If you request, and IBM provides, an On-Site Type of Service in place of the Type of Service then in effect, you shall pay IBM's then generally available charge for the service provided.

Warranty service does not assure uninterrupted operation of this Machine.

During the Warranty Period, IBM will control and install engineering changes IBM determines to be applicable to this Machine. You may, by providing notice subject to

IBM's written confirmation, elect to have only IBM designated mandatory engineering changes installed on this Machine.

Types of Service

IBM On-Site Repair (IOR)

IBM will provide warranty service for the failing machine at your location.

IBM On-Site Exchange (IOE)

IBM will 1) deliver the exchange machine to your location, 2) disconnect the failing machine, 3) connect the exchange machine, 4) verify its operation, and 5) remove the failing machine from your location.

Customer On-Site Exchange (COE)

IBM will have an exchange machine delivered to your location. You will 1) disconnect the failing machine and prepare it for shipment to IBM, 2) connect the exchange machine, and 3) verify its operation. You will follow IBM's instructions regarding shipment of the failing machine to IBM. IBM will pay the shipment expense.

Customer Carry-In Repair (CCR)

You will 1) deliver the failing machine to an IBM designated location, 2) pick up the machine or machine element, following any repairs, and take it to your location, 3) connect it, and 4) verify its operation.

In place of such delivery and pickup, you may ship the failing machine, prepaid, in the original shipping container, or equivalent, to an IBM location designated to receive such shipment. Following any repairs, IBM will ship the machine or machine element to your location, prepaid, within the United States or Puerto Rico.

Customer Carry-In Exchange (CCE)

You will 1) deliver the failing machine to an IBM designated location, 2) pick up the exchange machine and take it to your location, 3) connect it, and 4) verify its operation.

In place of such delivery and pickup, you may ship the failing machine, prepaid, in the original shipping container, or equivalent, to an IBM location designated to receive such shipment. Following receipt of the failing machine, IBM will ship the exchange machine to your location, prepaid, within the United States or Puerto Rico.

You are responsible for risk of loss of, or damage to, the Machine during the period such Machine is in transit to and from IBM. However, IBM is responsible for risk of loss of, or damage to, 1) IBM-owned Machines and/or 2) a Machine owned by other than IBM while in IBM's possession or in transit from IBM to you by an IBM-selected carrier whose charges IBM prepays. In addition, IBM is responsible for loss or damage due to IBM's negligence.

Additional Provisions for Features and Model Conversions

IBM's warranty for each feature addition or model upgrade requires that the machine on which such addition or upgrade is installed meets certain conditions. The machine must 1) be at a proper engineering-change level, as IBM determines, 2) be the specific serial-numbered machine for which you ordered such addition or upgrade, and 3) have been modified only with changes obtained from IBM specifically for that serial-numbered machine. If these conditions are not met, IBM will attempt to install a non-CSU feature addition and/or model upgrade on the machine. If such attempt results in a correctly functioning machine, this Statement will apply. If such attempt results in an incorrectly functioning machine, upon your request, IBM will remove the feature addition and/or model upgrade and restore the machine to its prior condition. In such case, IBM will invoice you IBM's generally available charges, including travel expenses. If the feature addition or model upgrade involved the removal of parts which became IBM's property, such feature addition or model upgrade becomes IBM's property and the restored parts become your property.

IBM will provide a three-month parts warranty for additional parts supplied by IBM for a feature removal, model downgrade or reinstallation of a previously purchased feature or model conversion.

Additional Provisions for Machine Elements and Accessories

A machine element, which you separately purchased, or an accessory has a three-month Warranty Period unless IBM specifies a longer duration. During the Warranty Period, you will remove any such machine element or accessory which fails in normal use. You will then ship it, prepaid, to the IBM location designated to receive such shipment. IBM will repair or replace, at its option, such machine element or accessory. IBM's shipment to you will be prepaid within the United States or Puerto Rico.

Travel Expense

There will be no additional charge for travel expenses associated with warranty service except when the site at which the Machine is located is inaccessible to the IBM service representative by both private and scheduled public transportation.

Services for Additional Charge During the Warranty Period

Warranty service does not include repair of certain Machine failures. These failures are those which are caused by an unsuitable environment, accident, disaster, transportation, vandalism, misuse, abuse, another product or device not under IBM warranty or IBM agreement service, non-IBM modification, or service of the Machine by other than IBM. In addition, warranty service does not include inspection of the Machine, including inspection of an altered Machine, or repair of damage caused by use of, inadequate use of, or failure to use, supplies. If service not included in warranty service is available, and IBM provides such service, it will be provided for an additional charge. IBM shall determine such charge by using IBM's 1) then generally available hourly service rates and minimum charges for service time, including travel and waiting time, 2) parts and material prices then generally in effect, and 3) charges for travel and shipping expenses, all as applicable.

Other Warranty Provisions and Exclusions

This limited warranty does not include any service which is impractical for IBM to render because of alterations in, or attachments to, this Machine. IBM will replace a part not provided by IBM for this Machine only with a directly interchangeable IBM part. If so, IBM will charge you as described in the preceding paragraph. IBM will not replace any part which is included in an alteration.

If you transfer this Machine to another user, IBM will provide the availability of warranty service under this Statement to that user. Such warranty service will be available for the remainder of the Warranty Period. Therefore, you should transfer the proof of purchase and this Statement to that user.

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF REMEDIES

Your sole remedy under this Statement of Limited Warranty is set forth in this Section. For any claim concerning performance or nonperformance by IBM, and IBM Authorized Dealer, or an IBM Authorized Industry Remarketer for this Machine under this Statement of Limited Warranty, you may recover actual damages up to the limit set forth in the following paragraph.

The limit of IBM's liability for actual damages to you for an individual event based on any cause whatsoever shall be the greater of 1) $100,000 or 2) the amount you paid for the Machine which caused the damages. This limitation of liability will not apply to claims for personal injury or damage to real property or tangible personal property caused by IBM's negligence. In no event will IBM be liable to you for any damages caused by your failure to fulfill your responsibilities under this Statement of Limited Warranty. In no event will IBM be liable for any lost profits, lost savings, incidental damages, or other consequential damages. This is true even if you advised IBM or a Remarketer of the possibility of such damages. IBM is not liable for any claim by you based on any third party claim.

Product Information

The following information should be recorded and retained:

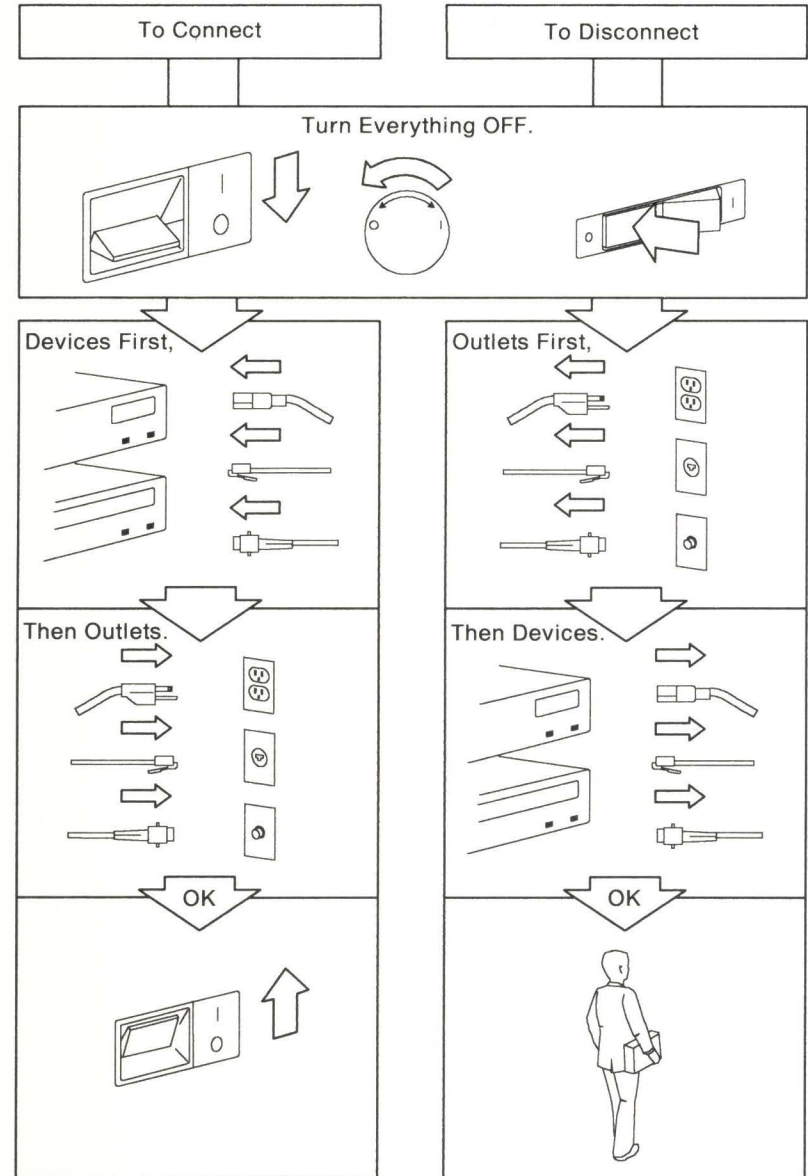
IBM 7690 Clinical Workstation

IBM Model Number _____

IBM Serial Number _____

- The model number of this product is located on the bottom panel of the product and has a prefix of *Model No*.

- The serial number of this product is located on the bottom panel of the product and has a prefix of *Item-Serial No*.

| Electrical Safety | Electrical current from power, telephone, and communications cables is hazardous. Connect and disconnect cables as shown when installing, moving, or opening the covers of this product or attached devices. |

| To Connect | To Disconnect |

Turn Everything OFF.

Devices First,

Outlets First,

Then Outlets.

Then Devices.

OK

OK

Preface

The IBM 7690 Clinical Workstation's one-piece design incorporates a system board (8086 processor and 640Kb memory), power supply, IBM 7690 Interface Adapter, 3.5-inch (1.44Mb) diskette drive, fold-away keyboard, back-lit liquid crystal display (LCD), and infrared touch panel. It meets Underwriter's Laboratory UL-544 specifications for use in patient-care environments.

This guide tells you how to install, operate, and test your clinical workstation. You can tailor the workstation to your needs by adding hardware and software options.

How to Use This Guide

- **Section 1, "Getting Started"** provides unpacking and installation instructions, and tells you how to use the services of the Customer-Level Diagnostic Diskette (included with this guide).

- **Section 2, "Installing Options"** provides instructions for installing internal and external options.

- **Section 3, "Testing Your Workstation"** tells you how to test the system, and helps you in problem determination.

- **Section 4, "Operating Your Workstation"** provides information about using the workstation's keyboard, touch panel, and bar code feature.

- **Section 5, "Maintaining Your Workstation"** contains care and cleaning information as well as replacement procedures for customer-replaceable items.

- **Appendix A, "Additional Information"** contains other information about your Clinical Workstation that may help you.

