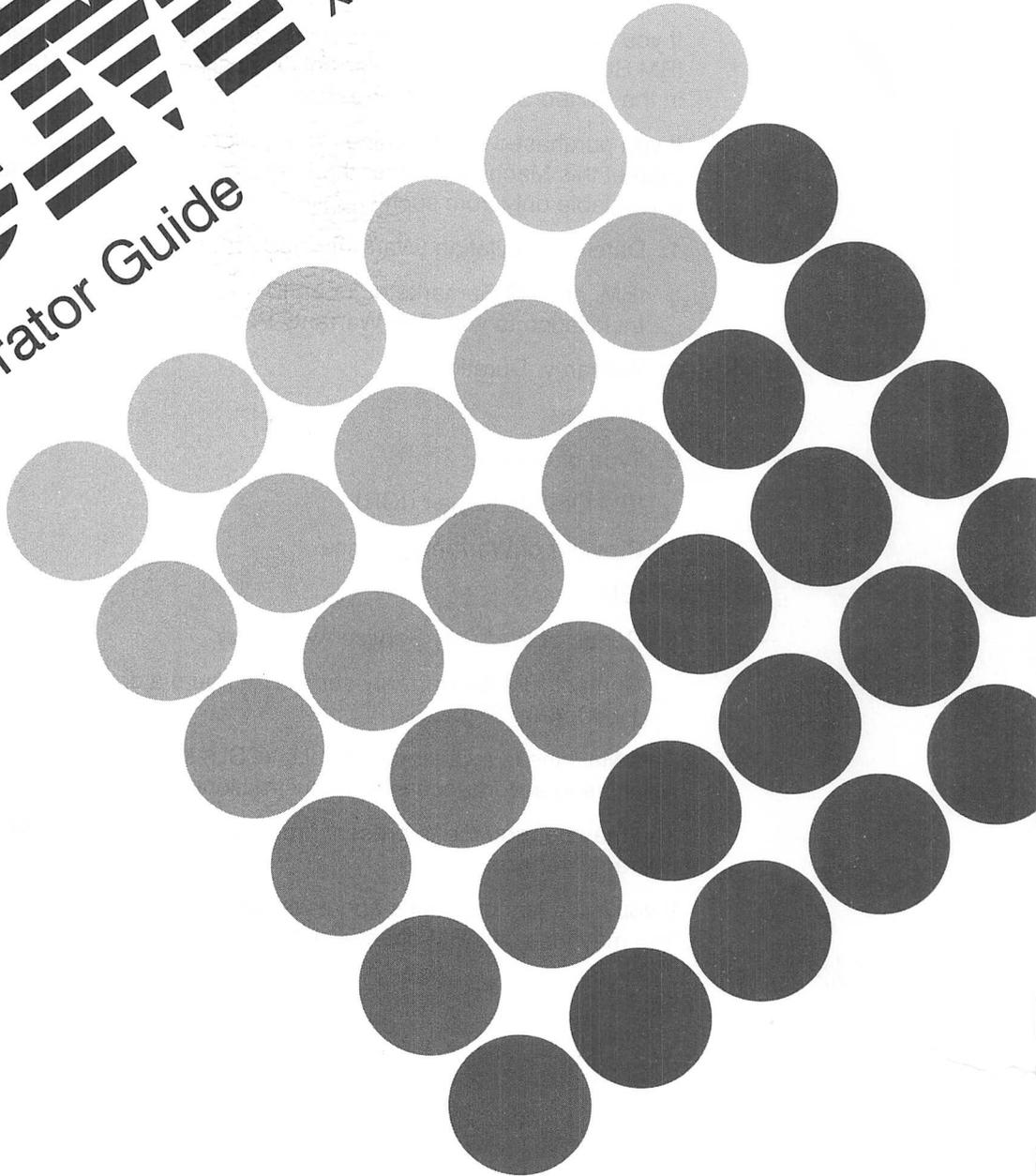


Setup and Operator Guide

Xstation 130



Warranty Exhibit to IBM Statement of Limited Warranty

IBM Xstation 130

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 service 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.

1. **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.

2. **Warranty Duration:**

One year

3. **Type of Service:**

IBM On-Site Repair (IOR)

4. **Provider of Warranty Service**

IBM

5. **Period of Warranty Service Availability**

Contact IBM for warranty service 24 hours a day, 7 days a week by calling 1-800-426-7378.

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 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 Corporation (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 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 and located 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, 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 the 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 the 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 did not involve the removal of parts which became IBM's property, such feature addition or model upgrade remains your property. 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 expense associated with warranty service except when the site at which the Machine is located is inaccessible to the IBM service representative by both private automobile 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 expense, 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.

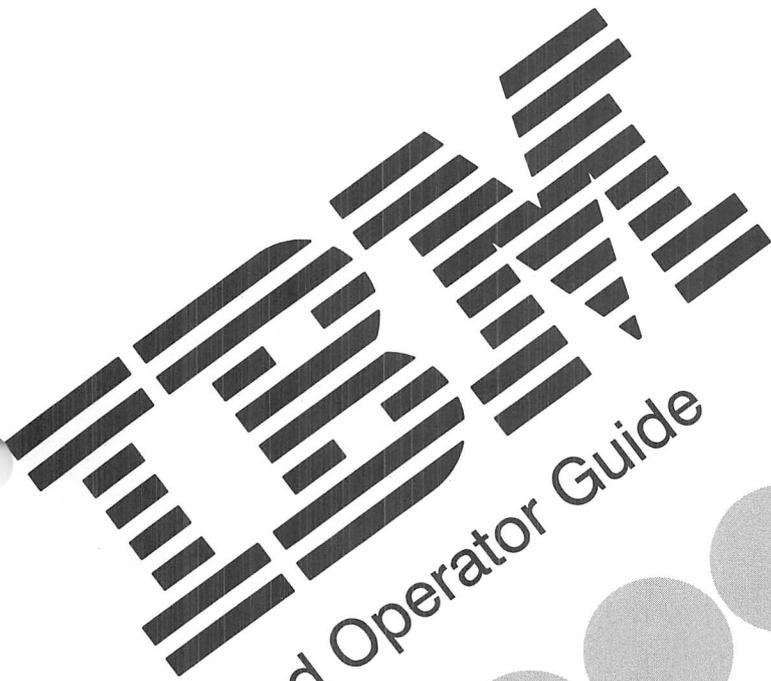
If you transfer this Machine to another user, IBM will provide the availability of warranty service under this Statement to that user. Such warranty service will be available for the remainder of the Warranty Period. Therefore, you should transfer the proof of purchase and this Statement to that user.

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

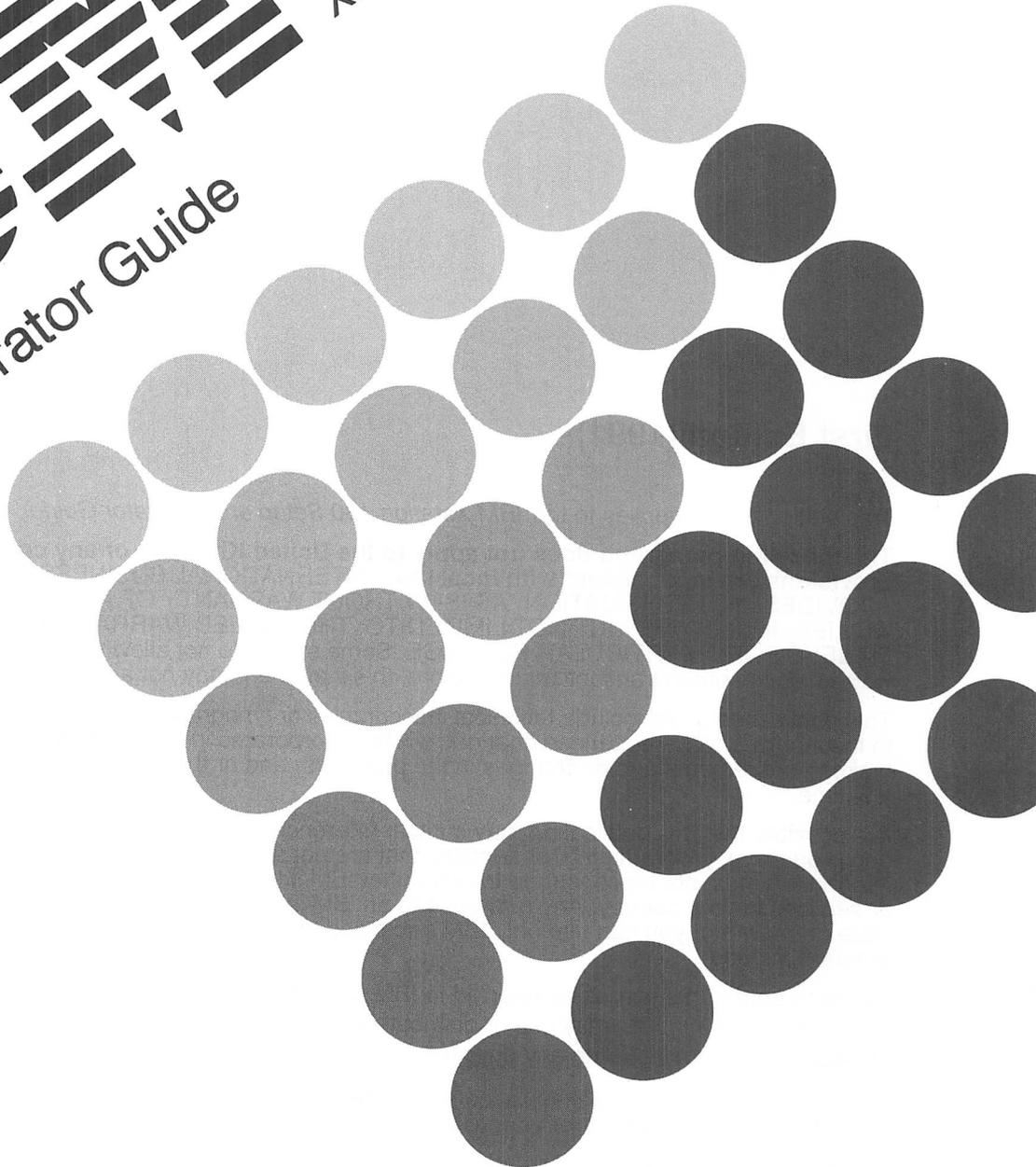
Your sole remedy under this Statement of Limited Warranty is set forth in this Section. For any claim concerning performance or nonperformance by IBM, an IBM Authorized Dealer, or an IBM Authorized Industry Remarketer for this Machine under this Statement of Limited Warranty, you may recover actual damages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

IBM's liability for actual damages from any cause whatsoever will be limited to 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 for which IBM is legally liable. 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.



Xstation 130

Setup and Operator Guide



First Edition (1991)

This edition notice applies to the *IBM Xstation 130 Setup and Operator Guide*.

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Communications Statements

The following statement applies to this IBM product. The statement for other IBM products intended for use with this product appears in their accompanying manuals.

Federal Communications Commission (FCC) Statement

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

United Kingdom Telecommunications Requirements

This apparatus is approved under approval number NS/G/1234/J/100003 for indirect connection to public telecommunication systems in the United Kingdom.

International Electrotechnical Commission (IEC) Statement

This product has been designed and built to comply with IEC Standard 950.

電波障害自主規制 届出装置の記述

この装置は、第一種情報装置（商工業地域において使用されるべき情報装置）で商工業地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。

従って、住宅地域またはその隣接した地域で使用すると、ラジオ、テレビジョン受信機等に受信障害を与えることがあります。

取扱説明書に従って正しい取り扱いをしてください。

VCCI Statement

The following is a summary of the VCCI Japanese statement in the preceding box.

This equipment is Type 1 Data Processing Equipment and is intended for use in commercial and industrial area. When used in residential area, or areas of proximity, radio and TV reception may be subject to radio interference. VCCI-1.

Avis de conformité aux normes du ministère des Communications du Canada

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

Canadian Department of Communications Compliance Statement

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

Radio Protection for Germany

Instructions to User: Properly shielded and grounded cables and connectors must be used for connection to peripherals in order to meet German emission limits.

Proper cables are available from IBM authorized dealers. Shielded, grounded cables with in-line filters are included with certain IBM peripherals and features. These cables should be used to insure that the IBM Xstation 130 will comply with the German limits.

When attaching peripherals to the IBM Xstation 130 system parallel printer port, the IBM cable P/N 1525612 with the in-line filter should be used for compliance to the German requirements.

Order Information: For new orders, contact an IBM authorized sales representative. For replacement orders, contact an IBM authorized service representative.

IBM Power Cables

To avoid electrical shock, IBM provides a power cable with a grounded attachment plug. Use only properly grounded outlets.

IBM power cables used in the United States and Canada are listed by Underwriter's Laboratories (UL) and certified by the Canadian Standards Association (CSA). These power cords have the following characteristics:

- Electrical cables, Type SVT or SJT
- Attachment plugs complying with National Electrical Manufacturers Association (NEMA) 5–15P, which states:

“For 115 V operation, use a UL listed cable set consisting of a minimum 18 American Wire Gauge (AWG), Type SVT or SJT three-conductor cord a maximum of 15 feet in length and a parallel blade, grounding type attachment plug rated at 15 A, 125 V.”

“For 230 V operation in the United States use a UL listed cable set consisting of a minimum 18 AWG, Type SVT or SJT three-conductor cable a maximum of 15 feet in length, and a tandem blade, grounding type attachment plug rated at 15 A, 250 V.”

- Appliance couplers complying with International Electrotechnical Commission (IEC) Standard 320, Sheet C13.

IBM power cables used in other countries have the following characteristics:

- Electrical cables, Type HD21
- Attachment plugs approved by the appropriate testing organization for the specific countries where they are used. NEMA 5–15P states:

“For units set at 230 V (outside of U.S.): use a cable set consisting of a minimum 18 AWG cable and grounding type attachment plug rated 15 A, 250 V. The cable set should have the appropriate safety approvals for the country in which the equipment will be installed and should be marked HAR”.

The following power cables are available :

Part Number	Country
62X0663	U.S.
13F9960	Canada, Japan, South Korea, Costa Rica, Uruguay
13F9979	Germany, Sweden, Austria, Norway, Belgium
13F9997	Denmark
14F0014	South Africa, Pakistan, Sri Lanka
14F0033	U.K., Hong Kong, Brunei
14F0051	Switzerland
14F0069	Italy, Chile
14F0087	Israel
13F9940	Australia, New Zealand, Argentina
1838574	Thailand

Safety Notices

Note: For a translation of the following safety notices, refer to the *IBM RISC System/6000 Translated Safety Information*, Form Number SA23-2652.