Related Publications

The following is a list of associated reference materials:

- *IBM 7690 Clinical Workstation Technical Reference* SA12-7009 (P/N 49F6182)

- *IBM 7690 Clinical Workstation Hardware Maintenance and Service* SA12-7008 (P/N 49F6181)

Contents

Section 1. Getting Started

This section describes the IBM 7690 Clinical Workstation, provides installation instructions, and shows you how to use the Customer-Level Diagnostic Diskette that came with this guide.

Product Description

The IBM 7690 Clinical Workstation is a personal computer designed to conform with UL 544 specifications (patient-care environment). With its 3.5-inch, 1.44Mb diskette drive and its 8086 microprocessor, the Clinical Workstation is similar to the IBM Personal System/2® (PS/2) Model 25 and Model 30.
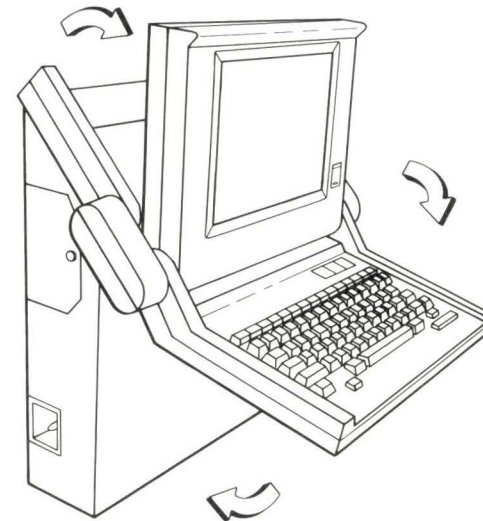
The one-piece design incorporates a fold-away keyboard and display, allowing the Clinical Workstation to be mounted vertically. The display is a full-sized (640 x 480 pel) back-lit, liquid crystal display

---

Personal System/2 and PS/2 are registered trademarks of the International Business Machines Corporation.

(LCD). The non-detachable keyboard is adjustable between two operating positions and folds away to protect itself and the LCD when not in use.

A screen-saver function, which blanks the LCD screen, can be activated by application programs. When the screen is blanked, at least one keyboard indicator light will be illuminated, reminding you that the workstation is still turned on.

The Clinical Workstation employs an infrared touch panel, allowing it to work with touch-screen applications. The keyboard can be pushed down and out of the way when running touch-screen applications.

An internal battery pack is provided which automatically supplies three minutes of backup power when primary power is lost. The battery pack is intended to prevent loss of data during the transition between primary and emergency power systems.

An optional bar code wand/card reader is available for the Clinical Workstation as Feature Number 0001. An optional wall mount bracket is also available as Feature Number 0002. See page 2-13 for more information.

The Clinical Workstation contains four expansion slots. One of these slots contains the IBM 7690 Interface Adapter—an integral part of the Clinical Workstation. This leaves three expansion slots (one long and two short) for the installation of additional features. Refer to Section 2, "Installing Options" on page 2-1 for more information.

Installing Your Workstation

Follow these procedures to unpack and install your workstation.

1 Unpack the Clinical Workstation from its carton. You should find:

- the workstation (includes keyboard and display),
- a power cord,
- a keyboard cable,
- this manual with a Customer-Level Diagnostic Diskette, and
- the bar code feature (if purchased as a factory-installed option).

2 Make sure the workstation power switch is off.
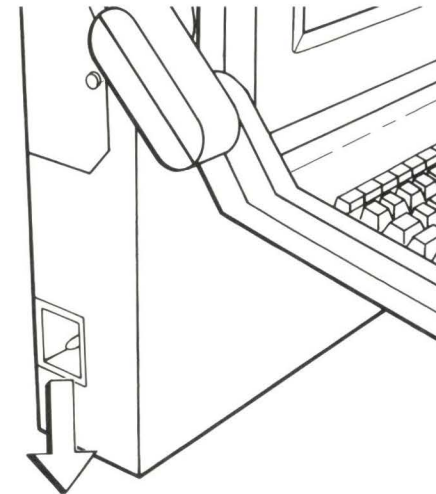
3 Connect the keyboard cable to the keyboard connector **1** and the interface adapter **2** on the bottom of the workstation.
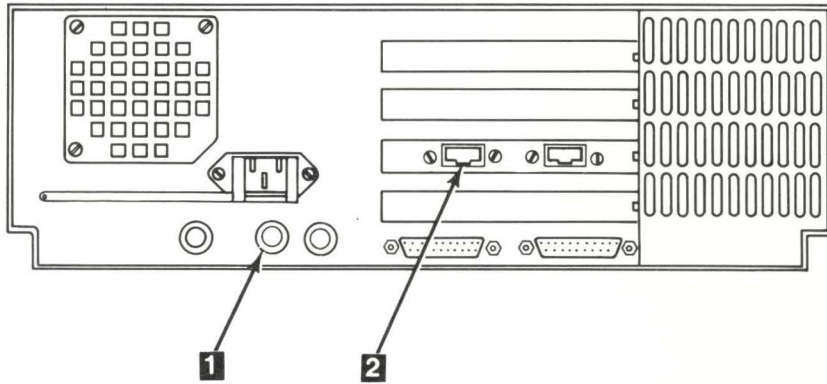
4 If your workstation came with the optional bar code feature, connect the bar code wand cable **1** as shown below. Place the wand into its holder on the side of the workstation.
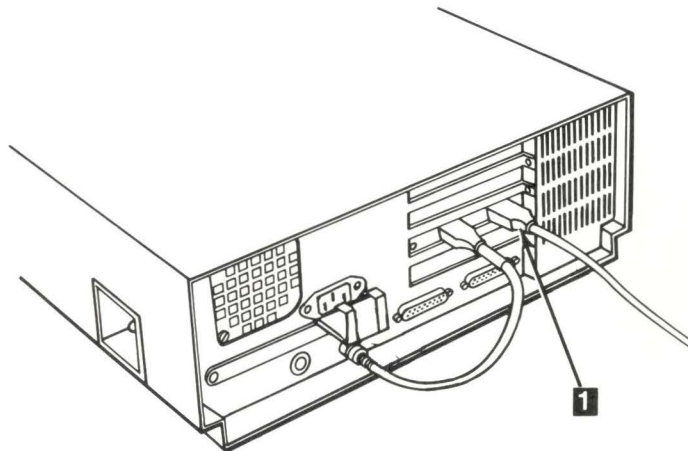
5 Remove the two screws attaching the power cord retaining bracket **2** to the workstation. Then connect the power cord provided **1** to the workstation. Reattach the power cord retaining bracket **2** to the workstation with the two screws.
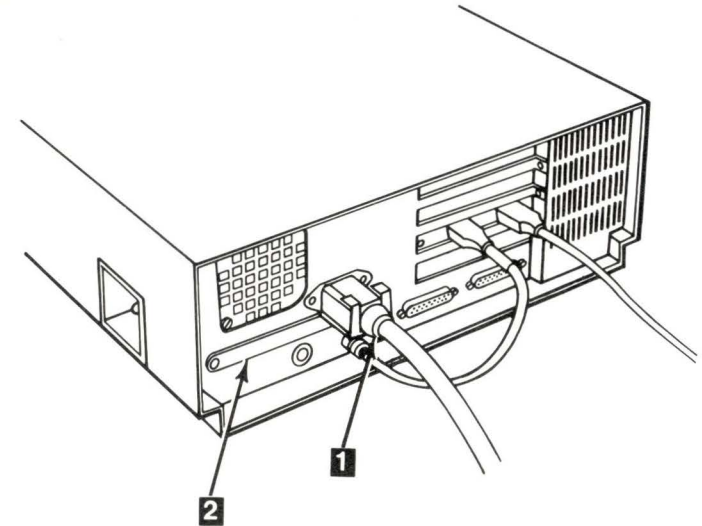
6 The workstation must be installed onto a mounting device. IBM offers an optional Wall Mount Feature for the Clinical Workstation. See page 2-13 for more information.

Install the mounting device according to its instructions, and mount the workstation onto the mounting device.

Warning: Your mounting device must be capable of supporting a 45.36 kg (100 lb) load to provide a 3-times safety margin.

7 Plug the power cord into the electrical outlet.

Note: The Clinical Workstation has a battery ride-through circuit. The power cord should be plugged into your facility's emergency-power electrical outlet for proper operation.

Always turn off the workstation before unplugging its power cord to keep the battery fully charged.

The Clinical Workstation is installed. Continue with the next section to use the services of the Customer-Level Diagnostic Diskette.

Using the Services of the Customer-Level Diagnostic Diskette

The Customer-Level Diagnostic Diskette included with your system provides you with the following services:
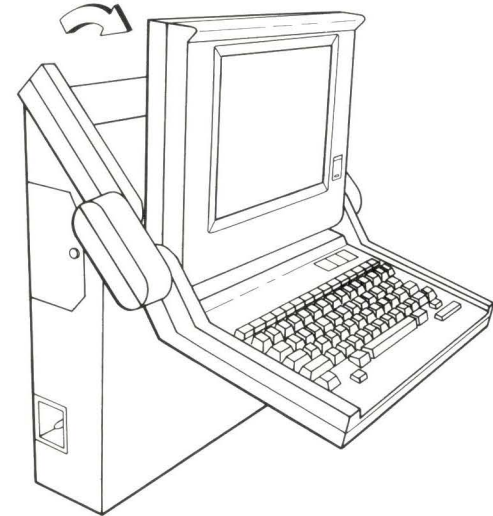
- System Checkout
- Format a Diskette
- Copy a Diskette
- Set Time and Date
- Automated device driver installation for the Touch Panel

Perform the following steps to start the Customer-Level Diagnostic Diskette.
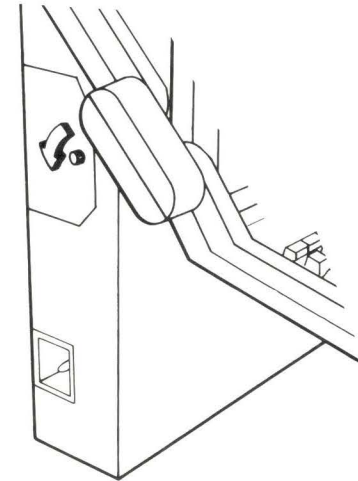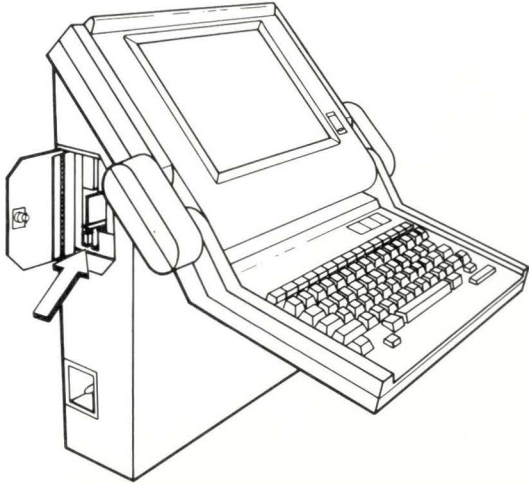
1 Fold the keyboard down to its normal operating position.

2 Pull the display screen forward to a comfortable viewing position.

3 Turn the knob counter-clockwise on the diskette drive door and pull it open.

4 Press the blue eject button to ensure that no diskettes are in the diskette drive.

5 Insert the Customer-Level Diagnostic Diskette into the diskette drive as shown below. Push the diskette into the drive until it *clicks* into place, and close the door.
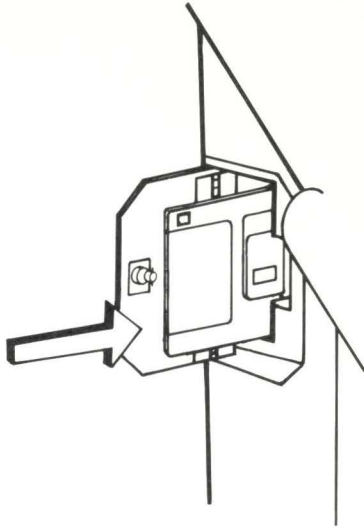
6 Open the cover over the brightness and contrast controls. Slide the brightness **1** and contrast **2** controls on the display screen to their middle positions. Close the cover over the controls.
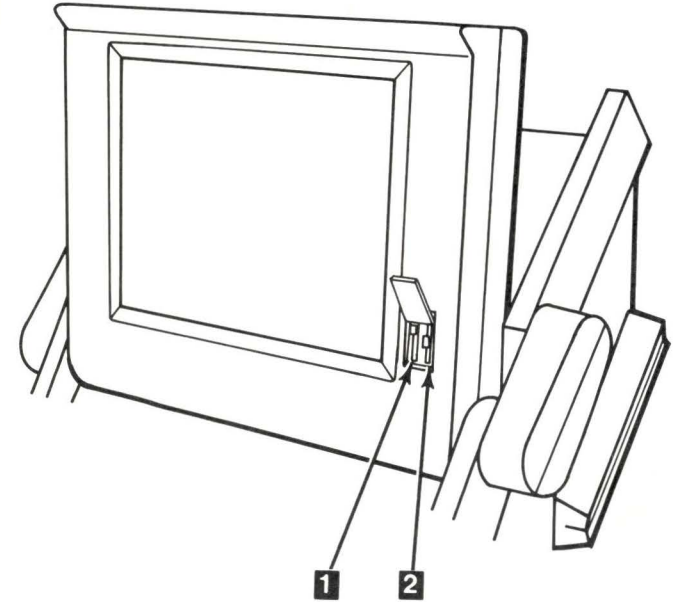
7 Turn on the power switch.

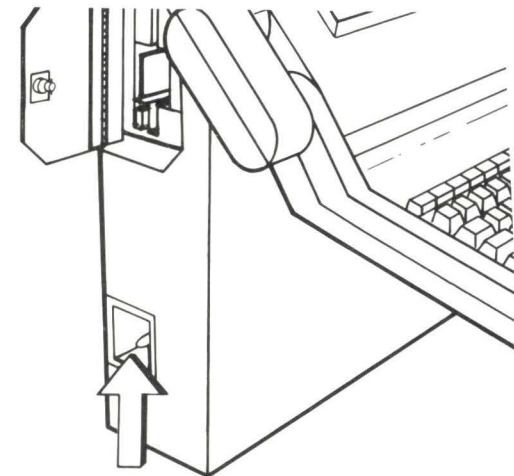**8** The workstation runs a power-on self test (POST) that tests—among other things—system memory. As memory is being checked, you should see the memory size displayed in the upper left-hand corner of the screen. Adjust the brightness and the contrast controls for optimum viewing. The POST takes approximately 45 seconds to complete at which time you should hear one beep.

DID YOU HEAR ONE BEEP?

YES   Continue with the next step.

NO   Perform the diagnostic procedures found in Section 3, "Testing Your Workstation."

9 After successfully completing the POST, the workstation loads the Customer-Level Diagnostics from the Diagnostic Diskette. The IBM logo screen (shown in the following figure) should appear briefly.
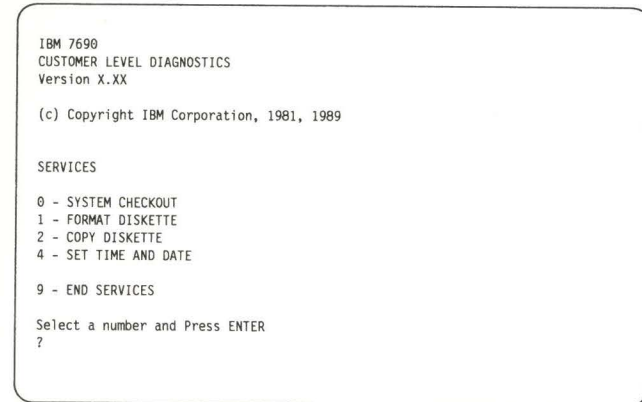
```
IBM

IBM 7690

Customer Level Diagnostics

(C) Copyright IBM Corporation 1989
```
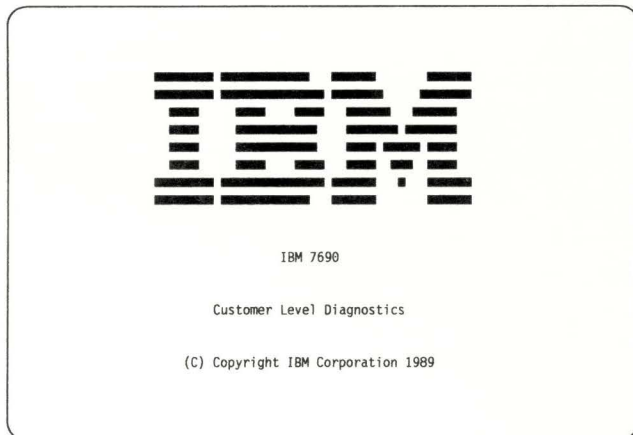
DID THE IBM LOGO SCREEN APPEAR?

YES   Continue with the next step.

NO   Remove the diskette and verify that:

 • It is the Customer-Level Diagnostic Diskette.

 • It was inserted properly. To verify that the diskette was inserted properly, begin with Step 3 on page 1-7.

Note: If the diskette does not seem to be the source of the problem, go to Section 3, "Testing Your Workstation."

10 After the IBM logo screen, the Services menu (shown in the following figure) appears on the screen.

```
IBM 7690
CUSTOMER LEVEL DIAGNOSTICS
Version X.XX

(c) Copyright IBM Corporation, 1981, 1989


SERVICES

0 - SYSTEM CHECKOUT
1 - FORMAT DISKETTE
2 - COPY DISKETTE
4 - SET TIME AND DATE

9 - END SERVICES

Select a number and Press ENTER
?
```

11 To select an option from this menu, type its menu number and press the Enter key. Each of the menu options is described below.

System Checkout: This program performs several tests on your workstation. Detailed instructions are provided in Section 3, "Testing Your Workstation."

Format Diskette: This program prepares a diskette for use by erasing any information on the diskette and creating sectors to allow new information to be recorded. This program is for diagnostic purposes only. Use the DOS FORMAT command to prepare your working diskettes.

Copy Diskette: This program copies *all* information from one diskette to another. If the *target* (destination) diskette is blank, it is formatted as information is being copied to it. We will use this program to make a back-up copy of the Customer-Level Diagnostic Diskette.

Note: Use this program only for low-density (1.0Mb unformatted, 720Kb formatted) diskettes.

Set Time and Date: A program to set or change the workstation time and date. Since your workstation contains a battery that keeps the internal clock operating continuously, you will only

need to use this program when a new clock battery is installed, or to keep up with local time changes.

12 Now that you know how to access the services provided on the Diagnostic Diskette, perform the instructions provided in "Backing Up Your Customer-Level Diagnostic Diskette" on page 1-13. Return the Customer-Level Diagnostic Diskette to its holder in the back of this manual and use the back-up copy as necessary.

13 After installing your workstation and making a back-up copy of the Customer-Level Diagnostic Diskette, other hardware options (such as a network adapter) can be installed. To install options, see Section 2, "Installing Options."

Before you begin using your software programs, refer to Section 4, "Operating Your Workstation" for information about using the unique features of the Clinical Workstation.

Before using touch screen application software, refer to "Installing the Touch Panel Software" on page 4-11.

Backing Up Your Customer-Level Diagnostic Diskette

To copy the Customer-Level Diagnostic Diskette, you need a blank diskette or a diskette that contains data that you no longer need. The diskette must be a low-density (1.0Mb unformatted, 720Kb formatted), 3.5-inch diskette. This diskette is the *target* diskette that will be referred to by the Copy Diskette program. The Customer-Level Diagnostic Diskette (or any diskette you want to copy) is referred to as the *source* diskette.

The following procedure backs-up your Customer-Level Diagnostic Diskette.

1 Label the new diskette and set the tab to the Not Write-Protected position.

Top View   Bottom View

Not Write-Protected

Write-Protect Tab   Write-Protected
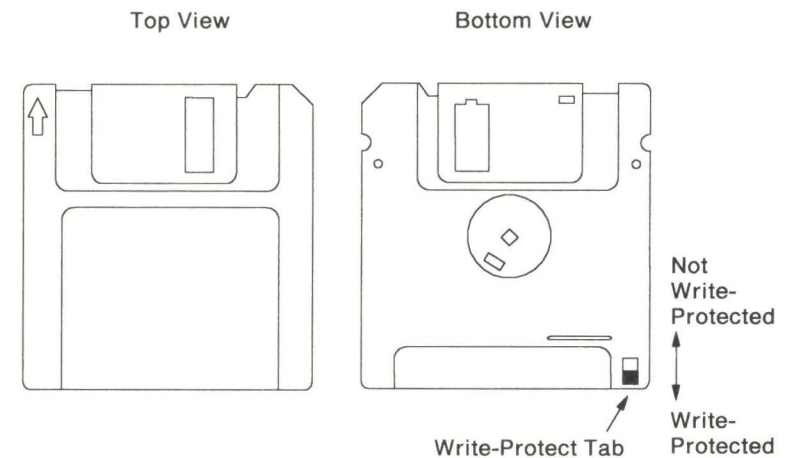
2 Start the workstation with the Customer-Level Diagnostic Diskette as described in "Using the Services of the Customer-Level Diagnostic Diskette" on page 1-6.

3 When the Services menu appears, select the Copy Diskette option by typing **2** and pressing the Enter key.

4 The Copy Diskette program prompts you to put the source diskette in the diskette drive. Since we are backing up the Customer-Level Diagnostic Diskette, it should already be in the drive.

5 When the program prompts you to insert the target diskette, press the blue eject button on the diskette drive to remove the source diskette. Then insert the new diskette in the diskette drive.

6 If you are backing up a diskette with more than 640Kb of data on it, you will be prompted to reinsert the source diskette. Follow the instructions on the screen until the program indicates that the copy is complete.

Section 2. Installing Options

This section provides instructions to install:

- Internal options
- External options
- 7690 Bar Code Feature
- 7690 Wall Mount Feature

Warning

Internal options must be installed only in a non-patient environment by trained service personnel.

Internal Options

Internal options are components that are installed inside the workstation to expand its capabilities. Use the instructions in this section to install the following options[1]:

- IBM Token Ring Adapter

- Alternate IBM Token Ring Adapter

Follow the installation instructions that are supplied with the option, if any. If the adapter has switch or jumper settings that need to be set, locate and use the switch and jumper information from the Personal Computer, Personal Computer XT™ Personal Computer AT®, or Personal System/2® Model 30 instructions that are supplied with the adapter. The switch and jumper information is the same in all packages.