A *danger* notice indicates the presence of a hazard that has the potential of causing death or serious personal injury. *Danger* notices appear on the following pages:

vii
1-5
1-21
2-19.

A *caution* notice indicates the presence of a hazard that has the potential of causing moderate or minor personal injury. *Caution* notices appear on the following pages:

vii
1-21
2-19.

A *warning* notice indicates an action that could cause damage to a program, device, system, or data.

Electrical Safety

Observe the following safety instructions any time you are connecting or disconnecting devices attached to the workstation.

DANGER

AN ELECTRICAL OUTLET THAT IS NOT CORRECTLY WIRED COULD PLACE HAZARDOUS VOLTAGE ON METAL PARTS OF THE SYSTEM OR THE DEVICES THAT ATTACH TO THE SYSTEM. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO ENSURE THAT THE OUTLET IS CORRECTLY WIRED AND GROUNDED TO PREVENT AN ELECTRICAL SHOCK.

BEFORE INSTALLING OR REMOVING SIGNAL CABLES, ENSURE THAT THE POWER CABLES FOR THE SYSTEM UNIT AND ALL ATTACHED DEVICES ARE UNPLUGGED.

WHEN ADDING OR REMOVING ANY ADDITIONAL DEVICES TO OR FROM THE SYSTEM, ENSURE THAT THE POWER CABLES FOR THOSE DEVICES ARE UNPLUGGED BEFORE THE SIGNAL CABLES ARE CONNECTED. IF POSSIBLE, DISCONNECT ALL POWER CABLES FROM THE EXISTING SYSTEM BEFORE YOU ADD A DEVICE.

USE ONE HAND, WHEN POSSIBLE, TO CONNECT OR DISCONNECT SIGNAL CABLES TO PREVENT A POSSIBLE SHOCK FROM TOUCHING TWO SURFACES WITH DIFFERENT ELECTRICAL POTENTIALS.

DURING AN ELECTRICAL STORM, DO NOT CONNECT CABLES FOR DISPLAY STATIONS, PRINTERS, TELEPHONES, OR STATION PROTECTORS FOR COMMUNICATIONS LINES.

CAUTION:

This product is equipped with a 3-wire power cable and plug for the user's safety. Use this power cable in conjunction with a properly grounded electrical outlet to avoid electrical shock.

About This Book

How to Use This Book

This *Setup and Operator Guide* is written for the IBM Xstation 130 user, and it contains information and procedures to install, test, and use the workstation.

Related Publications

The *IBM Xstation 130 Service Guide*, Form Number SA23–2636, is written primarily for the trained service technician. It provides detailed Maintenance Analysis Procedures (MAPs) and locations as well as removal and replacement procedures and part numbers.

The *IBM Xstation 130 Service Guide* is also available as part of the IBM Xstation 130 Maintenance Package.

The *IBM Xstation 130 Technical Reference*, Form Number SA23–2648 provides detailed technical information on microcode and hardware.

The *System Management Guide for the IBM AIX Xstation Manager/6000*, Form Number SC23–2264, provides installation, configuration, and maintenance information of Xwindows on an Xstation and a host computer, using the Xstation manager program.

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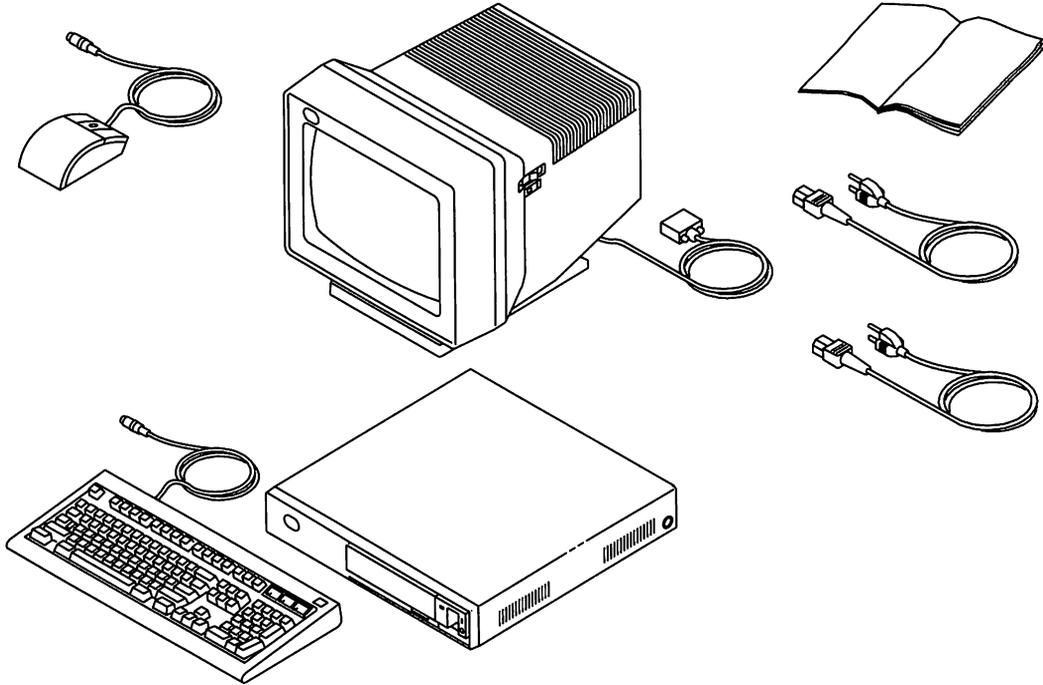
Chapter 1. Setup

Chapter Contents

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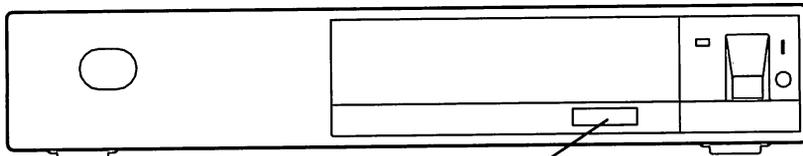
Step 1. Inventory

1. Unpack the Xstation system unit, the display, keyboard, and any other devices. Be sure to check for smaller items such as cables, optional adapters, or memory cards.



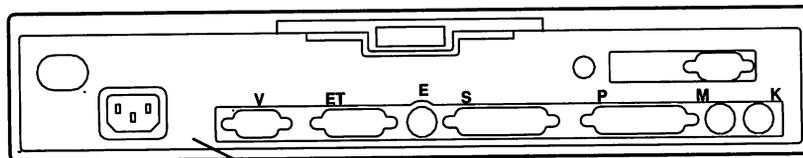
2. Record and retain the following information:

IBM Product Name	<u>7010 Xstation 130</u>
IBM Model Number	_____
IBM Serial Number	_____



Front View

Serial Number

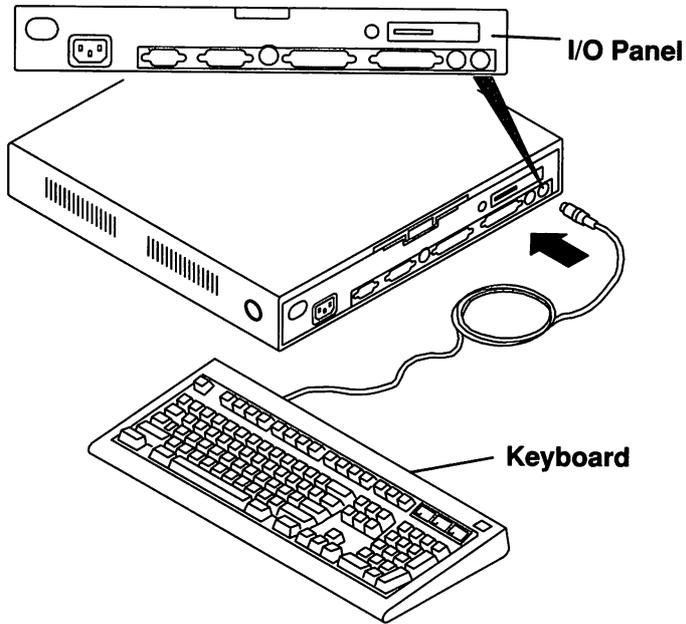


Rear View

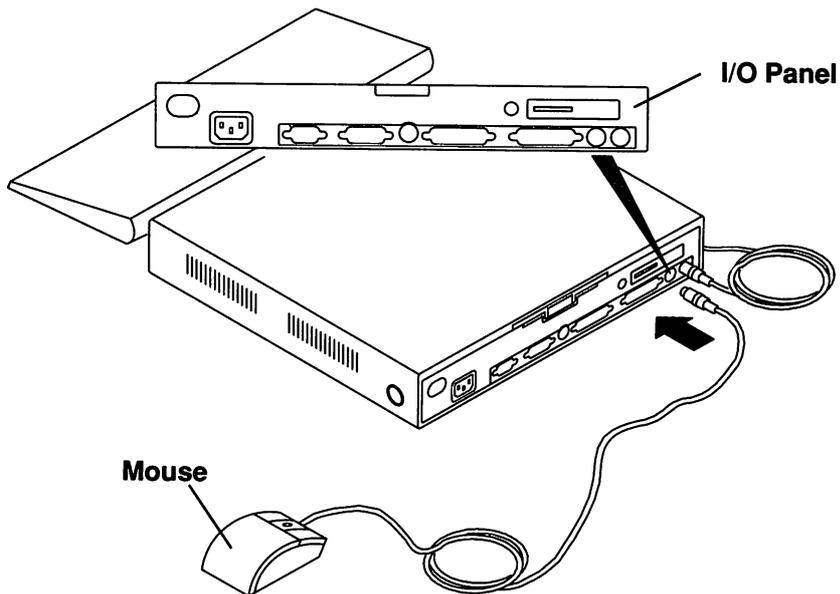
Information Plate

Step 2. Setup the Xstation

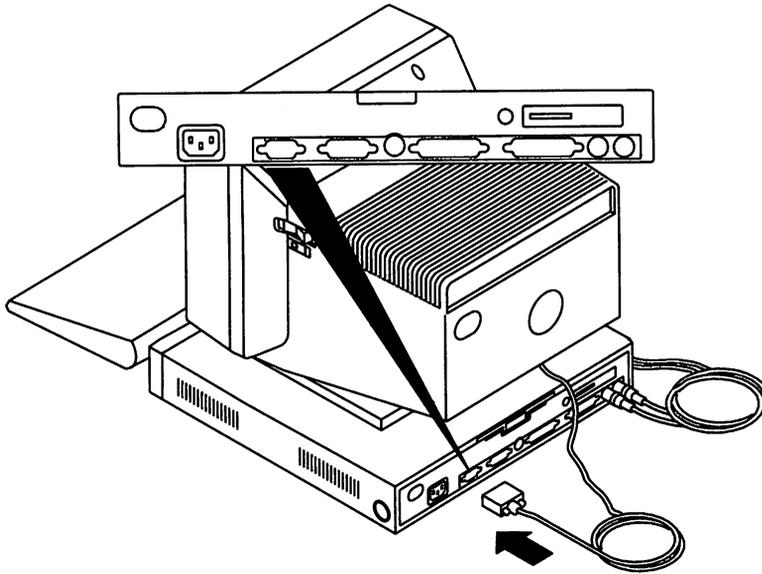
1. Plug the keyboard cable into the keyboard and the other end (flat side up) into the Xstation I/O panel as shown.



2. Plug the mouse cable (arrow up) into the Xstation I/O panel as shown.



3. Place the display in close proximity to the Xstation system unit and plug the display cable into the Xstation I/O panel as shown. Some displays may require special connections, so be sure to consult the display's setup manual.



4. If your Xstation has had all options installed prior to delivery, continue to "Step 14. Connect the Cables" on page 1-21.
5. To install an option or reconfigure the Xstation, continue to "Step 3. Installing Options and Reconfiguring" on page 1-5.

Step 3. Installing Options and Reconfiguring

DANGER

AN ELECTRICAL OUTLET THAT IS NOT CORRECTLY WIRED COULD PLACE HAZARDOUS VOLTAGE ON METAL PARTS OF THE SYSTEM OR THE DEVICES THAT ATTACH TO THE SYSTEM. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO ENSURE THAT THE OUTLET IS CORRECTLY WIRED AND GROUNDED TO PREVENT AN ELECTRICAL SHOCK.

BEFORE INSTALLING OR REMOVING SIGNAL CABLES, ENSURE THAT THE POWER CABLES FOR THE SYSTEM UNIT AND ALL ATTACHED DEVICES ARE UNPLUGGED.

WHEN ADDING OR REMOVING ANY ADDITIONAL DEVICES TO OR FROM THE SYSTEM, ENSURE THAT THE POWER CABLES FOR THOSE DEVICES ARE UNPLUGGED BEFORE THE SIGNAL CABLES ARE CONNECTED. IF POSSIBLE, DISCONNECT ALL POWER CABLES FROM THE EXISTING SYSTEM BEFORE YOU ADD A DEVICE.

USE ONE HAND, WHEN POSSIBLE, TO CONNECT OR DISCONNECT SIGNAL CABLES TO PREVENT A POSSIBLE SHOCK FROM TOUCHING TWO SURFACES WITH DIFFERENT ELECTRICAL POTENTIALS.

DURING AN ELECTRICAL STORM, DO NOT CONNECT CABLES FOR DISPLAY STATIONS, PRINTERS, TELEPHONES, OR STATION PROTECTORS FOR COMMUNICATIONS LINES.

Do you want to perform any of the following tasks?

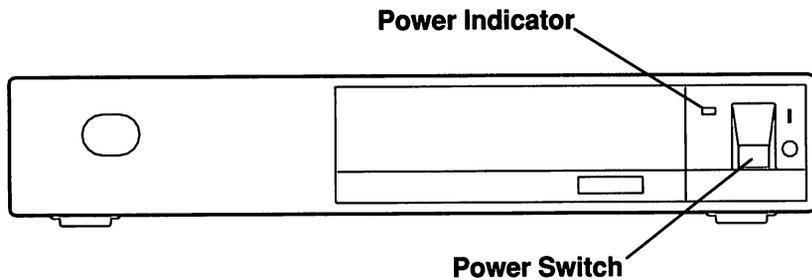
- Install a Token-Ring or Dual Async Adapter
- Install Video Memory Upgrade Kits
- Install Display Processor Memory Expansion Kits
- Configure Ethernet
- Configure System Jumpers
- Install an Optional 30MB Disk Drive

No Go to "Step 12. Install an Optional Serial Port Fan Out Cable" on page 1-19.