---

[1] If you are installing an option other than those listed, and installation instructions for the Clinical Workstation are *not* supplied, contact IBM to be sure that the option will operate in the Clinical Workstation.

Personal Computer XT is a trademark of the International Business Machines Corporation.

Personal Computer AT and Personal System/2 are registered trademarks of the International Business Machines Corporation.

Save any switch or jumper information with this *Guide to Operations* for future reference.

Installation Requirements

Before you can begin, you will need:

- a flat work surface large enough to hold the workstation and any options you wish to install,
- a 3/8-inch nut driver,
- a medium, flat-blade screwdriver, and
- a Phillips screwdriver.

Cover Removal

1 Turn off the workstation.

2 Turn off all external options (printer and other options).

3 Unplug the workstation power cord from the electrical outlet.

   Note: You must turn off the workstation before unplugging the power cord or the battery will continue to run the work-station and drain the battery.

4 Disconnect all external options (such as a printer) from the workstation.

5 Remove the workstation from its mounting device and place it on its back on a flat work surface.

6 Remove the two screws holding the power cord bracket **1** to the bottom panel of the workstation, and disconnect the power cord **2**
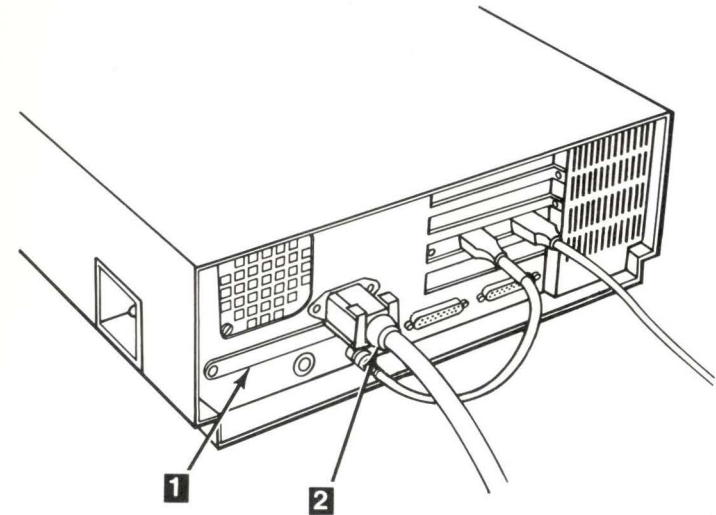

7 Remove the cables from the bottom panel of the workstation. Use the following figure to note the cable locations.
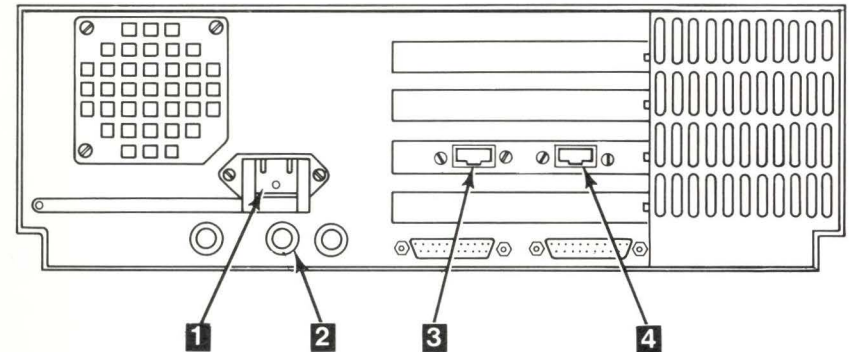

1 Power Cord   **3** Keyboard Cable
**2** Keyboard Cable   **4** Bar Code Wand Cable

8 Move one side of the workstation to the edge of your working surface so that the cover mounting screws are accessible, and remove three cover mounting screws. Repeat for the opposite side.
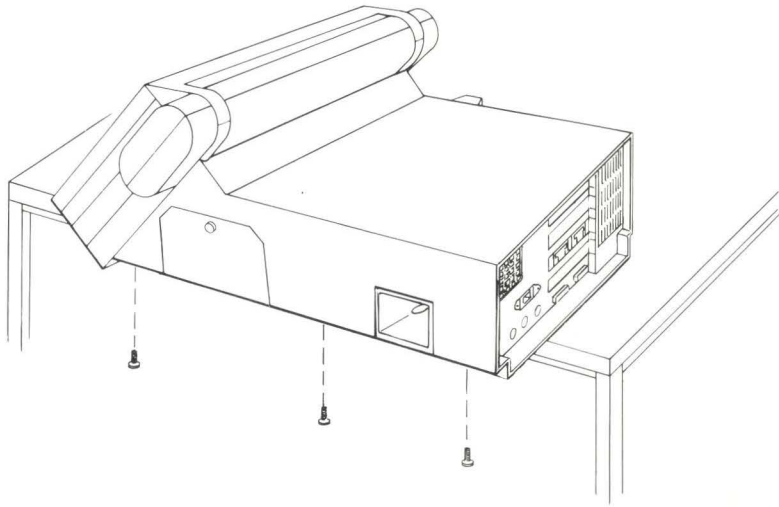
9 Lift the cover straight up until it clears the chassis. Be careful not to pull the internal cables that are still connected.
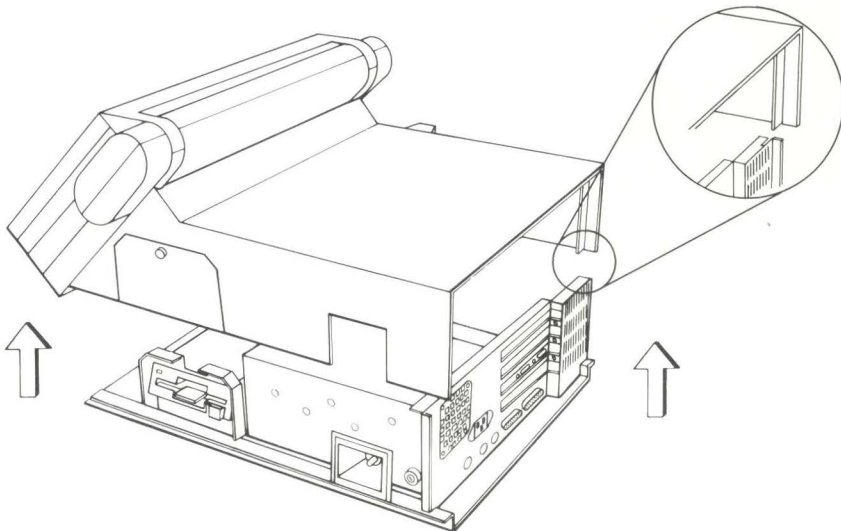
10 Hold the cover as shown below and disconnect the LCD cable **1** and the internal keyboard cable **2** from their connectors on the interface adapter.
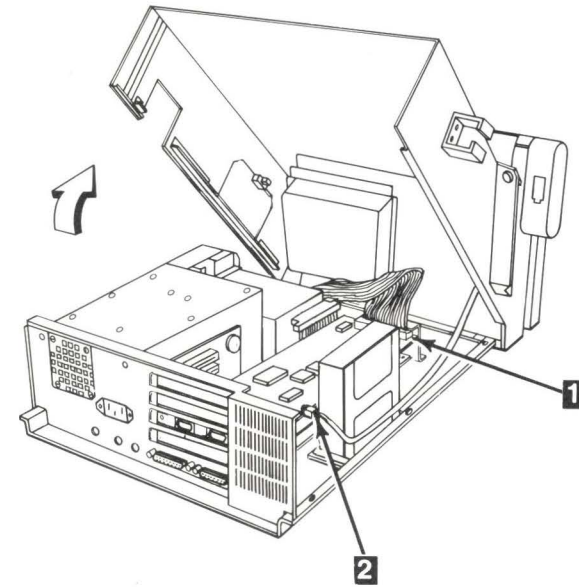
11 Set the cover aside, and continue with "Adapter Installation."

Adapter Installation

The Clinical Workstation contains four adapter slots. One of these slots contains the IBM 7690 Interface Adapter—an integral part of the Clinical Workstation. This leaves three slots (one long and two short) for you to install additional adapters.

The following precautions must be observed when installing an adapter:

- Install full-length adapters in the bottom slot only (the slot closest to the system board). Full-length adapters are 35 cm (13.5 inches) long.

- The Interface Adapter must remain in the second slot from the bottom (as installed by the factory).

- Install only short adapters in the top two adapter slots (furthest from the system board). Short adapters are 25.4 cm (10 inches) in length or less.

If you are installing a short adapter, start with Step 4 on page 2-7. Otherwise, start with Step 1 below.

1 To install an adapter in the bottom slot, you must first remove the battery pack and its holder. Remove the two screws holding the battery door **1** to the chassis.

2 Remove the battery pack **2** and disconnect the battery cable **3**.
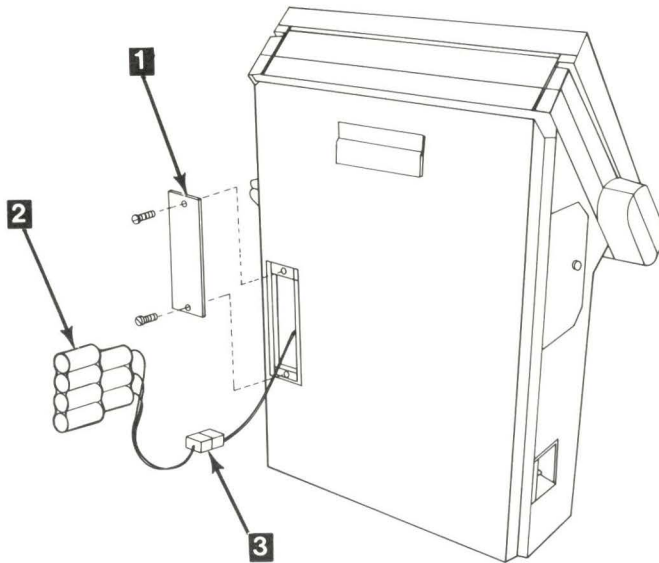
3 Remove the four screws attaching the battery holder and slide it out of the chassis.

4 Remove the screw and slot cover **1** of the slot you wish to use. Save the screw for the installation of the adapter.
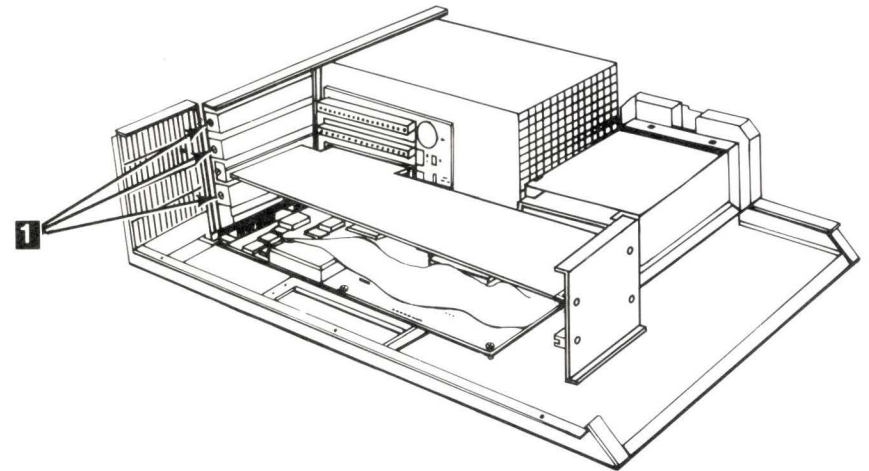
5 Refer to the installation instructions provided with the adapter. Set any switches or jumpers on the adapter, if necessary.