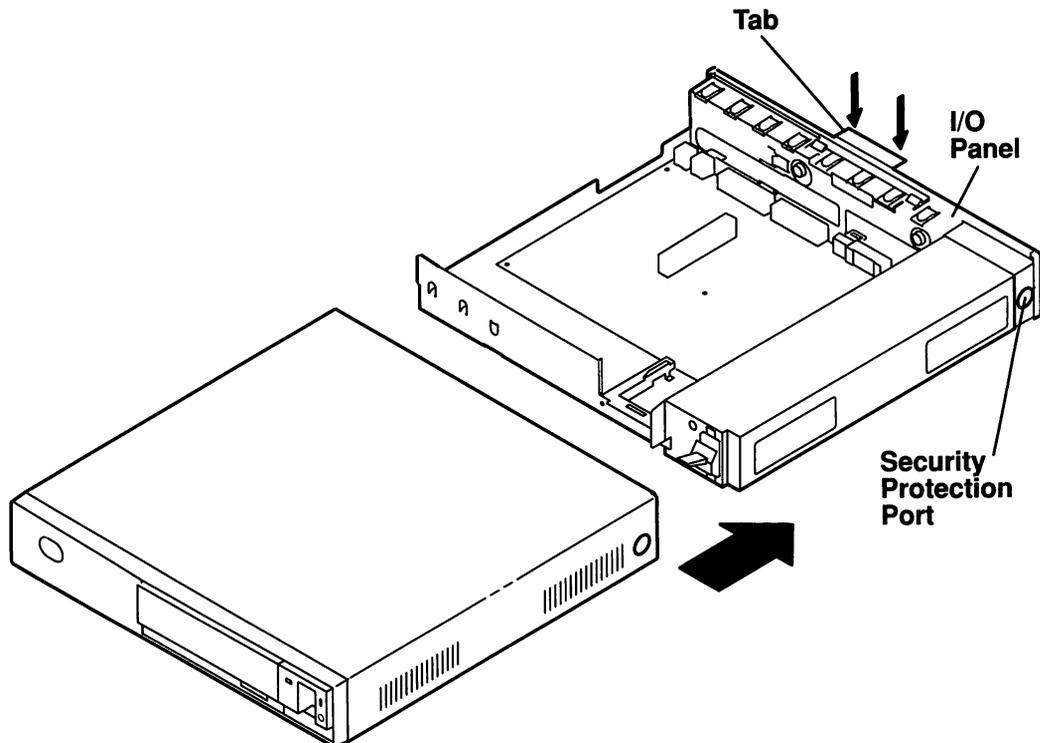
Yes Go to "Step 4. Remove the Chassis Assembly" on page 1-6.

Step 4. Remove the Chassis Assembly

1. Unlock and remove the customer security protection device, if installed.
2. Set the Xstation system unit, display, and attached device power switches to Off (O).



3. Unplug the system unit power cable, display power cable, and attached device power cables from electrical power outlets.
4. Press down on each end of the plastic tab that extends from the upper edge of the rear cover. When the latches disengage, pull on the plastic tab, and slide out the chassis and power supply as a single unit. Remove any cable attached to the I/O panel that restricts movement as the chassis assembly is extended.
5. With one hand, touch any metal surface of the chassis to minimize static electrical charges before handling any internal component.



6. Go to "Step 5. Install a Token-Ring or Dual Async Adapter" on page 1-7.

Step 5. Install a Token-Ring or Dual Async Adapter

The Xstation supports the following optional adapters:

- IBM Token-Ring Network 16/4 Adapter/A
- IBM Personal System/2 Dual Async Adapter/A

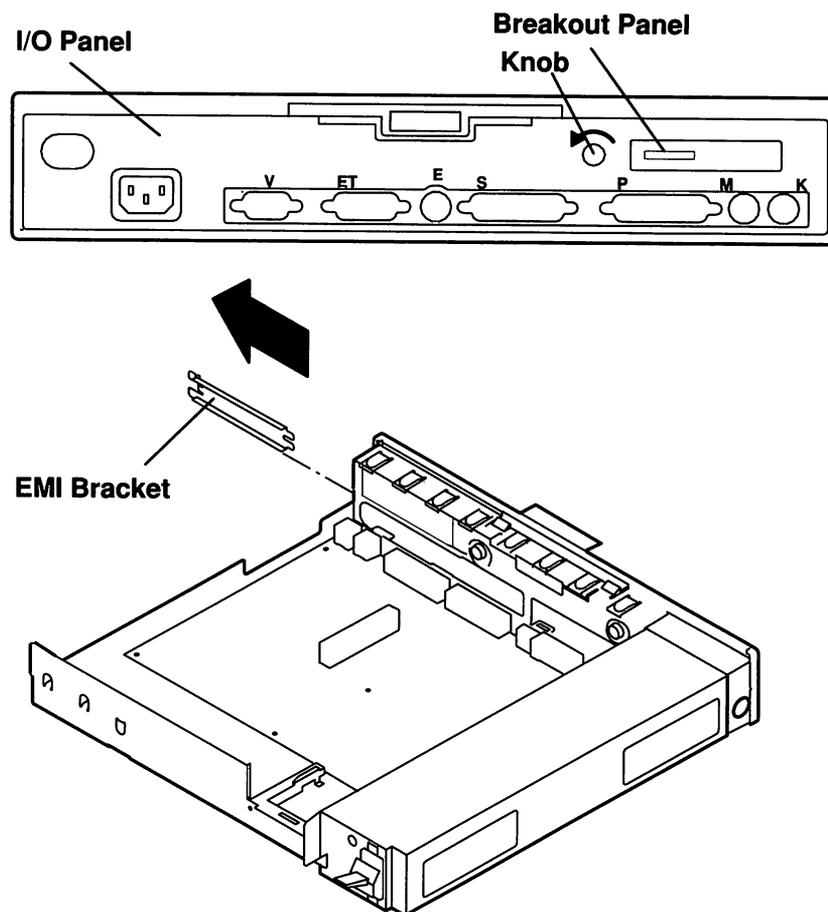
One of the optional adapters may be plugged into the system board through the riser card assembly.

Do you want to install a Token-Ring or a Dual Async Adapter?

No Go to "Step 6. Install Video Memory Upgrade Kits" on page 1-10.

Yes After completing "Step 4. Remove the Chassis Assembly" on page 1-6, perform the following steps:

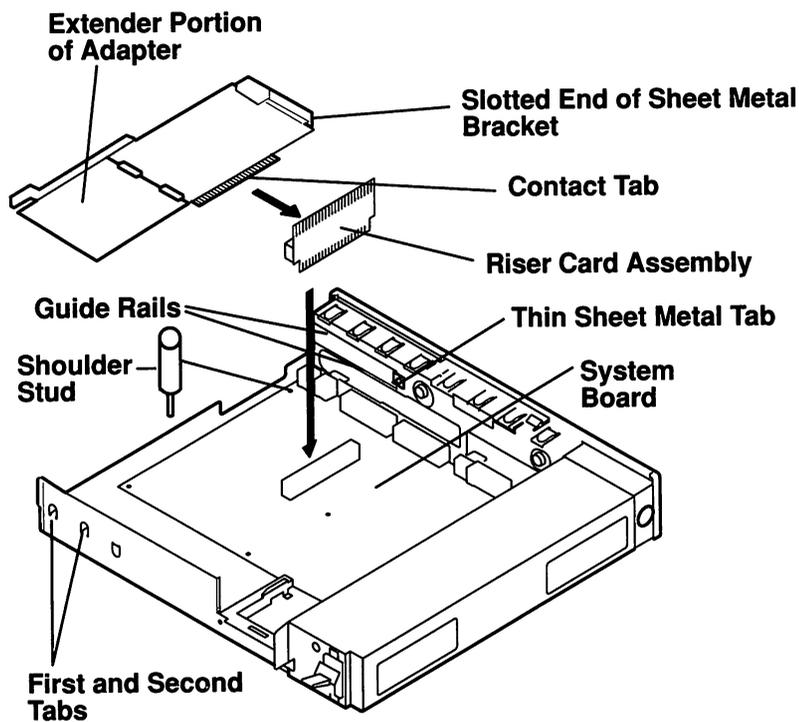
1. Loosen the knob which anchors the EMI bracket to the I/O panel, and remove the bracket.



2. Use a screwdriver to pry out the breakout panel. Discard the breakout panel.

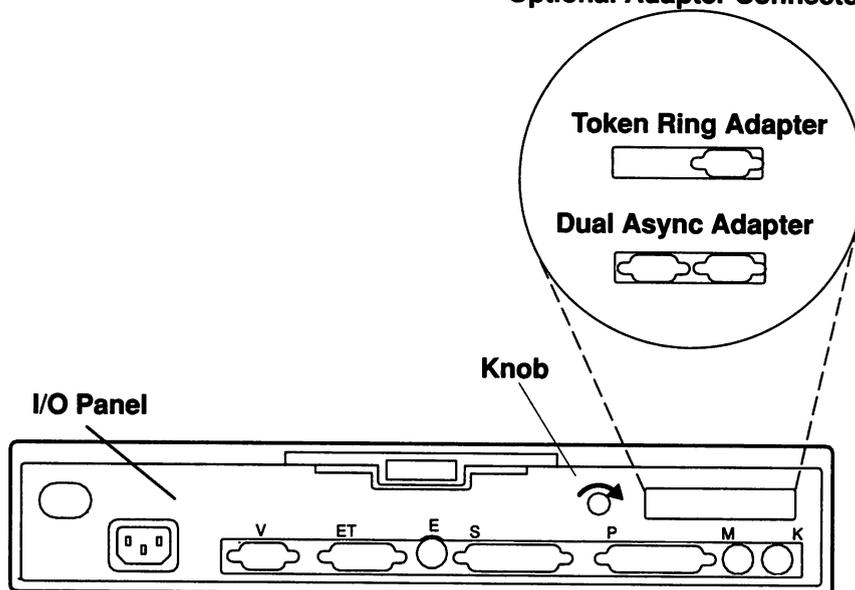
CONTINUE

3. Remove the shoulder stud from the system board.
4. Insert the adapter so that the sheet metal bracket is seated between the chassis guide rails.
5. Place the slotted end of the adapter sheet metal bracket behind the thin sheet metal tab receptacle on the chassis.
6. The extender portion of the adapter should be resting on the first and second tabs on the chassis front.
7. Grasp the long edge of the adapter (opposite the contact tab) with your fingers and, with your thumb on the back of the riser card assembly, firmly squeeze the adapter into the connector.
8. The contact tab of the adapter should be approximately three millimeters (one-eighth of an inch) from entering the riser connector.



CONTINUE

Optional Adapter Connector



9. Tighten the knob on the I/O panel.

10. Reinstall the shoulder stud. The stud acts as a retainer for the adapter.

Installation of a Network Adapter will create a network address on the LAN Statistics Screen, an example of which can be seen in "Starting the Xstation" on page 2-2. Inform your network administrator of the network address.

11. Go to "Step 6. Install Video Memory Upgrade Kits" on page 1-10.

Step 6. Install Video Memory Upgrade Kits

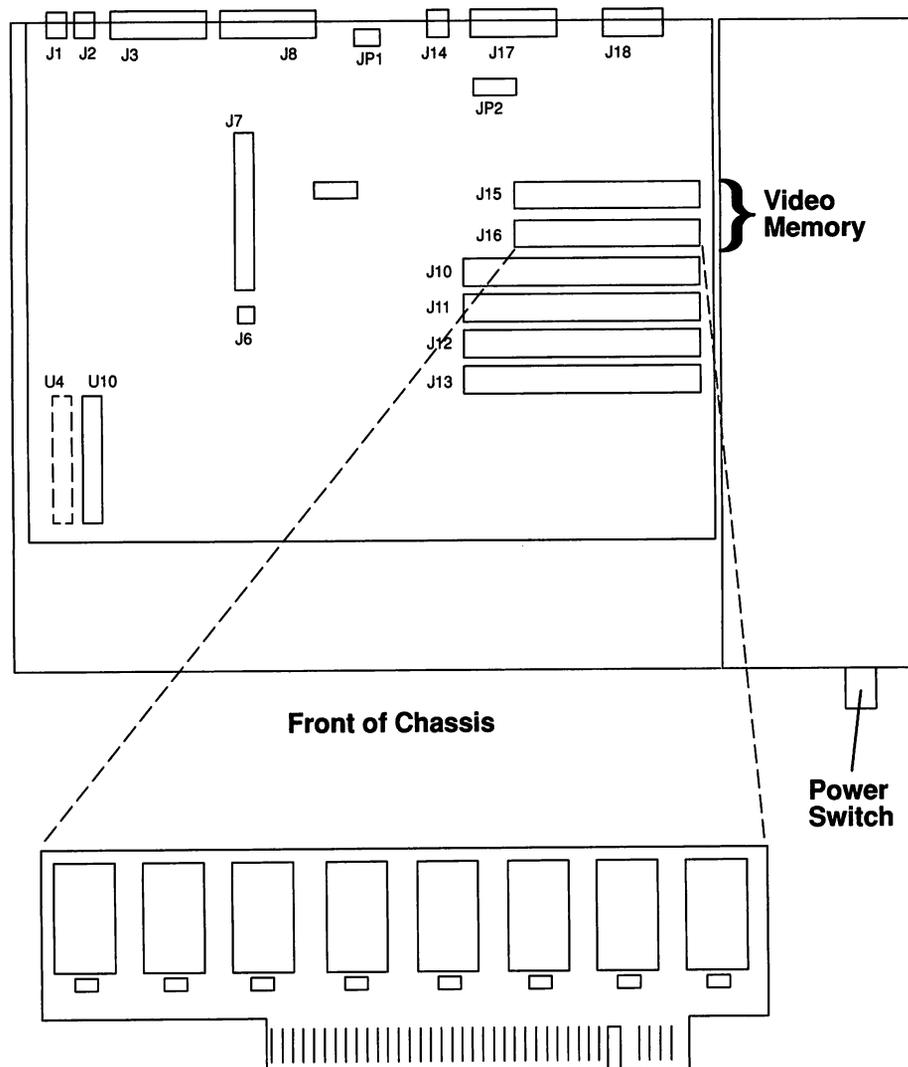
Video memory up to 2 megabytes is supported.

Do you want to install a Video Memory Upgrade Kit?

No Go to "Step 7. Install Display Processor Memory Expansion Kits" on page 1-11.

Yes After completing "Step 4. Remove the Chassis Assembly" on page 1-6, perform the following steps:

1. Turn the chassis assembly so that the power switch faces you.
2. To increase the video memory, insert the memory card into the unused video memory socket (J15 or J16).



3. Go to "Step 7. Install Display Processor Memory Expansion Kits" on page 1-11.

Step 7. Install Display Processor Memory Expansion Kits

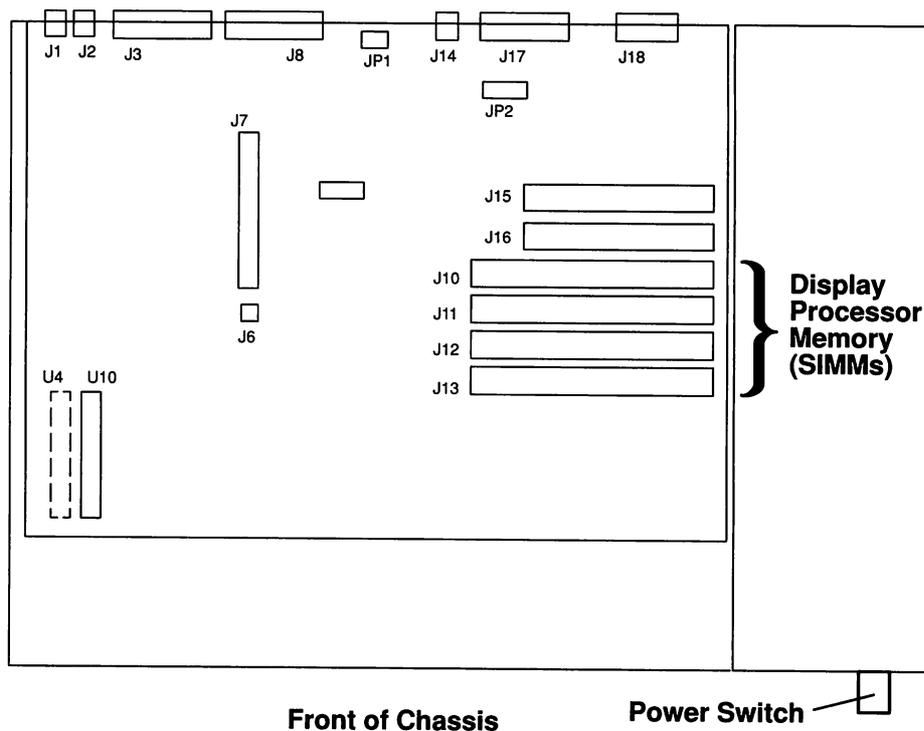
Display processor memory may be increased to 16 megabytes by installing display processor memory expansion kits. The kit contains Single Inline Memory Modules (SIMMs) which are inserted in sockets J10 through J13. Each kit contains one SIMM.

Do you want to install Display Processor Memory Expansion Kits?

No Go to "Step 8. Configure Ethernet " on page 1-14.

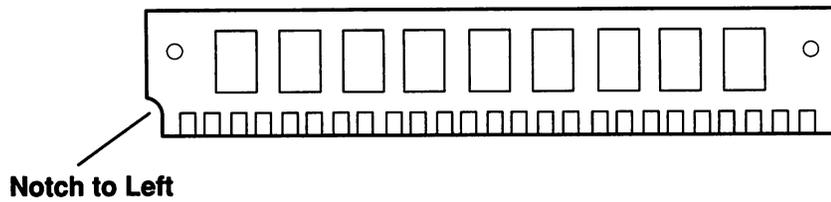
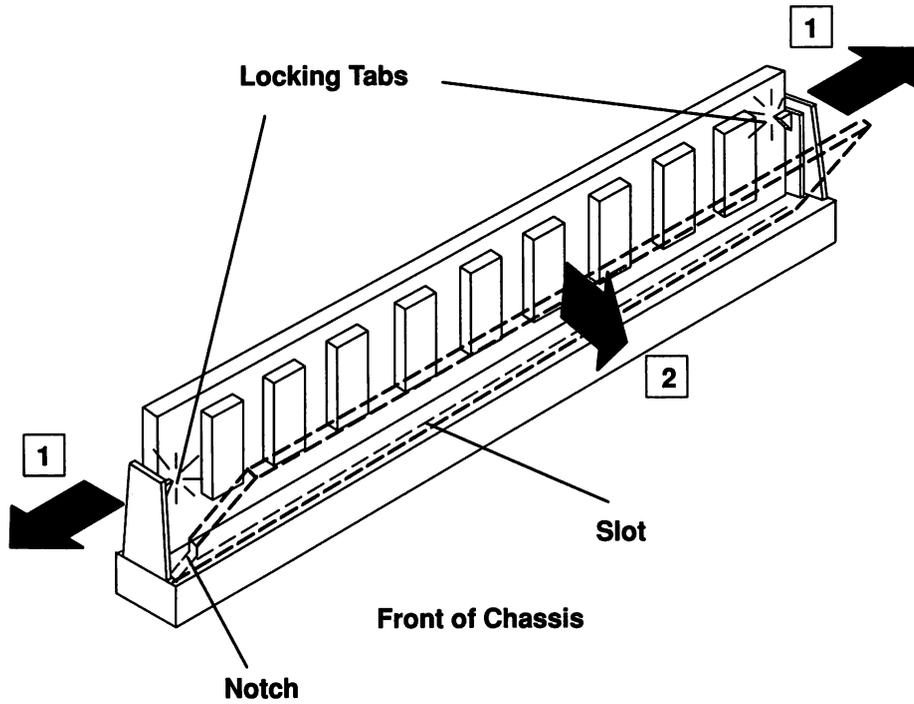
Yes After completing "Step 4. Remove the Chassis Assembly" on page 1-6, perform the following steps:

1. Turn the chassis so that the power switch faces you.
2. If installed, remove the disk drive cable.
3. One, two, and four megabyte SIMMs may be installed in any combination in sockets J10 through J13.



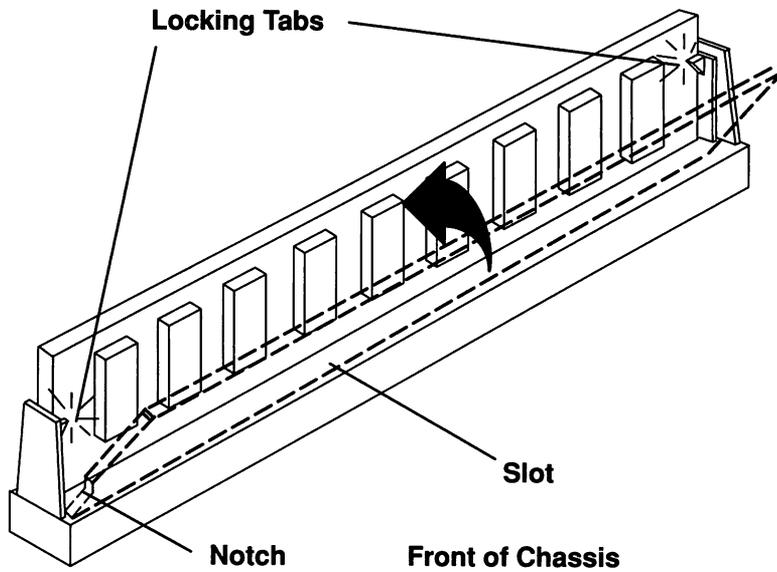
CONTINUE

4. If necessary to remove any previously installed SIMMs, perform the following steps:
 - a. Press the locking tabs outward to release the SIMM.
 - b. While pressing the locking tabs outward, tilt the SIMM toward you, and pull it out of the socket.



CONTINUE

5. Insert the SIMM at an angle in its keyed socket, and push the SIMM back to a vertical position.
6. When the SIMM is at the proper upright position, the locking tabs will snap into place in front of the SIMM.



7. Install the disk drive cable if previously removed.
8. Go to "Step 8. Configure Ethernet " on page 1-14.

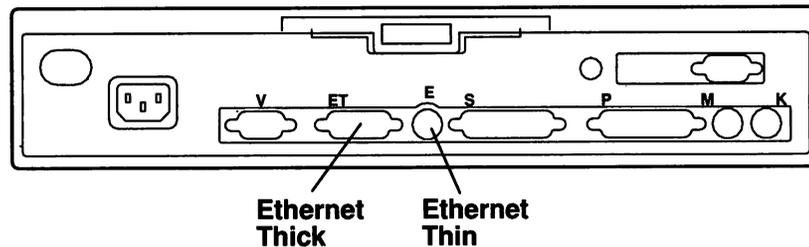
Step 8. Configure Ethernet

The Xstation contains two Ethernet versions which differ by the external cable connector. The factory-set, "thin" version uses a co-axial connector; the alternate, "thick" version uses a 15-pin D Shell connector. If you elect to use the alternate version, you must change the jumpers (JP2) on the system board.

Do you want to configure Ethernet?

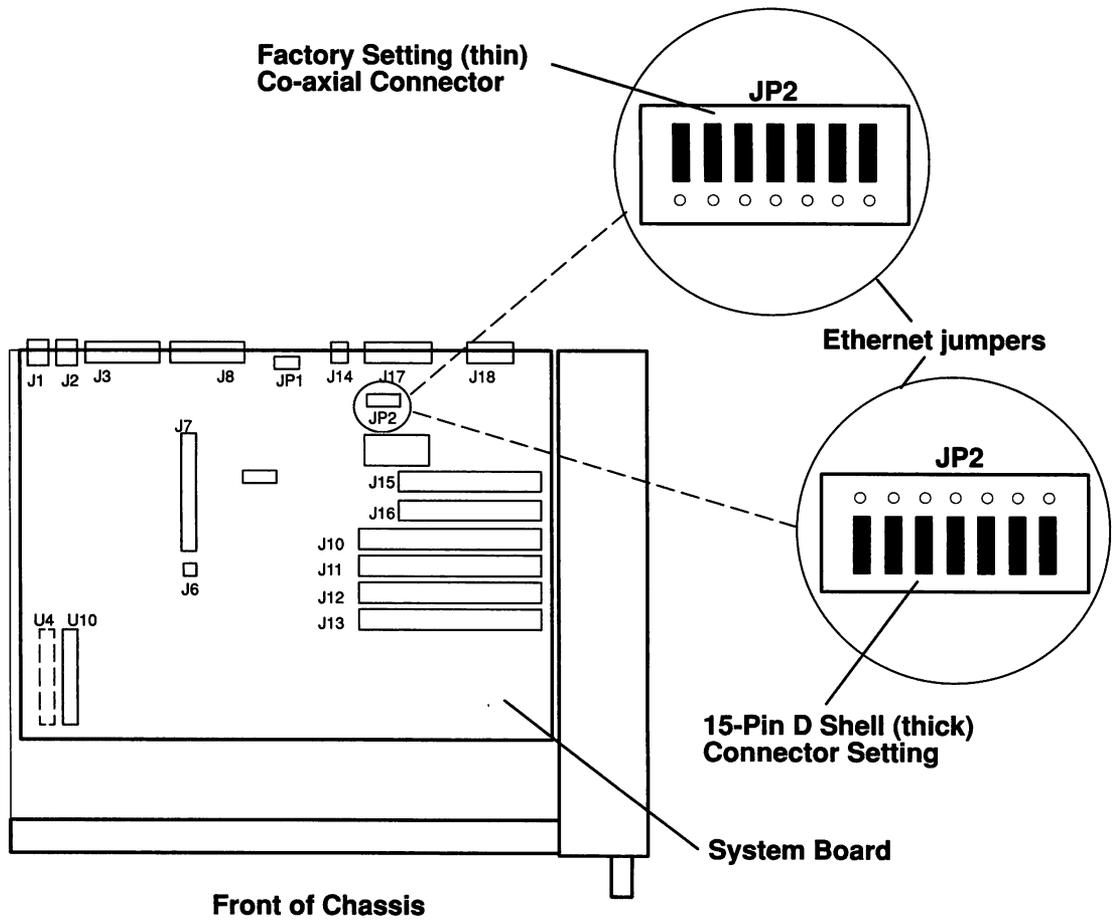
No Go to "Step 9. Configure System Jumpers" on page 1-16.

Yes After completing "Step 4. Remove the Chassis Assembly" on page 1-6, perform the following steps:



1. Turn the chassis so that the power switch faces you.
2. Locate the Ethernet jumpers (JP2) on the system board.
3. Change all of the individual jumpers (7) to either the thin or thick setting as shown:

CONTINUE



4. Go to "Step 9. Configure System Jumpers" on page 1-16.

Step 9. Configure System Jumpers

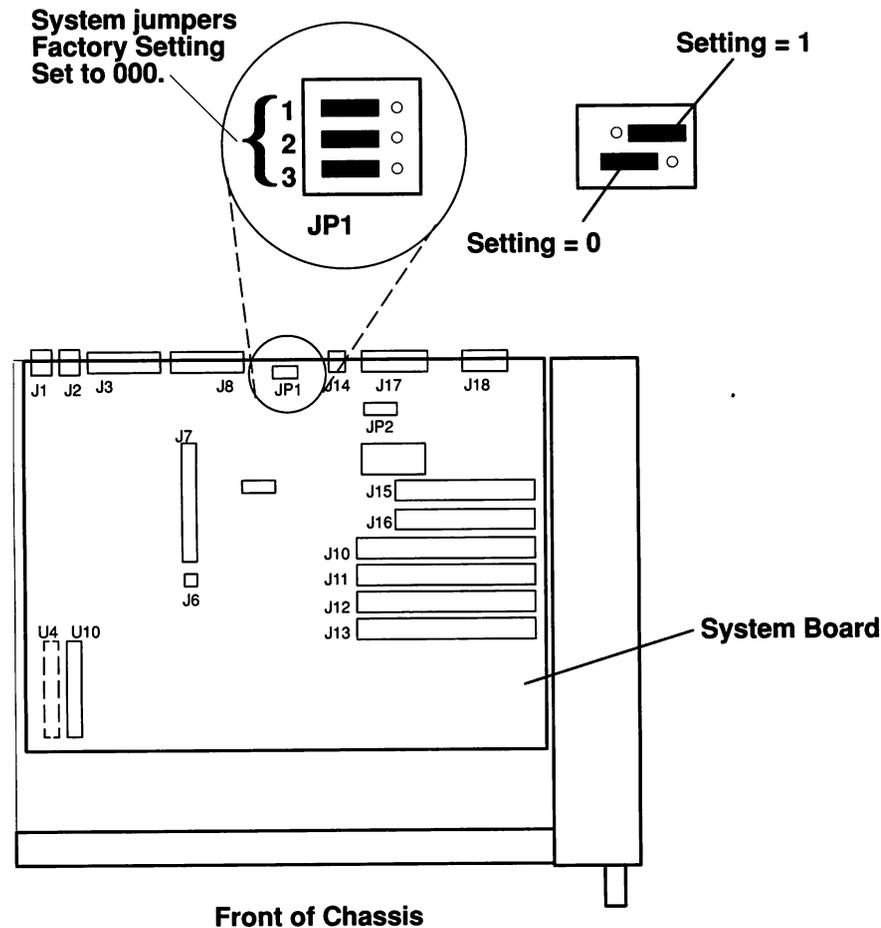
The system jumpers are reserved for special applications and may adversely affect operation. Assure the jumpers on JP1 are set to the position identified by the factory setting (000) unless otherwise instructed.