6 Hold the adapter by its edges with the components facing upward, and align it with the slot's support bracket. If you are installing a full-length adapter, you must also align it with the adapter guide **1**. Firmly press the adapter into the adapter slot.
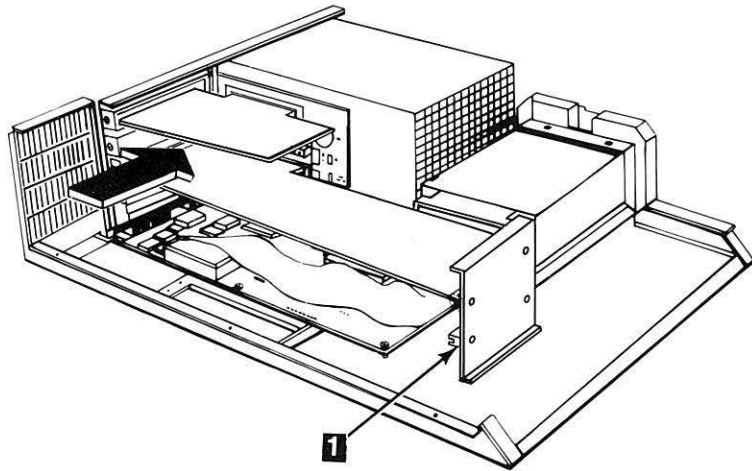

7 To secure the adapter, install the screw you removed in Step 4 on page 2-7.

8 If you have other internal options that need to be installed, do so now. If not, continue with "Cover Installation" on page 2-9.

Cover Installation

If you installed a short adapter in one of the two top slots, the battery pack and battery holder should still be installed, and you can skip to Step 4 on page 2-10. Otherwise, start with Step 1 below.

1 Attach the battery holder to the chassis using the four screws you removed.

2 Connect the battery cable **1** and place the battery pack **2** in the battery holder.

3 Install the battery door **3** using the two screws you removed.
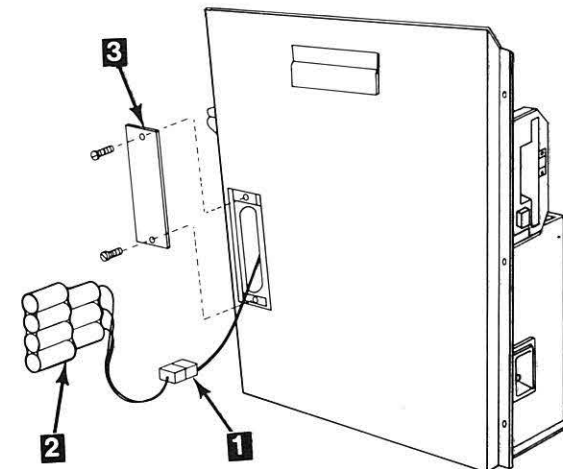
4 Place the cover as shown below. Connect the LCD cable **1** to J1, and connect the internal keyboard cable **2** to J3 on the interface adapter.
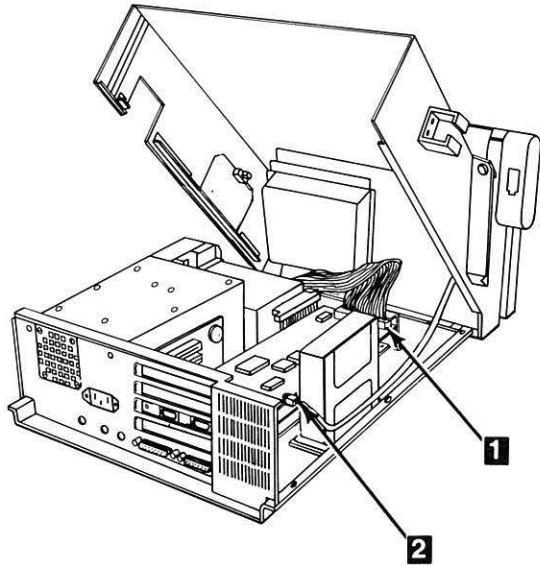
5 Align the tab inside the cover with the slot in the chassis as shown below, and slide the cover straight down.
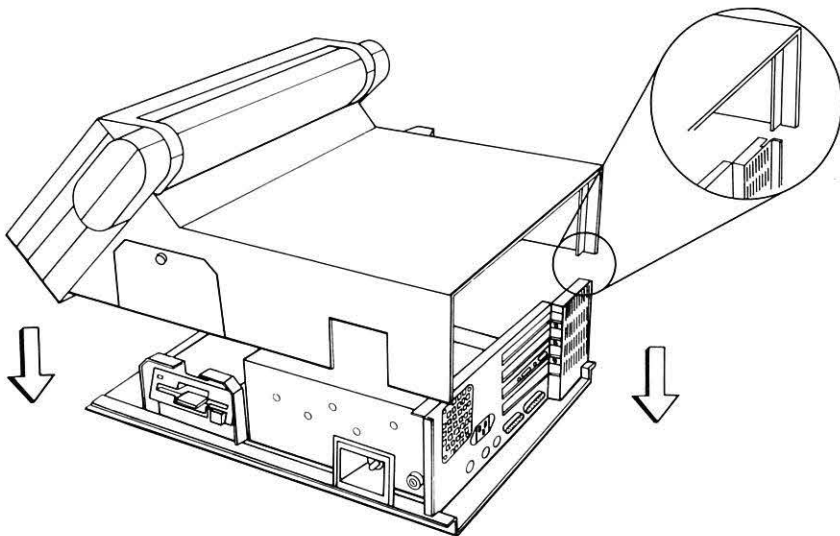
6 Insert and tighten the six cover mounting screws.
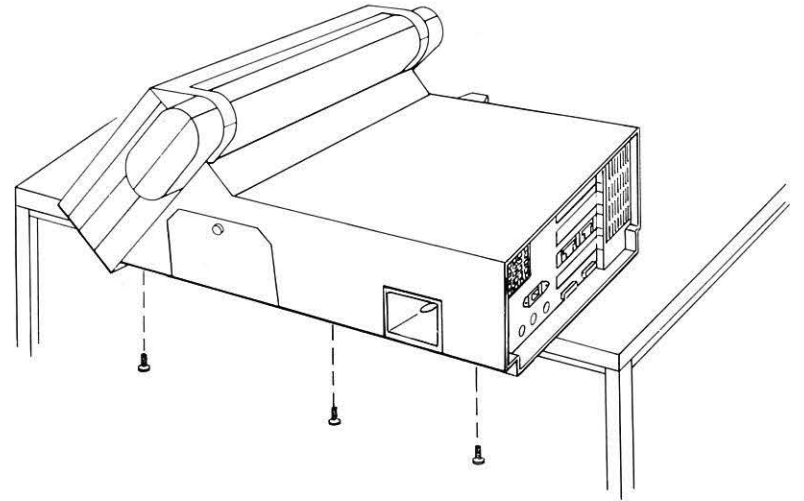
7 Replace any cables removed during cover removal.

Go to "External Options" on page 2-12, if you have any to install. Otherwise, go to Section 3, "Testing Your Workstation" to verify that your system is operational.

External Options

External options are devices that attach to connectors or ports on the outside of your workstation. Some examples of external options are:

- Printers
- Communications (serial or parallel) devices.

Refer to the instructions supplied with your option for installation instructions. The illustration below shows the location of the primary serial and parallel connectors.

Note: Save any switch or jumper information with this *Guide to Operations* for future reference.
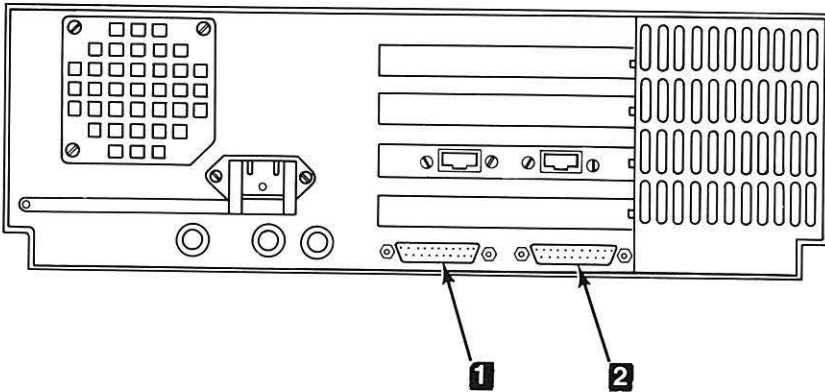

1 Serial connector

2 Parallel connector

Now that you have installed your options, go to Section 3, "Testing Your Workstation" to verify that your system is operational.

Bar Code Feature

If your workstation was ordered without the Bar Code Feature, you may wish to order it at a later date. The IBM Part Number for this feature (Feature Number 0001) is 49F6178.

Refer to the instructions provided with the Bar Code Feature for the installation procedure.

Wall Mount Feature

The IBM Part Number for the Wall Mount Feature (Feature Number 0002) is 49F6189.

Refer to the instructions provided with the Wall Mount Feature for the installation procedure.

Section 3. Testing Your Workstation

This section shows you how to perform a System Checkout which tests the various components of your workstation. Follow these steps after installing any options to verify that the installation has not affected the operation of the system.

If you are experiencing a problem with your workstation, use this section to help determine the cause of the problem and what you can do to correct it. Problems with your workstation can be caused by software, hardware, or both.

Notes:

1. Use this section to test only IBM products. Non-IBM products may give invalid errors or responses.

2. Some devices that attach to your workstation have test instructions. Refer to those instructions when testing those devices.

3. Record any error message or symptom for future reference.

4. When using software, you may receive error messages. Refer to the software manual for a description of those messages.

Starting the Tests

Your workstation performs a power-on self test (POST) each time you turn it on. Due to the integrated nature of the workstation, its POST has been enhanced to provide extended display and keyboard diagnostic tests. Additional tests are available on the Customer-Level Diagnostic Diskette that is provided with this guide.

Follow these steps to begin testing your workstation:

1 Turn off the workstation.

2 Insert the Diagnostic Diskette into the diskette drive.

3 Turn on the workstation.

4 Count the number of beeps that the workstation makes during the self test. When reporting a problem, you will be asked how many beeps you heard. The workstation generates one beep to indicate that the POST was successful.
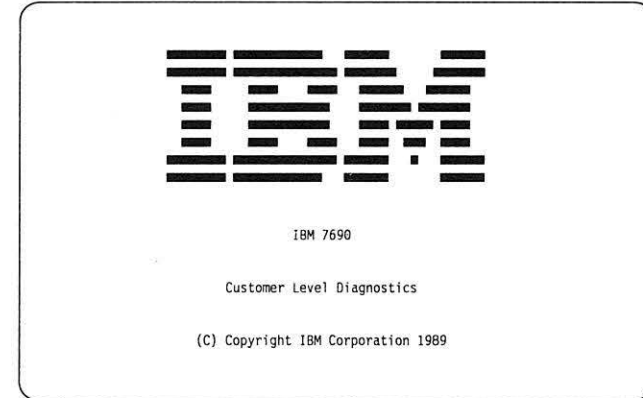
> **Note:** Some system errors allow you to press the F1 key to continue. This allows you to operate your system with reduced function. Write down the error message and the number of beeps before pressing F1.