Do you want to configure system jumpers?

No Go to "Step 10. Install an Optional Disk Drive" on page 1-17.

Yes After completing "Step 4. Remove the Chassis Assembly" on page 1-6, perform the following steps:

1. Turn the chassis so that the power switch faces you.
2. Locate the system jumper (JP1) on the system board.
3. Change the jumper settings according to your instructions.



4. Go to "Step 10. Install an Optional Disk Drive" on page 1-17.

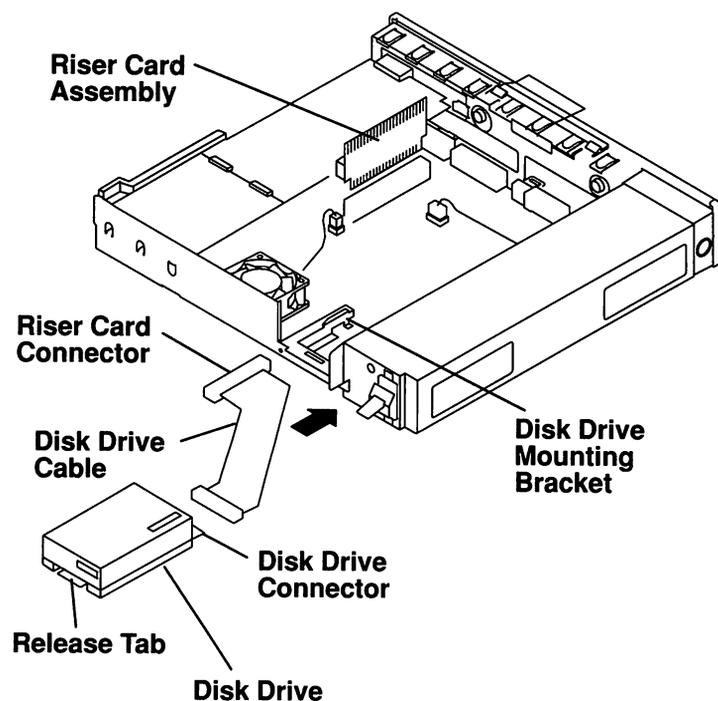
Step 10. Install an Optional Disk Drive

Do you want to install an optional disk drive?

No Go to "Step 11. Replace the Chassis Assembly" on page 1-18.

Yes After completing "Step 4. Remove the Chassis Assembly" on page 1-6, perform the following steps:

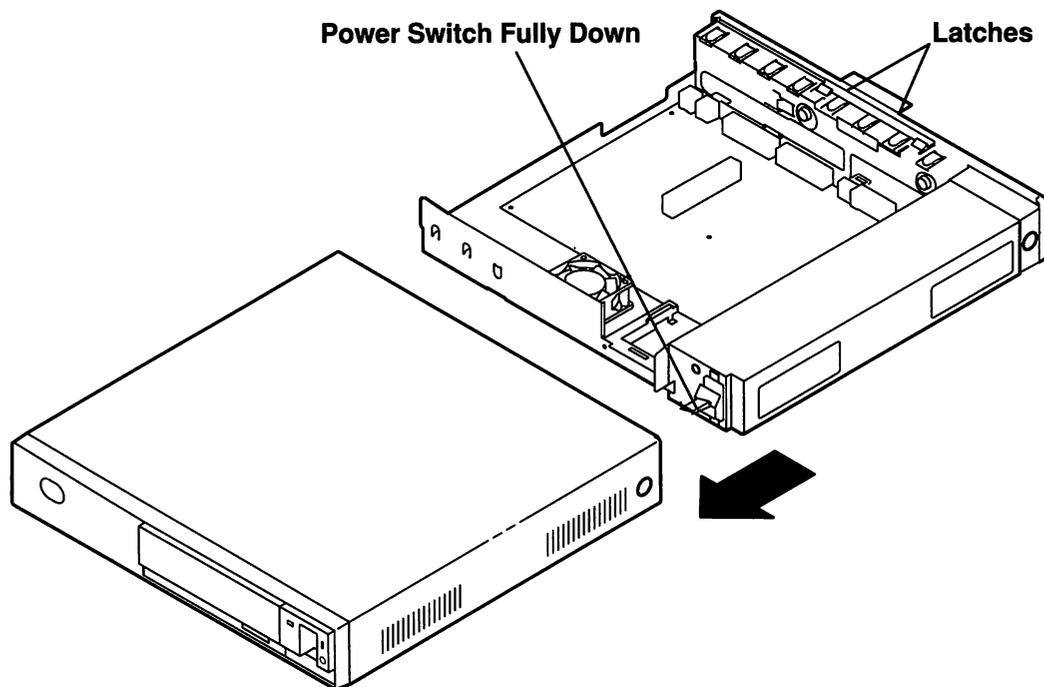
1. Turn the chassis so that the power switch faces you.
2. To install the optional disk drive:
 - a. Place the disk drive on its bracket and slide it toward the back of the Xstation until the release tab snaps into place.
 - b. Connect one end of the disk drive cable to the connector located on the back of the disk drive.
 - c. Connect the other end of the disk drive cable to the top of the riser card assembly.



3. Go to "Step 11. Replace the Chassis Assembly" on page 1-18.

Step 11. Replace the Chassis Assembly

1. Ensure that the power switch is in the Off position (down). The chassis will not relocate if the power switch is On (up).
2. Slide the chassis assembly back into the cover until the latches click.



3. Go to "Step 12. Install an Optional Serial Port Fan Out Cable" on page 1-19.

Step 12. Install an Optional Serial Port Fan Out Cable

The Xstation provides access to two serial ports from one 25 pin D-shell connector. The first serial port is accessible by direct attachment to the 25 pin D-shell connector (S) on the I/O panel of the Xstation.

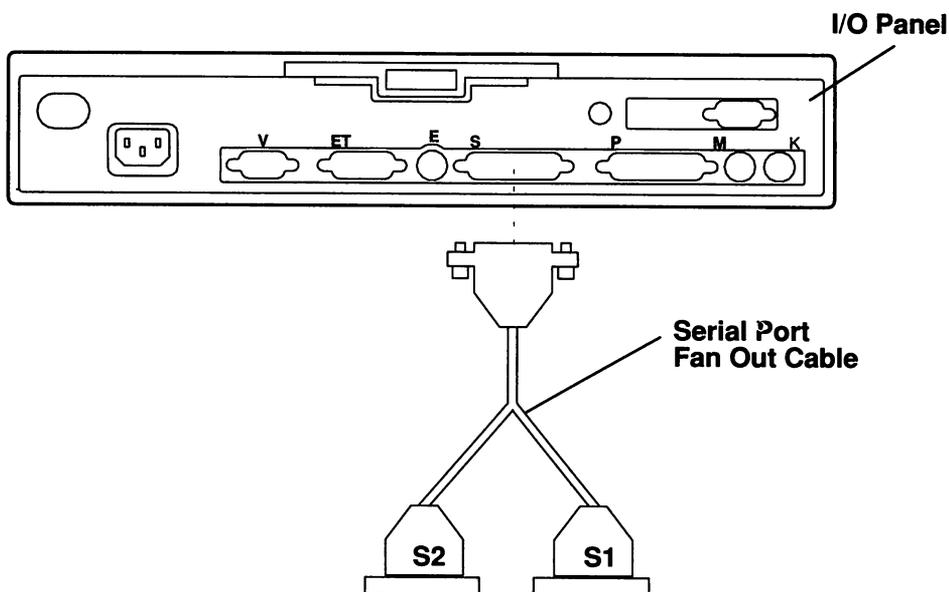
Access to the second serial port requires the installation of the optional Serial Port Fan Out cable.

Do you want to install an optional Serial Port Fan Out cable?

No Go to "Step 13. Install an Optional Tablet" on page 1-20.

Yes Perform the following steps:

1. If installed, remove the device attached to the 25 pin D-shell connector (S) from the I/O panel.
2. Attach the Serial Port Fan Out cable to the 25 pin D-shell connector (S).
3. If removed, reconnect the device to the Serial Port Fan Out cable connector marked "S1".
4. If desired, connect a second device to the connector marked "S2".



5. Go to "Step 13. Install an Optional Tablet" on page 1-20.

Step 13. Install an Optional Tablet

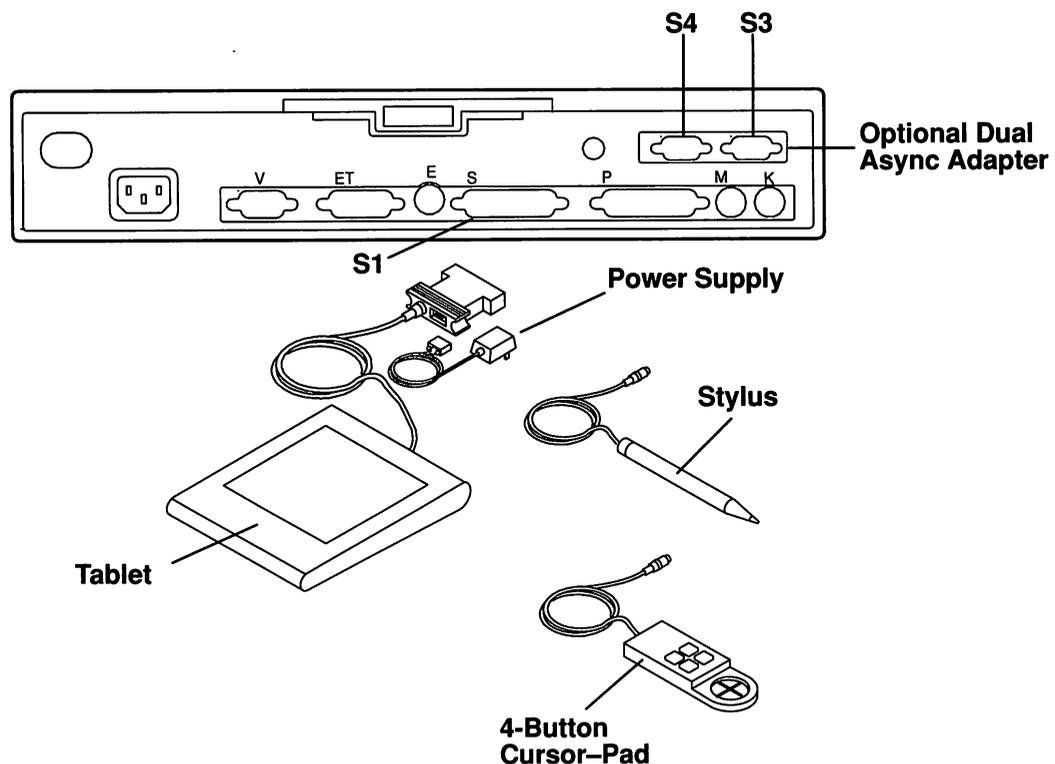
To use the tablet, a stylus or 4-button cursor-pad, a cable feature and a power supply feature are required. If you do not have them, contact your IBM representative.

Do you want to install an optional tablet?

No Go to "Step14. Connect the Cables" on page 1-21.

Yes Perform the following steps:

1. You need three cables to set up your tablet. See the illustration.
 - a. The tablet attachment cable which connects to the tablet and to the Xstation. Two serial port cables are available:
 1. One for connection to the 25 pin D-shell connector.
 2. One for connection to the optional Dual Async Adapter having a 9 pin D-shell connector.
 - b. The power supply cable which connects to the tablet attachment cable and to the power outlet.
 - c. The cable which connects the stylus or 4-button cursor-pad to the tablet.
2. Connect your tablet attachment cable to the tablet. Make sure that the arrow on the connector is facing the bottom of the tablet.
3. Connect the other end of the attachment cable to the desired Xstation serial port.
4. Connect either the stylus or the 4-button cursor-pad to the tablet.
5. Connect the power cable to the tablet attachment cable and to the power outlet.



6. Go to "Step14. Connect the Cables" on page 1-21.

Step 14. Connect the Cables

DANGER

AN ELECTRICAL OUTLET THAT IS NOT CORRECTLY WIRED COULD PLACE HAZARDOUS VOLTAGE ON METAL PARTS OF THE SYSTEM OR THE DEVICES THAT ATTACH TO THE SYSTEM. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO ENSURE THAT THE OUTLET IS CORRECTLY WIRED AND GROUNDED TO PREVENT AN ELECTRICAL SHOCK.

BEFORE INSTALLING OR REMOVING SIGNAL CABLES, ENSURE THAT THE POWER CABLES FOR THE SYSTEM UNIT AND ALL ATTACHED DEVICES ARE UNPLUGGED.

WHEN ADDING OR REMOVING ANY ADDITIONAL DEVICES TO OR FROM THE SYSTEM, ENSURE THAT THE POWER CABLES FOR THOSE DEVICES ARE UNPLUGGED BEFORE THE SIGNAL CABLES ARE CONNECTED. IF POSSIBLE, DISCONNECT ALL POWER CABLES FROM THE EXISTING SYSTEM BEFORE YOU ADD A DEVICE.

USE ONE HAND, WHEN POSSIBLE, TO CONNECT OR DISCONNECT SIGNAL CABLES TO PREVENT A POSSIBLE SHOCK FROM TOUCHING TWO SURFACES WITH DIFFERENT ELECTRICAL POTENTIALS.

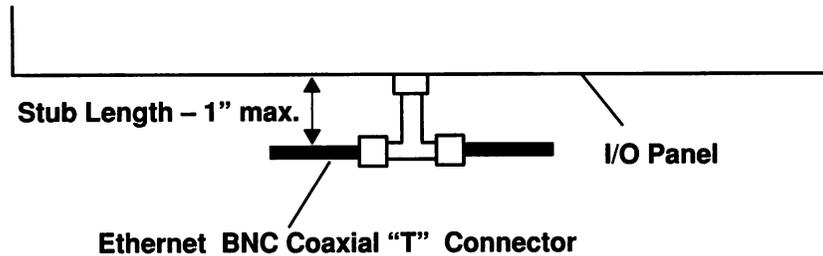
DURING AN ELECTRICAL STORM, DO NOT CONNECT CABLES FOR DISPLAY STATIONS, PRINTERS, TELEPHONES, OR STATION PROTECTORS FOR COMMUNICATIONS LINES.

CAUTION:

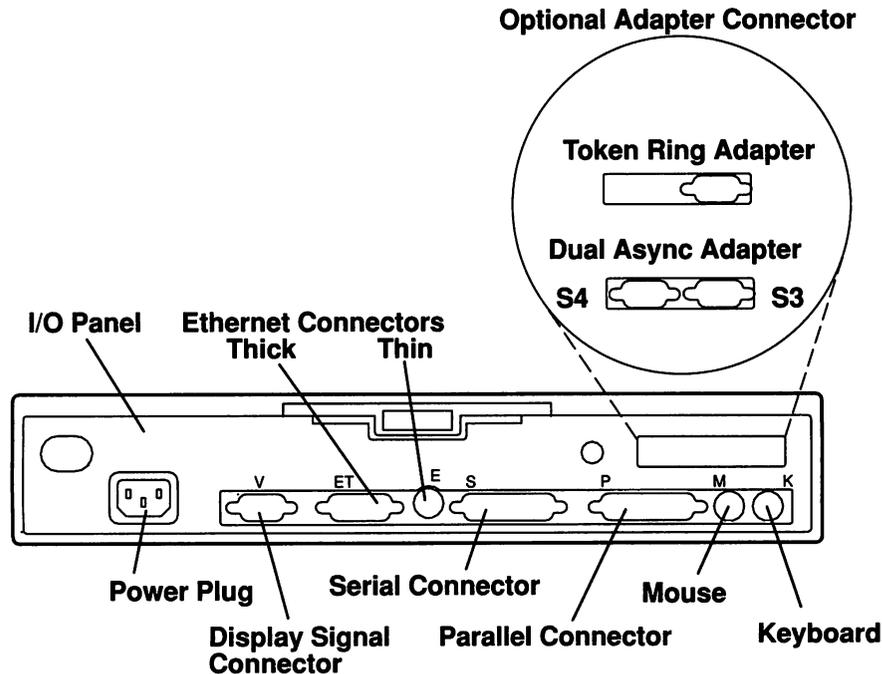
This product is equipped with a 3-wire power cable and plug for the user's safety. Use this power cable in conjunction with a properly grounded electrical outlet to avoid electrical shock.

CONTINUE

1. Turn the Xstation power off.
2. After referring to the I/O panel diagram below, connect the following cables to the Xstation in order, if not already connected.
 - a. The keyboard and any other input devices.
 - b. Network cables. The ethernet (thick) cable input version requires a user-supplied standard D-Shell connector. The co-axial (thin) cable input version of ethernet requires a user-supplied, BNC-style coaxial "T" connector. To prevent signal weakening or loss, the stub length of the connector, that is, the portion extending from the I/O panel to the cable, should be a maximum of 1 inch.



- c. Serial or parallel devices.
- d. The display signal cable. Use of the IBM 6091 display requires that an FCC-certified signal cable such as IBM part number 58F2901 or equivalent be used.
- e. The power cable.



3. Plug the display and Xstation system unit power cables into electrical power receptacles.
4. Continue to "Starting the Xstation" on page 2-2.

Chapter 2. Operating the Xstation

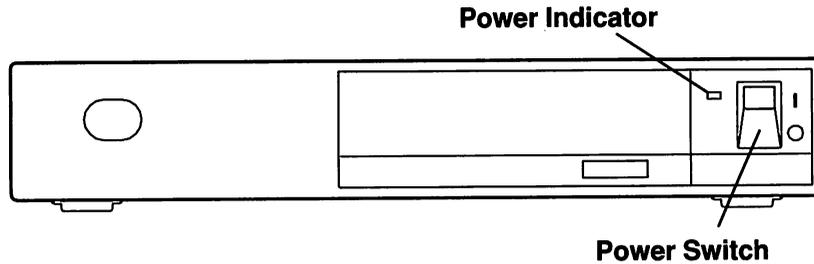
Chapter Contents

Starting the Xstation	2-2
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Selecting Screen Size and Shades	2-9
Using the Keyboard	2-10
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Cleaning the Mouse	2-13
Selecting Asynchronous Terminal Emulation	2-14
Terminal Setup	2-15
Network Setup	2-16
Securing the Xstation	2-18
Moving the Xstation	2-19

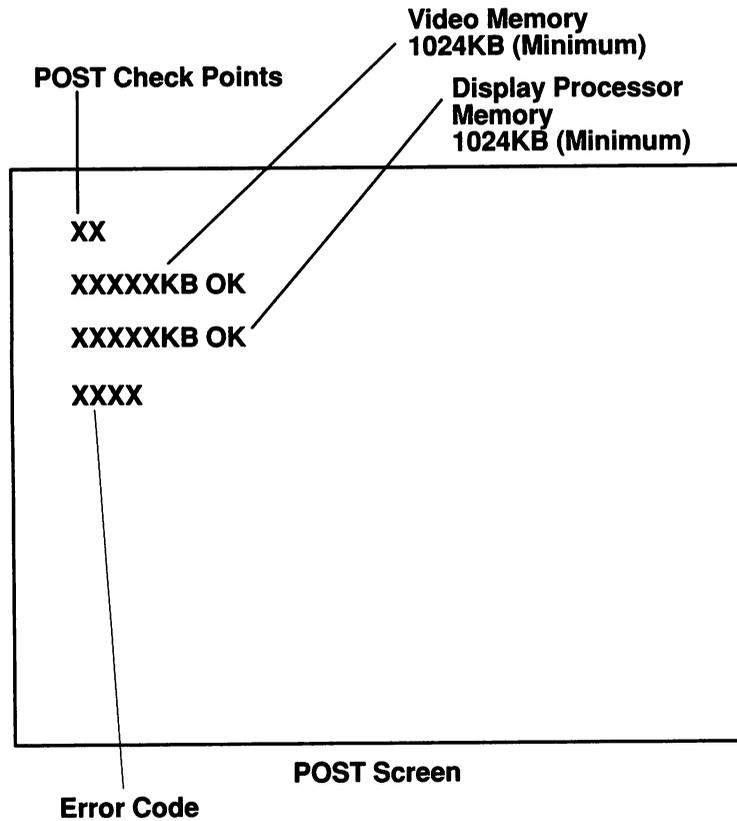
Starting the Xstation

Set the display and Xstation power switches to On.

Setting the Xstation system unit power switch to the On position starts an Power-On-Self-Test (POST) and diagnostic routine.



When your Xstation is powered on, POST and built-in diagnostics begin automatically. Video and display processor memory are displayed first.



CONTINUE

When the POST has successfully completed (one audio beep), the LAN Statistics Screen should display information for applicable LANs.

If the Xstation fails to complete the POST or LAN communications, go to "Problem Determination Procedures (PDPs)" on page 3-2.

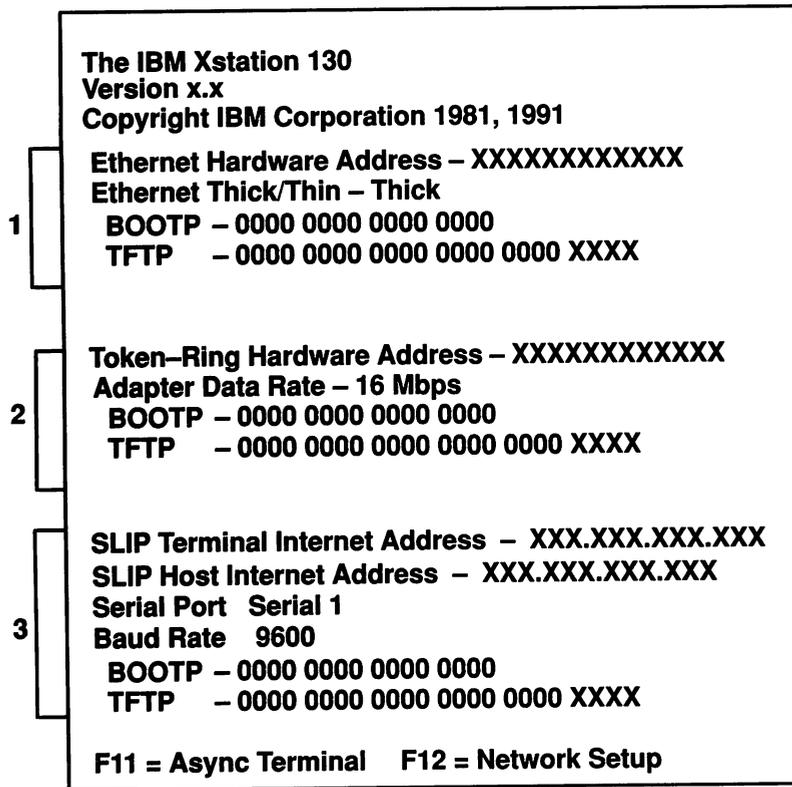
Notes:

1. Ensure that you report the ethernet and token-ring hardware addresses displayed on the LAN Statistics Screen to your system or network administrator so they can configure the Xstation on the network.
2. When multiple networks are installed and one of the LANs is inoperative due to network or Xstation problems, the program will be loaded from the operative LAN if your Xstation is configured on a host on that LAN. If all LANs are inoperative, the "not OK" screen will be displayed. Refer to "Problem Determination Procedures (PDPs)" on page 3-2.
3. Token-ring data will appear only if the Token-Ring Adapter is installed.
4. SLIP terminal information will appear if SLIP has been enabled.

If the LAN error code field for the host network is 0000, the Xstation program is executing; your particular login window will appear next. If an error code is received, or the login window fails to appear within four minutes, go to "Problem Determination Procedures (PDPs)" on page 3-2.

CONTINUE

Three types of networks may be displayed and active on the LAN Statistics Screen.



LAN Statistics Screen

The first four fields for BOOTP and TFTP are counts of LAN communication conditions. Fields five and six of TFTP are LAN error codes.

- | | |
|---------|---|
| Field 1 | Requests sent. |
| Field 2 | Requests received. |
| Field 3 | Invalid replies. |
| Field 4 | Timeouts |
| Field 5 | LAN error code; 0000 indicates that diagnostics are complete and the Xstation program is executing. |
| Field 6 | LAN error code extension provides additional error information. |

Using Displays

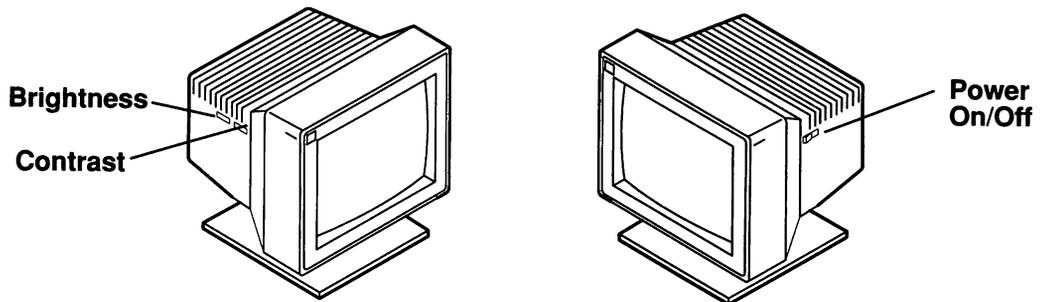
Various IBM displays are available for use with the Xstation; the cover is designed to physically support displays up to 43Kg (95) pounds. For display specifications, see your IBM sales representative.

Note: Carrying or moving heavier displays may require two persons.

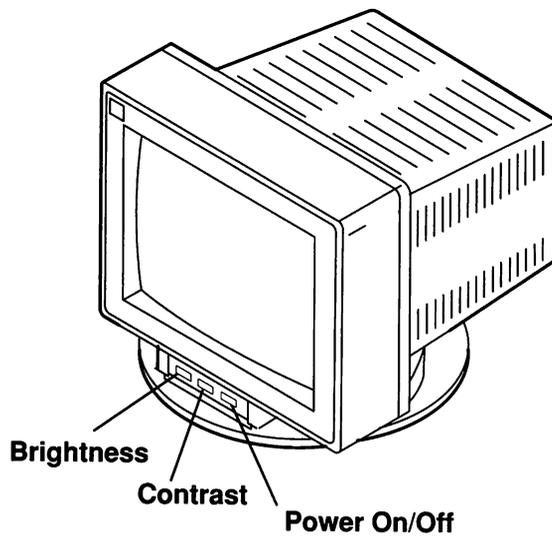
Display Controls

These illustrations show the control locations for a representative selection of IBM displays which may be used with the Xstation.