If an error is detected by the POST, the workstation generates two or three beeps—depending on the error—and displays the failing test number. If a non-critical error occurs, the workstation displays the **(RESUME = "F1" KEY)** message. If a critical error occurs, the error number is displayed and the workstation halts all operation.
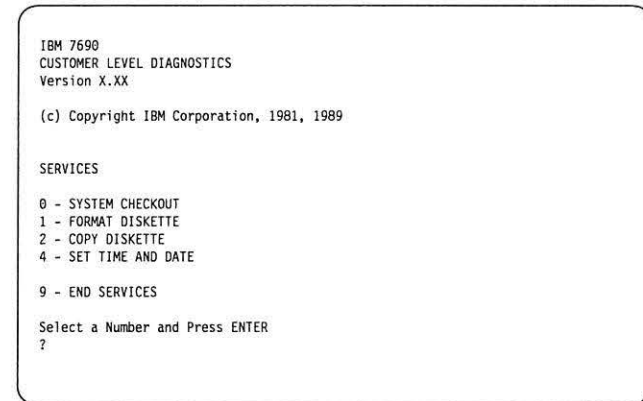
> **Note:** If three beeps are heard during the POST, a critical error has been detected in the display or keyboard, and your workstation requires servicing.

5 After the POST is complete, you will hear one beep. The IBM logo (shown below) appears briefly on the screen.

```
    ═══  ══    ═══
     ║   ║  ║  ║  ║  ║    ║
     ║   ══    ══   ║ ║ ║ ║
     ║   ║  ║  ║  ║  ║  ║  ║
    ═══  ══    ═══   ║    ║


              IBM 7690

        Customer Level Diagnostics

        (C) Copyright IBM Corporation 1989
```

6 The Services menu (shown below) is then displayed.

```
IBM 7690
CUSTOMER LEVEL DIAGNOSTICS
Version X.XX

(c) Copyright IBM Corporation, 1981, 1989


SERVICES

0 - SYSTEM CHECKOUT
1 - FORMAT DISKETTE
2 - COPY DISKETTE
4 - SET TIME AND DATE

9 - END SERVICES

Select a Number and Press ENTER
?
```

DID THE SERVICES MENU APPEAR?

YES The POST is complete. To continue testing, select the **SYSTEM CHECKOUT** option by typing 0 and pressing the Enter key. Follow any instructions on your screen.

If you receive an error message, find your error in the troubleshooting charts (starting on page 3-6) and take the action listed.

NO Refer to the troubleshooting charts (starting on page 3-6) and take the action listed.

7 Each test is numbered (100 through 9000) and the system reports when each test begins and ends. After the parallel port test (1100) is completed, the IBM 7690 Feature Tests menu appears. **Press the Enter key to run all tests.**

This completes the System Checkout. If you did not receive an error message, your workstation is ready to be placed in service. If you did receive an error message, refer to the troubleshooting charts (starting on page 3-6) and take the action listed for your error message.

The System Checkout performs self tests for the components in your workstation. Continue with the following procedures to perform interactive tests for the touch panel and bar code feature.

Testing the Touch Panel Feature

To thoroughly test the touch panel, perform the following steps:

1 Start the diagnostic tests as described in "Starting the Tests" on page 3-2.

2 When the IBM 7690 Feature Tests menu appears, select the **TOUCH PANEL TESTS** option.

3 When the Touch Panel Test menu appears, select the **TOUCH TRACKING** option.

4 While touching the screen, move your finger in various directions. Two bars should intersect on the screen directly under your finger, and the bars should move with your finger.

Note: Press the ESC key to return to the Touch Panel Test menu.

5 If the touch panel does not properly track your finger movement, refer to the troubleshooting charts starting on page 3-6.

Testing the Bar Code Feature

To thoroughly test the bar code feature, perform the following steps:

1 Start the diagnostic tests as described in "Starting the Tests" on page 3-2.

2 When the IBM 7690 Feature Tests menu appears, select the **BAR CODE FEATURE TESTS** option.

3 When the Bar Code Test menu appears, select the **SINGLE TEST** option.

4 Scan the following bar code with the bar code wand and follow any instructions on the screen.

1 2 3 4 5 6 7 8
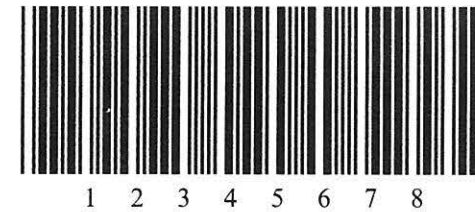
5 If you receive an error message, look it up in the troubleshooting charts starting on page 3-6.

Refer to "Using the Bar Code Wand and Card Reader" on page 4-13 for special operating considerations.

Troubleshooting Charts

Find your error message in the following table and perform the action shown. If your workstation is reporting more than one error message, take the action listed for the *first* error message.

Note: An **X** can be any number.

Error Message	Action
161 - System Date and Time - or - Clock Symbol Appears on the Screen	Press the F1 key to continue. Select the Set Time and Date program from the Services menu. If you cannot correctly set the time and date, or this message appears every time you power on, have the workstation serviced.
199 - Installed Devices List Error	**Internal Devices:** If an internal device was missing from the list, have the workstation serviced. **External Devices:** If an external device was missing from the list, refer to the instructions that came with the device for testing information. If there is no testing information, have the work-station and external device serviced.
205 - Memory Error	Have the workstation serviced. Pressing the F1 key allows you to continue using the workstation with reduced memory.
301 - Keyboard or Computer Error	Make sure the external keyboard cable is properly connected and a key is not being held down. If a key is not being held down: 1. Turn off the workstation. 2. Wait 20 seconds. 3. Turn on the workstation. If the **301** error remains, have the work-station serviced.
302 - Workstation Error	Have your workstation serviced.
6XX - Diskette Error - or - Diagnostic Diskette Program Will Not Load	Make sure you are using the Customer-Level Diagnostic Diskette and that it is inserted correctly. Try to start the Diag-nostic Diskette again. If the diskette program will not load, have the workstation serviced.

Error Message	Action
9015 - High light level	Keep bright light sources away from the display screen. If the error remains, have the workstation serviced.
9018 - Weak LED	Clean the bezel around the display. See Section 5, "Maintaining Your Workstation." If the error remains, have the workstation serviced.
9021 - Bar Code Feature	The bar code feature does not seem to be installed. If you recently installed this feature, make sure the bar code logic kit was properly installed. If the error remains, have the workstation serviced.
9022 - Bar Code Read Error	Ensure the bar code wand is connected to the workstation, clean the tip of the wand, and check the quality of the bar code you are trying to read. If the error remains, have the workstation serviced.
1XX - System Board Error **2XX** - Memory Address Error **3XX** - Keyboard Error **5XX** - Display Screen Error **9XX** - Parallel Port Error **11XX** - Serial Port Error **30XX** - Network Failure **31XX** - Network Failure **90XX** - Interface Adapter, etc.	Ensure that the device is installed. If it is, have the workstation serviced.
ROM Error **Parity Check 1** **Parity Check 2**	Have the workstation serviced.

If you did not receive any of the error messages listed above, look for your symptom in the following table and perform the action listed.

Notes:

1. If you have a display problem, check the brightness and contrast control adjustments.

2. If you have just installed internal options, internal cables may not be properly connected.

Symptom	Action
No beep during the POST More than one beep during the POST Continuous beep Blank or unreadable display Any other error message	Have the workstation serviced.
Keyboard not working properly	Ensure that the keyboard cable is connected between the interface adapter and the keyboard connector on the bottom panel of the workstation. If the failure continues, have the workstation serviced.
Bar code wand not working	Ensure the bar code wand is connected to the workstation, clean the tip of the wand, and check the quality of the bar code you are trying to read. If the error remains, have the workstation serviced.
Touch panel not working	Clean the bezel around the display. See Section 5, "Maintaining Your Workstation." If the error remains, have the workstation serviced.
Any printer error or problem	Go to page 3-10.

If you have reached this point and have not identified your problem, you may want to seek technical assistance. A person trained to help with technical problems may be available at your location or place of purchase. The name and number can be recorded below:

Name	Number

Testing the Battery Pack

The battery ride-through system is designed to keep the workstation running until your facility's emergency power comes on. While running on the battery pack, the workstation's display and diskette drive will not operate. To test the battery pack, perform the following procedure:

1 Make sure the workstation has been plugged into an electrical outlet and turned on for a minimum of 24 hours so that the battery pack is fully charged.

2 Turn on the workstation and press the Caps Lock key so that the Caps Lock indicator light is illuminated.

3 *Without turning off* the workstation, unplug the power cord from the electrical outlet. The Caps Lock indicator light should still be illuminated.

4 Watch the Caps Lock indicator light; it should remain illuminated for three minutes.

5 After the three minute test, plug the power cord back into the electrical outlet.

If the Caps Lock indicator light was not illuminated for the full three minutes, the battery pack should be replaced.

Note: The battery pack should be replaced every two years.

Refer to "Replacing the Battery Pack" on page 5-4 for replacement procedures.

Testing a Printer or Other External Option

Refer to the instructions that are supplied with your printer or other external option and check to see that it is:

- Cabled correctly
- Plugged into a properly grounded outlet, if necessary
- Turned on
- Adjusted properly.

External options may have their own tests. Refer to the instructions that are supplied with the option and run its diagnostic tests. If the tests pass, have the workstation serviced. If the tests fail, have the external option serviced.

Section 4. Operating Your Workstation

This section contains information that will help you use the features of your workstation. It shows you how to:

- Restart the workstation
- Start IBM Personal Computer BASIC
- Use the Keyboard
- Use the Touch Panel
- Use the Bar Code Feature.

Restarting the Workstation

To restart your workstation, make sure the diskette drive contains a bootable diskette (a diskette that contains DOS) and perform one of the following:

- If the workstation is on, press the **Ctrl** key, **Alt** key, and **Del** key at the same time; then release them.

  - or -

- Turn off the workstation, wait five seconds, and then turn it on.

The power-on self test is performed, and DOS is loaded from the diskette. You are now ready to run DOS application programs.

Icons

If you do not have a diskette in the diskette drive when you restart your workstation, two icons (graphic messages) are displayed, prompting you to take specific actions.

First, the "Insert a Diskette" icon (shown below) tells you to insert a diskette that contains the operating system (DOS).