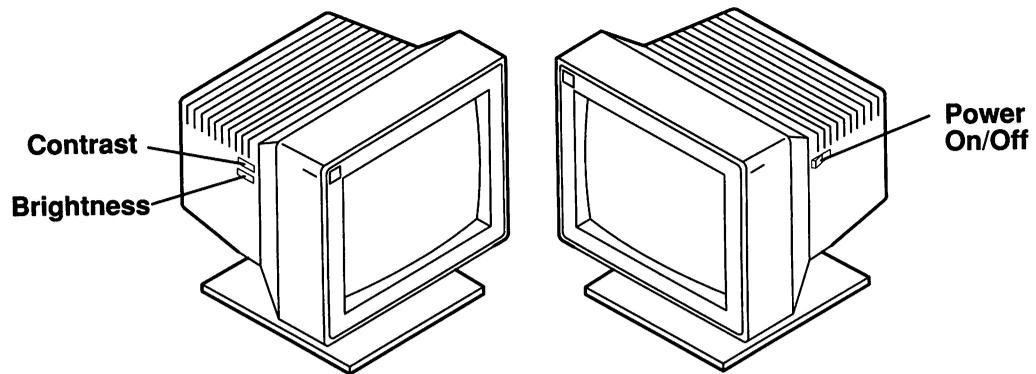
IBM 8503/8504 (Monochrome) and 8512/8513 (Color)



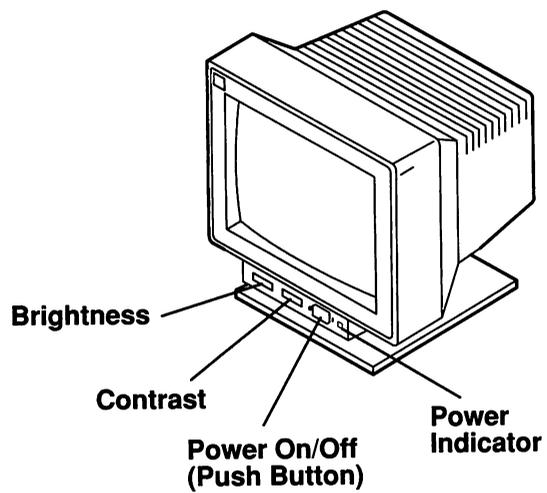
IBM 8507 and 8508 (Monochrome)



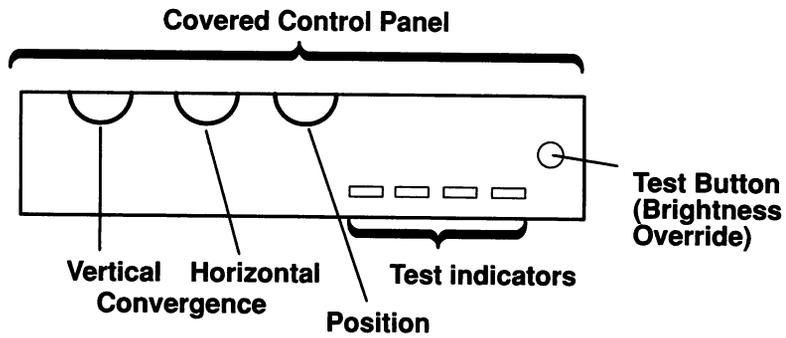
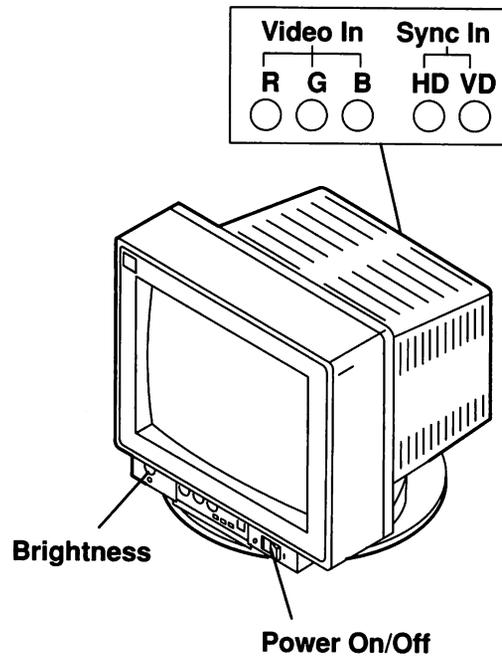
IBM 8514 (Color)



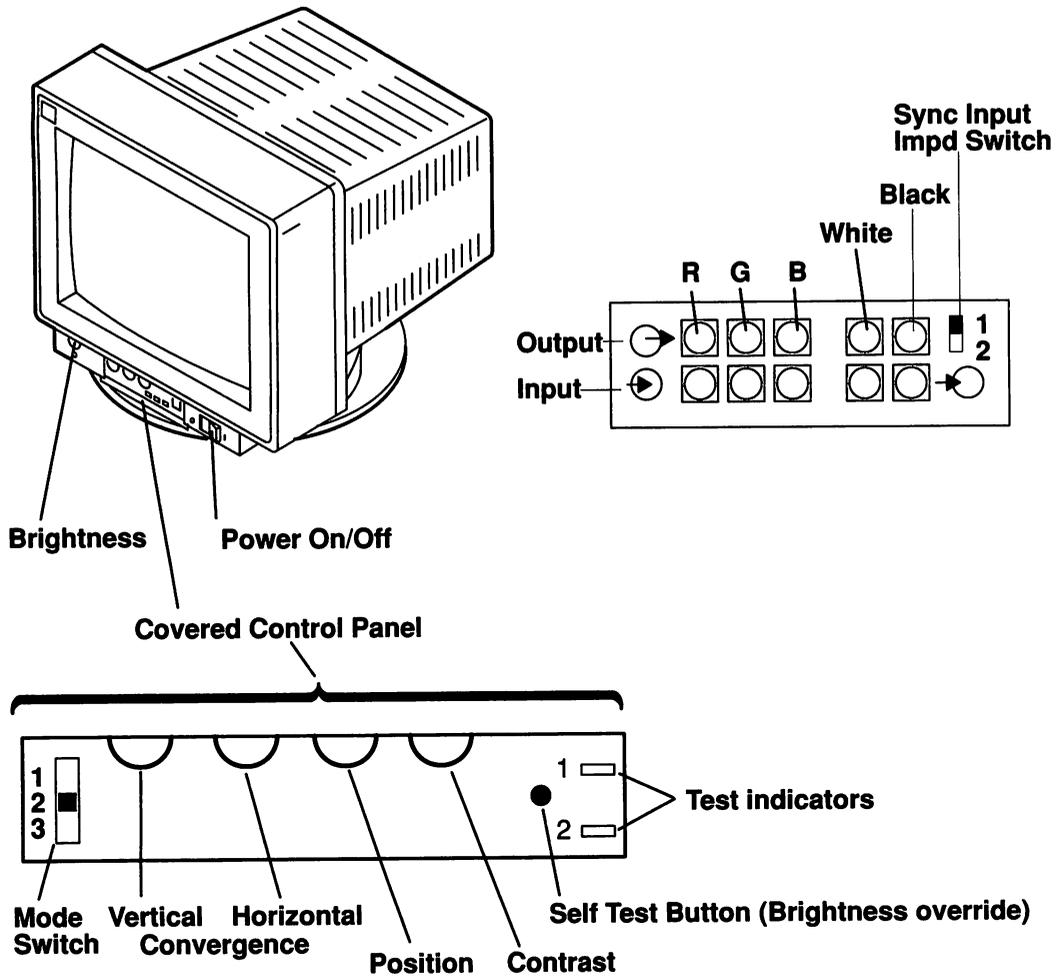
IBM 8515 (Color)



IBM 5081 (16 Inch RPQ Color)



IBM 6091 (Color)



Note: Use of the 6091 display with the Xstation requires (1) that the 6091 Mode Switch be set to Position 2, (2) use of an FCC–required signal cable such as IBM Part Number 58F2901 or equivalent, and (3) that the sync input impedance switch be set to 1.

Selecting Screen Size and Shades

Various supported IBM displays offer increased resolution and shades (colors) capability when optional video memory is installed. Alternate resolution and shades capability are selected from the terminal configuration screen. (Refer to "Select Screen Resolutions and Shades" on page 3-10.)

Display	Monitor Type (ID)	Resolution (hz/vert pixels)	Colors-Shades Bits per Pixel	Min. Video Memory	Diag. Test Screen Char Test
8503	Hex 07	640 x 480	1, 2, 4, or 8 *	1 MB	80 x 30
8507	Hex 06	640 x 480	1, 2, 4, or 8	1 MB	80 x 30
		1024 x 768	1, 2, 4, or 8 *	1 MB	64 x 24
8508	Hex 0D	1024 x 1024	1, 2, 4, or 8	1 MB	64 x 32
		1280 x 1024	1, 2, or 4 *	1 MB	80 x 32
			1, 2, 4, or 8 *	2 MB	80 x 32
		1600 x 1200	1, or 2	1 MB	100 x 37
			1, 2, or 4	2 MB	100 x 37
8512/8513	Hex 0B	640 x 480	1, 2, 4, 8 *, or 16	1 MB	80 x 30
8514	Hex 0A	640 x 480	1, 2, 4, 8, or 16	1 MB	80 x 30
		1024 x 768	1, 2, 4, or 8 *	1 MB	64 x 24
			1, 2, 4, 8 *, or 16	2 MB	64 x 24
8515	Hex 0E	640 x 480	1, 2, 4, 8, or 16	1 MB	80 x 30
		1024 x 768	1, 2, 4, or 8 *	1 MB	64 x 24
			1, 2, 4, 8 *, or 16	2 MB	64 x 24
5081 (RPQ) /6091	Hex 01	1024 x 1024	1, 2, 4, or 8	1 MB	64 x 32
		1280 x 1024	1, 2, or 4 *	1 MB	80 x 32
			1, 2, 4, or 8 *	2 MB	80 x 32

Notes:

1. The * in the colors-shades bits per pixel column indicates the default setting.
2. The IBM 6091 display requires an FCC-required signal cable such as IBM P/N 58F2901 or equivalent be used; its mode switch set to position 2; and its sync input impedance switch set to position 1.

The bits per pixel setting selects the color-shades as follows:

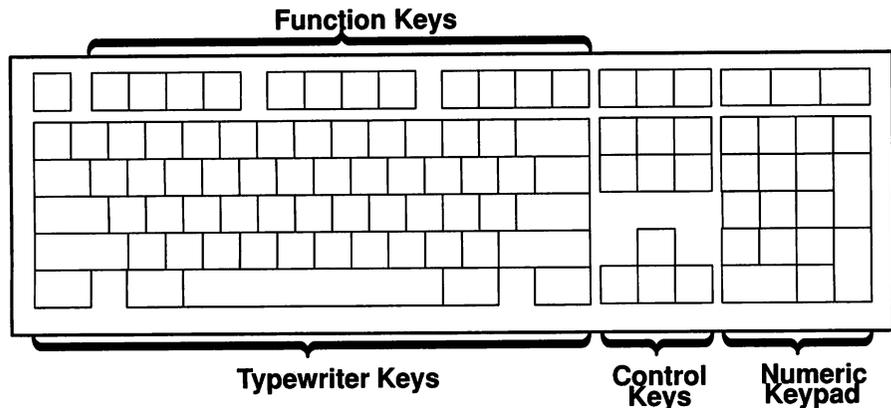
Bits/Pixel	Color-Shades
1	2
2	4
4	16
8	256
16	65,536

To select an alternate resolution or shade (color) capability, go to "Starting Diagnostics" on page 3-9 and follow the procedure to select Terminal Configuration.

Using the Keyboard

There are several keyboards available with the Xstation. The keyboards have various keys which enter data. The keyboards can be engraved for the languages of different countries, and the functions of each keyboard depend on the software used.

Note: Your keyboard configuration may vary from the following illustration.

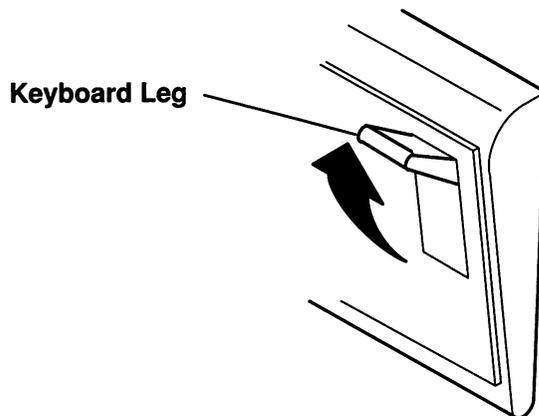


The keyboard is divided into four sections:

- The function keys are multipurpose keys whose functions are controlled by the operating system.
- The typewriter keys are similar to a standard typewriter. Their function is controlled by the software.
- The control keys move the cursor on the screen and do programmed control functions. The movement and functions depend upon the application used.
- The numeric keypad is arranged like a calculator to help when typing numbers. These keys are active when Num Lock is activated.

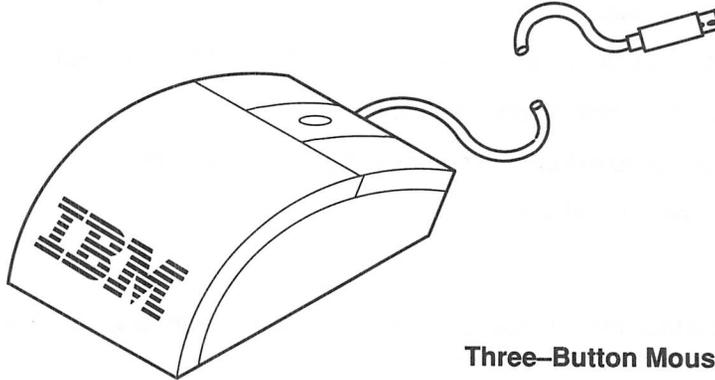
To tilt the keyboard for typing comfort, pull out on the keyboard legs. The legs will snap out into position.

To decrease the tilt of the keyboard, rotate the keyboard legs until they snap into the bottom of the keyboard case.



Using the Mouse

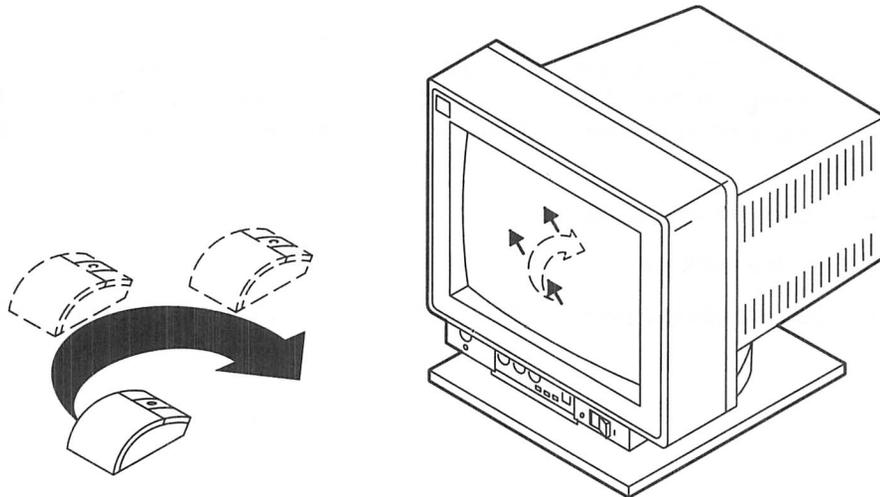
The three-button mouse shown is a hand-operated locator device available for use with the Xstation; consult your application publication for exact use of the mouse.