Note: Refer to the FORMAT command in your DOS manual to create a diskette with the operating system on it.
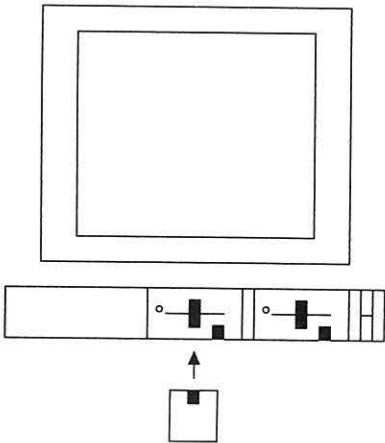
Second, the "Press F1 to Continue" icon (shown below) tells you to press the F1 key after you have inserted the diskette.
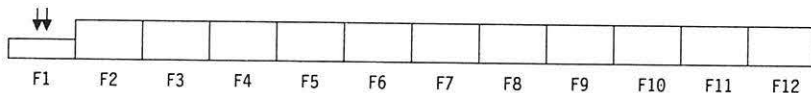
IBM Personal Computer BASIC

The workstation comes with a programming language installed in ROM (Read Only Memory) called IBM Personal Computer BASIC.

To start ROM BASIC, do the following:

1 Make sure the diskette drive does **not** contain a diskette.

2 Restart your workstation.

3 After the POST (signalled by one beep), the "Insert a Diskette" and "Press F1 to Continue" icons appear.

4 Press the **F1** key without a diskette in the diskette drive.

5 When the following screen appears, BASIC is loaded and ready to use. Refer to the *IBM BASIC* manual for further information.

```
The IBM Personal Computer Basic
Version XX.X Copyright IBM Corp. 19XX
XXXXX Bytes free

Ok




















1 LIST 2 RUN 3 LOAD" 4 SAVE" 5 CONT 6 ,"LPT1 7 TRON 8 TROFF 9 KEY 0 SCREEN
```

Note: While running ROM BASIC (as described above) the diskette drive is not operational. You will not be able to save programs on diskette.

Using the Keyboard

Many of the keys on the keyboard function the same as any other keyboard. Due to the compact design, some keys have extra functions assigned as indicated by the blue characters printed on the keys.

Some require the use of two keys pressed together as will be indicated by the plus sign (+) in the tables. Always press and hold the keys indicated in the order indicated. Do not release the key until all keys in the sequence have been pressed.

The keyboard contains:

- alphanumeric keys,
- general purpose keys,
- Ctrl keys,
- F keys (F1 through F10),
- Fn keys,
- cursor keys, and
- a numeric keypad.

| Esc | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 | F9 | F10 | Num | ScrL | Ins | Del |

```
'   1   2   3   4   5   6   7   8   9   0   -   =   \   <--
-->|  Q   W   E   R   T   Y   U   I   O   P   {   }
|<--                                          [   ]
Caps  A   S   D   F   G   H   J   K   L   :   "
Lock                                      ;   '     Enter
Shift   Z   X   C   V   B   N   M   <   >   ?        Prt
                                   ,   .   /   Shift  Sc *
Ctrl      Alt                          Alt         ↑
        Fn                                    ←   ↓   →
```

Figure 4-1. Clinical Workstation Keyboard Layout

This section discusses each group of keys individually.
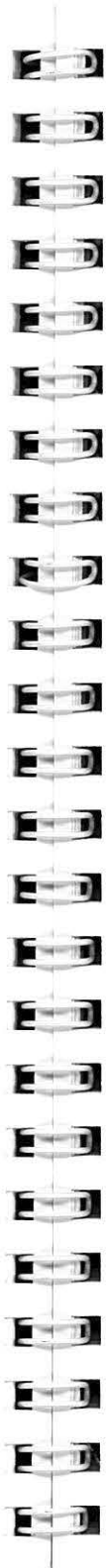
Alphanumeric Keys

The alphanumeric keys are patterned as on a typewriter. They function as on a typewriter or standard computer keyboard.

Key	Description
A through Z	Each key produces the lower-case value of the letter shown.
Shift + A through Z	Each key produces the upper-case value of the letter shown.
1 through 0	Each key produces the number shown.
Punctuation keys	Punctuation characters on the lower half of the key are obtained by pressing that key.
	Punctuation characters on the upper half of the key are obtained by pressing the shift key and that key.

General Purpose Keys

General purpose keys are positioned around the character set for general operation of the computer. Some require the use of two keys pressed together as will be indicated by the plus sign (+) in the tables.

Key	Description
Esc	(Escape) Performs a command or a function, as defined in your operating system or application program manual.
Scroll Lock	Defined in your operating system or application program manual. When the Scroll Lock is on, the Scroll Lock indicator is illuminated.

Key	Description
Ins	(Insert) Pressing the Ins key toggles between the insert mode and the replace mode. Pressing it again toggles to the other mode. Many application programs indicate the mode by a change in the cursor, a message on the screen, or both. In the insert mode, the characters you type are inserted before the character the cursor is on. In the replace mode, the characters you type replace the character the cursor is on.
Del	(Delete) Deletes the character at the cursor position.
Caps Lock	Pressing the Caps Lock key toggles the alphabetic characters A through Z between the upper-case and lower-case positions. Pressing it again returns the alphabetic characters to previous condition. When in the upper-case position, the Caps Lock indicator on the keyboard is illuminated. Pressing the Shift key will change from the current case to the other case as long as the Shift key is held. When released, the case will return to the current state of the Caps Lock key.
←	(Enter) Defined in your programming language or application program manual.
Shift + PrtSc	(Print Screen) Prints a copy of the screen.
Ctrl	(Control) Used with another key to perform a command or as function as defined in your operating system or application program manual.

Key	Description
Alt	(Alternate) Used with another key to perform a command or function as defined in your operating system or application program manual. The Alt keys are used with alphabetic typing keys to enter BASIC keywords. Holding the Alt and Fn keys and typing the appropriate numbers on the numeric keypad enters an ASCII character code.
Fn	(Function) Used with another key to perform a command or function.

Ctrl (Control) Key Combinations

Pressing the Ctrl key with another key or groups of keys will perform different functions.

Key	Description
Ctrl + Num Lock = Pause	Causes a pause in the operation of the system so you can read the screen. Press any key to continue.
Ctrl + Scroll Lock = Break	Under the control of the application program or operating system, stops your application while it is running.
Ctrl + Alt + Del = Initial Program Load	Clears the system memory and loads the system programs from the system diskette.
Ctrl	Generates the left control key.
Fn + Ctrl	Generates the right control key used in some application programs.

F Keys (F1 through F10)

The F keys are defined by the programming language you are using. These keys are located on the top row of the keyboard.

Fn Keys

The Fn key functions are printed in blue. To use these functions, press and hold the Fn key and while pressing the key with the desired function.

Key	Function
Fn + Esc = System Request	Defined in your application program manual, if applicable.
Fn + F1 = F11 Fn + F2 = F12	Defined in your application program manual, if applicable.
Fn + Num Lock = Numeric Lock	Activates or deactivates the numeric keypad characters printed in blue. See "Numeric Keypad" on page 4-9.
Fn + numeric keypad keys	Activates the number printed in blue on that key. See "Numeric Keypad" on page 4-9.
Fn + cursor keys	Activates the function printed in blue on that key. See "Cursor Keys" on page 4-9.
Fn + Enter	Generates the numeric keypad Enter used in some application programs.

Cursor Keys

The four arrow keys at the lower right corner of the keyboard control the cursor movement.

Key	Description
Cursor key	Cursor will move in the direction of the arrow on the key.
Fn + left cursor key	(Home) Cursor will return to far left on the same line.
Fn + right cursor key	(End) Cursor will return to the end of the same line.
Fn + up cursor key	(PgUp) Cursor will scroll up one page.
Fn + down cursor key	(PgDn) Cursor will scroll down one page.

Numeric Keypad

The numeric keypad provides a calculator-like pad for entering numbers in application programs. It includes the numbers, operators (-, +, /, and *), and punctuation labeled in blue on the keyboard.

The Numeric Lock (Fn + Num Lock) turns the numeric keypad on and off. The numeric keypad is also on while the Fn key is held down.
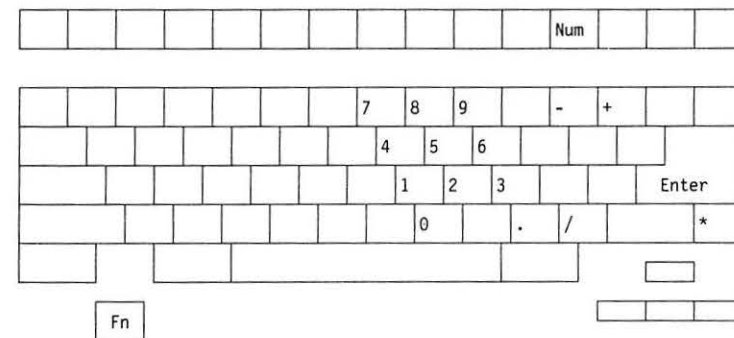
Figure 4-2. Numeric Keypad Keys

Typing Additional Characters Using the Numeric Keypad

You can type additional characters that may not appear on your keyboard by using the numeric keypad and following the procedure below.

1 Press and hold the **Alt** and **Fn** keys.

2 Using the numeric keypad, type the 3-digit code for the character as indicated in the following table.

3 Release the **Alt** and **Fn** keys.

126 ~	127 ⌂	128 Ç	129 ü	130 é	131 â
132 ä	133 à	134 å	135 ç	136 ê	137 ë
138 è	139 ï	140 î	141 ì	142 Ä	143 Å
144 É	145 æ	146 Æ	147 ô	148 ö	149 ò
150 û	151 ù	152 ÿ	153 Ö	154 Ü	155 ¢
156 £	157 ¥	158 P_{ts}	159 f	160 á	161 í
162 ó	163 ú	164 ñ	165 Ñ	166 ª	167 º
168 ¿	169 ⌐	170 ¬	171 ½	172 ¼	173 ¡
174 «	175 »	176 ▒	177 ▓	178 █	179 │
180 ┤	181 ╡	182 ╢	183 ╖	184 ╕	185 ╣
186 ║	187 ╗	188 ╝	189 ╜	190 ╛	191 ┐
192 └	193 ┴	194 ┬	195 ├	196 ─	197 ┼
198 ╞	199 ╟	200 ╚	201 ╔	202 ╩	203 ╦
204 ╠	205 =	206 ╬	207 ╧	208 ╨	209 ╤
210 ╥	211 ╙	212 ╘	213 ╒	214 ╓	215 ╫
216 ╪	217 ┘	218 ┌	219 █	220 ▄	221 ▌
222 ▐	223 ▀	224 α	225 β	226 Γ	227 π
228 Σ	229 σ	230 μ	231 τ	232 Φ	233 Θ
234 Ω	235 δ	236 ∞	237 ∅	238 ∈	239 ∩
240 ≡	241 ±	242 ≥	243 ≤	244 ⌠	245 ⌡
246 ÷	247 ≈	248 °	249 •	250 ·	251 √
252 ⁿ	253 ²	254 ■			

Using the Touch Panel

The touch panel allows you to operate the Clinical Workstation by touching commands or functions displayed on the screen by a touch screen application program. To avoid performing undesired commands or functions, keep your finger as perpendicular to the screen as possible; do not use a wiping motion when making a selection.

Installing the Touch Panel Software

To allow touch screen application programs to use the the touch panel feature, you must install the LEDTOUCH device driver—a software driver that is provided on the Customer-Level Diagnostic Diskette—on your System diskette. A System diskette is a diskette that contains the Disk Operating System (DOS), and is used to boot (start) the computer.

The installation procedure is automated through the use of a batch processing file.

Note to Experienced DOS Users

The following procedure transfers the LEDTOUCH.SYS file to the root directory of your System diskette and modifies the CONFIG.SYS file by adding DEVICE=LEDTOUCH.SYS.

Requirements

- DOS version 3.3 or higher.
- 7.5K bytes of space on your System diskette.

   Note: The installation program will determine if your diskette contains enough space.

Instructions

1 Prepare a System diskette using the DOS FORMAT command. A System diskette is a diskette that contains the operating system. See the DOS manual for details.

2 Restart your workstation with the System diskette created in Step 1.

3 When the DOS prompt (A>) appears, remove your System diskette, and insert the Customer-Level Diagnostic Diskette in the diskette drive.

4 At the DOS prompt, type:

Iedinst

and press the Enter key (←┘).

5 When the installation program prompts you, remove the Diagnostic Diskette and insert the System diskette in the diskette drive.

6 After the installation program finishes updating your System diskette, it prompts you to remove the System diskette and insert the Diagnostic Diskette.

7 The installation program then tells you whether or not the installation was successful. Follow any additional instructions that appear on the screen.

Note: If the installation was unsuccessful, your CONFIG.SYS file may still have been updated.

After successfully completing this procedure, the LEDTOUCH device driver automatically loads each time you start your system with the System diskette.

For programming information about the LEDTOUCH device driver, refer to the *IBM 7690 Clinical Workstation Technical Reference* SA12-7009 (P/N 49F6182).
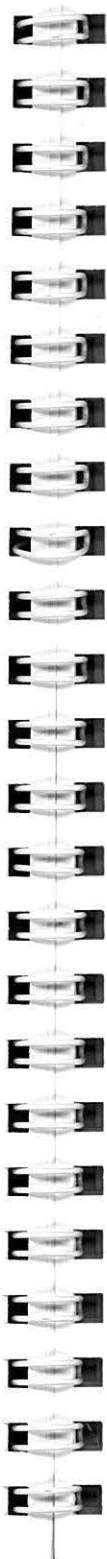
Using the Bar Code Wand and Card Reader

A bar code feature (Feature Number 0001) is available as an option and may be installed in your system. The IBM Part Number for the bar code feature is 49F6178.

The bar code feature is capable of automatically recognizing and decoding the following bar codes.

- Code 39 (3 of 9 Code)

- Interleaved 2 of 5 Code

- UPC/EAN/JAN Codes

- Standard Codabar (NW7)

- Code 128

1 The bar code wand fits into a holder (on the side of the workstation) that doubles as a bar code card reader. To use the card reader, hold the card with the bar code facing down and pass it through the slot in the card reader as shown below. Use a single, continuous motion.
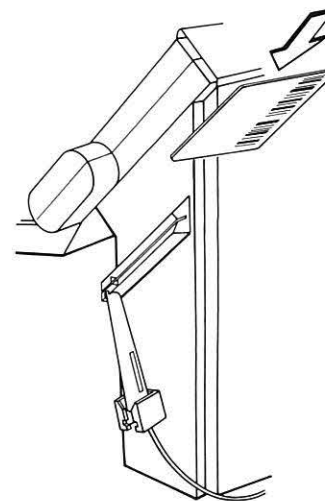
2 To read bar code that cannot be passed through the card reader, remove the wand from the holder. Then pass the tip of the wand across the middle of the bar code in a single, continuous motion. Bar code can be read in either direction—from left to right, or right to left.

For best results, hold the wand at a slight angle, as shown below, and let the tip of the wand touch the bar code medium. The bar code information is read and sent to the workstation for processing.
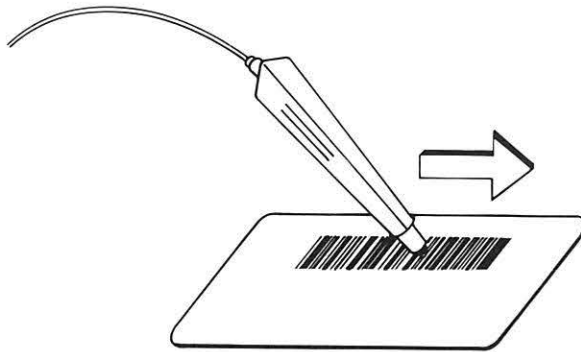
3 To test your bar code feature, refer to "Testing the Bar Code Feature" on page 3-5.

Section 5. Maintaining Your Workstation

This section contains cleaning and general maintenance procedures for your workstation.

Cleaning Solutions

The following solutions have been tested as effective cleaning agents for the Clinical Workstation.

- Isopropyl Alcohol
- Bleach, diluted solution, 10 parts water to 1 part bleach
- Wexcide[1]
- Gluterex[2]

Cleaning the Clinical Workstation

The Clinical Workstation is designed so that typical spills and mishaps will not cause internal damage. All seams are protected with gasket material, and a replaceable keyboard overlay helps protect the keyboard.

1 Turn off the workstation.

2 Ensure the cover over the brightness and contrast controls is closed.

3 Follow all precautions listed on the cleaning agent.

---

[1] Trademark of Vestal Co.

[2] Trademark of the 3M Co.

4 Using a cloth dampened with the cleaning solution, wipe the exterior surfaces of the workstation.

Note: Use only enough cleaning solution to clean the workstation. Do not use excessive amounts.

5 Using a clean, soft cloth, immediately dry off any excess moisture.

Touch Panel Preventive Maintenance

To ensure proper operation of the touch panel, you must keep the display bezel **1** clean.
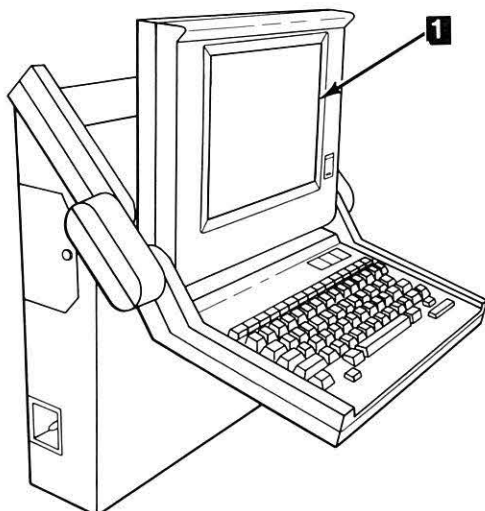
A build-up of dirt or dust on the bezel may cause failures. Once a month, you should:

1 Wipe off the bezel with a damp cloth.

2 Dust off the face of the display with a soft dry cloth.

Replacing the Keyboard Overlay

The keyboard overlay helps protect the keyboard. It is designed to be replaced easily and often to help prevent the spreading of contamination between workstation users.

To replace the overlay, perform the following:

1 Order a new keyboard overlay (**IBM Part Number 49F6120**). These can be ordered through your IBM Branch Office.

2 Remove the old overlay by peeling it off the keyboard. (*Hint:* start at any corner and work your way around the edge of the keyboard.)

3 Remove the protective backing from the adhesive on the new overlay.

4 Place the new overlay on the keyboard and press gently along the edges of the overlay.

Replacing the Battery Pack

The battery pack should be replaced every two years or whenever it fails the test described in "Testing the Battery Pack" on page 3-9. After replacing the battery pack, leave the workstation on for 24 hours to fully charge the new battery.

Warning: The Clinical Workstation must be serviced only in a non-patient environment by trained service personnel.

1 Order a new battery pack (**IBM Part Number 49F6137**). These can be ordered through your IBM Branch Office.

2 Remove the two screws and the battery door **1**.

3 Remove the battery pack **2** and disconnect the cable **3**.

4 Connect the new battery pack **2** to the battery cable **3**.

5 Slide the new battery pack into the holder and reinstall the battery door **1** using the two screws you removed.
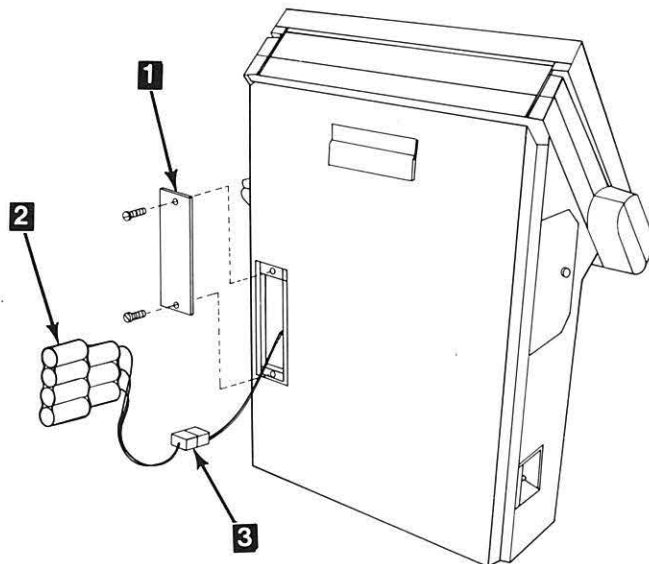
Appendix A. Additional Information

Long-Distance Move

If you saved the original shipping cartons and packing materials, use them to pack your units.

If you are using different cartons, cushion your units well to avoid any damage.

Setting up at Your New Location

When your workstation arrives at the new location, unpack it carefully.

To re-install your workstation, refer to "Installing Your Workstation."

Clinical Workstation Power Cord

For your safety, IBM provides a power cord with a grounded attachment plug to use with this IBM product. To avoid electrical shock, use the power cord provided with a properly grounded electrical outlet.

IBM power cords used in the United States are listed by Underwriter's Laboratories (UL). The Clinical Workstation power cord meets UL544 specification for use in a patient-care environment and consists of:

- electrical cable type SJT,
- an attachment plug complying with National Electrical Manufacturers Association (NEMA) 5-15P (hospital-grade plug), and
- an appliance coupler complying with International Electrotechnical Commission (IEC) Standard 320, Sheet C13.

Using the Correct Diskettes

The Clinical Workstation uses a 1.44Mb diskette drive to read data from and record data onto diskettes. These drives use 2.0Mb capacity (HD) and 1.0Mb (2HC) diskettes.

Important — When formatting diskettes, remember:

- A 2.0Mb diskette must be formatted to 1.44Mb using a 1.44Mb diskette drive. A 2.0Mb diskette formatted to 720Kb should be discarded. It will not be reliable even if reformatted to 1.44Mb.

- A 1.0Mb diskette must be formatted to 720Kb. IBM DOS defaults to a 1.44Mb format when a 1.44Mb drive is used. To format a 1.0Mb diskette in a 1.44Mb drive, refer to your DOS manual for the correct format command.

- If you are transferring diskettes between computers that have different drives, use only 1.0Mb diskettes formatted to 720Kb. A 2.0Mb diskette must not be used in a 720Kb drive.

For more information about diskettes and formatting, refer to your DOS manual.

Write-Protecting Diskettes

When a diskette is write-protected, no information can be recorded (written) on the diskette.

- To prevent writing on a diskette, slide the write-protect switch toward the outside edge of the diskette (window is open).
- To allow writing on a diskette, slide the write-protect switch toward the center of the diskette (window is closed).

Note: The Diagnostic Diskette is permanently write-protected.

Top View　　　　　　　　Bottom View

Not
Write-
Protected

Write-
Protected

Write-Protect Tab

Index