Three-Button Mouse

You can use the mouse to perform such functions as positioning a cursor, selecting items from a menu, or moving around in your document much easier and faster than if you used only the keyboard. You can also use the mouse for graphics applications if the software is so equipped. The cursor, or image of the mouse on the display screen, moves exactly as you move the mouse on a flat surface, such as a desk top.

When you move the mouse around on a flat surface as shown in this illustration, the cursor moves on the display screen; the movement positions the cursor.



With the mouse buttons, you can perform functions such as selecting and deselecting options, extend your selection, or choosing a command. The precise function of your mouse depends on the software you are using.

The mouse has a cable that plugs into a mouse connector on the back of the Xstation.

Handling the Mouse Correctly

For best operation, handle the mouse correctly. Incorrect handling can damage the mouse.

Do not:

- Operate the mouse on cloth, unfinished wood, newspaper, or carpet.
- Drop or hit the mouse.
- Pull the cable. You can cause damage to the cable and the connector.
- Carry the mouse by holding onto the cable.
- Expose the mouse to extreme temperatures or direct sunlight.
- Place the mouse in liquid spills.

Care of the Mouse

The operating surface for the mouse should be smooth, clean, and flat. For example, you can operate the mouse on the following surfaces:

- Finished wood
- Glass
- Enamel
- Plastic (including laminates)
- Paper (except newspaper)
- Metal.

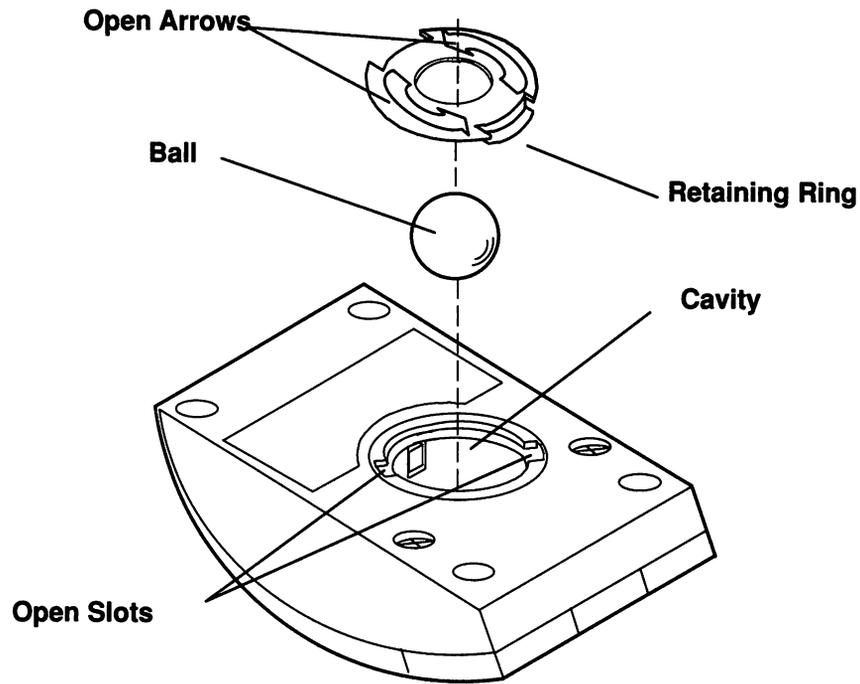
Rough surfaces collect contaminants that can be transferred to the interior of the mouse by the ball. The surface you use should be free of spills, dirt, dust, lint, wax, eraser dust, and other foreign matter. Rough surfaces can also cause the pads located on the bottom of the mouse to prematurely wear. A deeply pitted surface could cause erratic operation of the mouse.

- Inspect the work surface for spills or other contaminants.
- Dust the work surface.
- If you are using a paper pad, inspect it for wear and replace it if necessary.

Cleaning the Mouse

These steps describe how to clean the mouse:

1. Remove the retaining ring by turning the retaining ring counterclockwise, in the direction of the arrow.

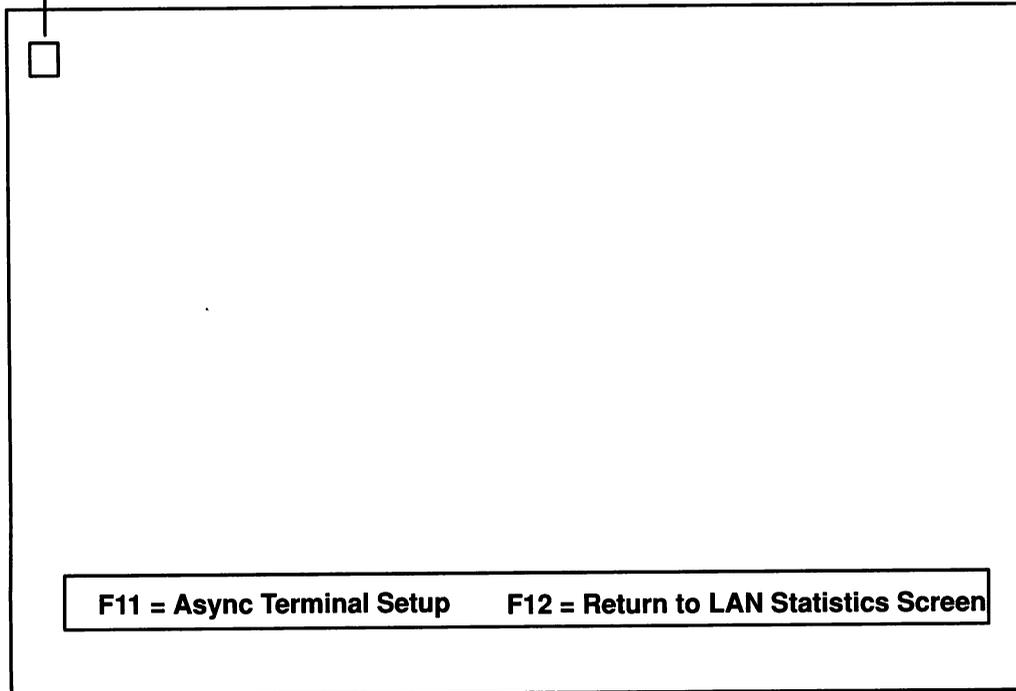


2. Remove the ball.
3. Inspect the ball for contaminants. Wipe it clean with a dry, lint-free cloth.
4. If the ball is dirty, wash it in warm, soapy water. Rinse and wipe the ball with a lint-free cloth until dry.
5. Inspect the ball cavity in the mouse for foreign materials. If there are any foreign materials, remove them.
6. Replace the ball.
7. Replace the retaining ring on the mouse and align it with the open slots in the ball cavity.
8. Turn the retaining ring clockwise until the open slots are covered and you hear the ring snap into place.

Selecting Asynchronous Terminal Emulation

Turn the Xstation power on and wait for the LAN Statistics Screen to be displayed. Pressing F11 while the LAN Statistics Screen is displayed will display the Asynchronous Terminal Emulation screen. Configure the async terminal to match its host's setup by pressing F11.

Block Cursor



If you are using the Xstation as an asynchronous terminal, you cannot use it as an X terminal. Also, if you are using the Xstation as an X terminal, you cannot use it as an asynchronous terminal.

If the terminal doesn't immediately begin to operate, do the following:

1. Ensure that your terminal cable is connected properly.
2. Ensure that your terminal setup matches your host's setup and that the terminal cable is connected to the selected terminal port.
3. If the problem persists, go to "Recommended Actions (RA1)" on page 3-7.

CONTINUE

Terminal Setup

Pressing F11 while the asynchronous terminal emulation screen is displayed will display the Async Terminal Setup menu. If you are using the Xstation as a console, use the default values for the communication parameters.

The Async terminal setup screen allows the user to modify the settings of the Async terminal. The items for the Async terminal setup screen are shown by pressing F1.

Async Terminal Setup	
Serial Port	SERIAL 1
Baud Rate	9600
Parity	None
Number of Stop Bits	1
Bits per Character	8
Echo Characters	NO
Enable Xon/Xoff	YES
New Line Mode	CRLF
Auto Line Wrap	YES
Dial String	

Esc = Quit F1 = Help F12 = Save
Use ↑ or ↓ to move the highlighted bar
Use ← or → to change selection

Network Setup

Pressing F12 while the LAN Statistics Screen is displayed should display the Network Setup menu, which allows you to select your primary network (Token-Ring, Ethernet, or SLIP). This menu also sets up the SLIP communication parameters. Press F1 on the selected option for help information.

Network Setup	Page 1
Primary Network	Token ring
Enable SLIP	YES
Serial Port	SERIAL 1
Baud Rate	9600
Terminal Internet Address	
Host Internet Address	
Subnet Mask	
Dial String	
Disable Bootp	No
TFTP File Name	
Tag Field	
Esc = Quit F1 = Help F12 = Save Page Down Use ↑ or ↓ to move the highlighted bar Use ← or → to change selection	

Pressing Page Down while Network Setup page 1 is displayed will display Network Setup page 2. This screen allows the user to configure the Ethernet port for special cases such as booting through Gateways and booting without the use of the Bootp protocol. Modifications to this menu are not necessary for normal operation. Press F1 on the selected option for help information.

Network Setup	Page 2
Ethernet/IEEE 802.3	Automatic
Gateway Internet Address	192.35.17.3
Terminal Internet Address	192.35.17.2
Host Internet Address	192.35.17.1
Disable Bootp	No
TFTP File Name	
Tag Field	
Esc = Quit F1 = Help F12 = Save Page Down Use ↑ or ↓ to move the highlighted bar Use ← or → to change selection	

CONTINUE

If a Token-Ring Adapter is present, pressing Page Down while Network Setup page 2 is displayed will display Network Setup page 3. This screen allows the user to configure the Token-Ring for special cases such as booting through Gateways and booting without the use of the Bootp protocol. Modifications to this menu are not necessary for normal operation. Press F1 on the selected option for help information.

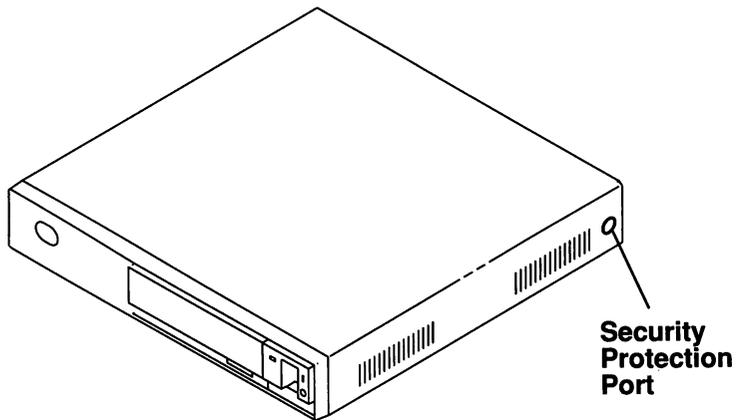
Network Setup	Page 3
Token-Ring	Automatic
Gateway Internet Address	192.35.17.3
Terminal Internet Address	192.35.17.2
Host Internet Address	192.35.17.1
Disable Bootp	No
TFTP File Name	
Tag Field	

Esc = Quit F1 = Help F12 = Save Page Up
Use ↑ or ↓ to move the highlighted bar
Use ← or → to change selection

Securing the Xstation

The Xstation can be secured by utilizing the convenient security protection port provided for locking the chassis assembly to outer cover by:

1. Securing your padlock through the convenient security protection port provided.
2. Tethering your security device (fiber optics, cable) through the convenient security protection port or padlock.



Moving the Xstation

There are safety precautions that must be taken when the Xstation is moved. If you want a trained person to move your Xstation, contact your IBM sales or service representative. If you decide to move the unit yourself, take the following precautions:

DANGER

AN ELECTRICAL OUTLET THAT IS NOT CORRECTLY WIRED COULD PLACE HAZARDOUS VOLTAGE ON METAL PARTS OF THE SYSTEM OR THE DEVICES THAT ATTACH TO THE SYSTEM. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO ENSURE THAT THE OUTLET IS CORRECTLY WIRED AND GROUNDED TO PREVENT AN ELECTRICAL SHOCK.

BEFORE INSTALLING OR REMOVING SIGNAL CABLES, ENSURE THAT THE POWER CABLES FOR THE SYSTEM UNIT AND ALL ATTACHED DEVICES ARE UNPLUGGED.

WHEN ADDING OR REMOVING ANY ADDITIONAL DEVICES TO OR FROM THE SYSTEM, ENSURE THAT THE POWER CABLES FOR THOSE DEVICES ARE UNPLUGGED BEFORE THE SIGNAL CABLES ARE CONNECTED. IF POSSIBLE, DISCONNECT ALL POWER CABLES FROM THE EXISTING SYSTEM BEFORE YOU ADD A DEVICE.

USE ONE HAND, WHEN POSSIBLE, TO CONNECT OR DISCONNECT SIGNAL CABLES TO PREVENT A POSSIBLE SHOCK FROM TOUCHING TWO SURFACES WITH DIFFERENT ELECTRICAL POTENTIALS.

DURING AN ELECTRICAL STORM, DO NOT CONNECT CABLES FOR DISPLAY STATIONS, PRINTERS, TELEPHONES, OR STATION PROTECTORS FOR COMMUNICATIONS LINES.

DANGER

TO PREVENT SHOCK HAZARD, DISCONNECT THE POWER CABLE FROM THE ELECTRICAL OUTLET BEFORE RELOCATING THE SYSTEM.

CAUTION:

This product is equipped with a three-wire power cable and plug for the user's safety. Use this power cable in conjunction with a properly grounded electrical outlet to avoid electrical shock.

1. If you are logged on to a host system, log off the attached network (Hold down the Ctrl and Alt keys and then press the Backspace key).
2. Turn off the Xstation system unit, display, and all attached separately-powered devices.
3. Unplug the Xstation system unit, display, and all attached separately-powered devices from power outlets.
4. Be sure to label all of the cables as you disconnect them.
5. Check all of the electrical power outlets in the location to which you are moving for correct wiring, voltage, and grounding before attaching the Xstation system unit, display, or separately-powered devices.
6. Connect all signal cables to the display and system unit before plugging any power cables into electrical outlets.

Chapter 3. Problem Determination Procedures (PDPs) and Diagnostics

Chapter Contents

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Problem Determination Procedures (PDPs)

The problem determination procedures (PDP)s assist the user in isolating solid failure problems such as no power or a displayed error code.

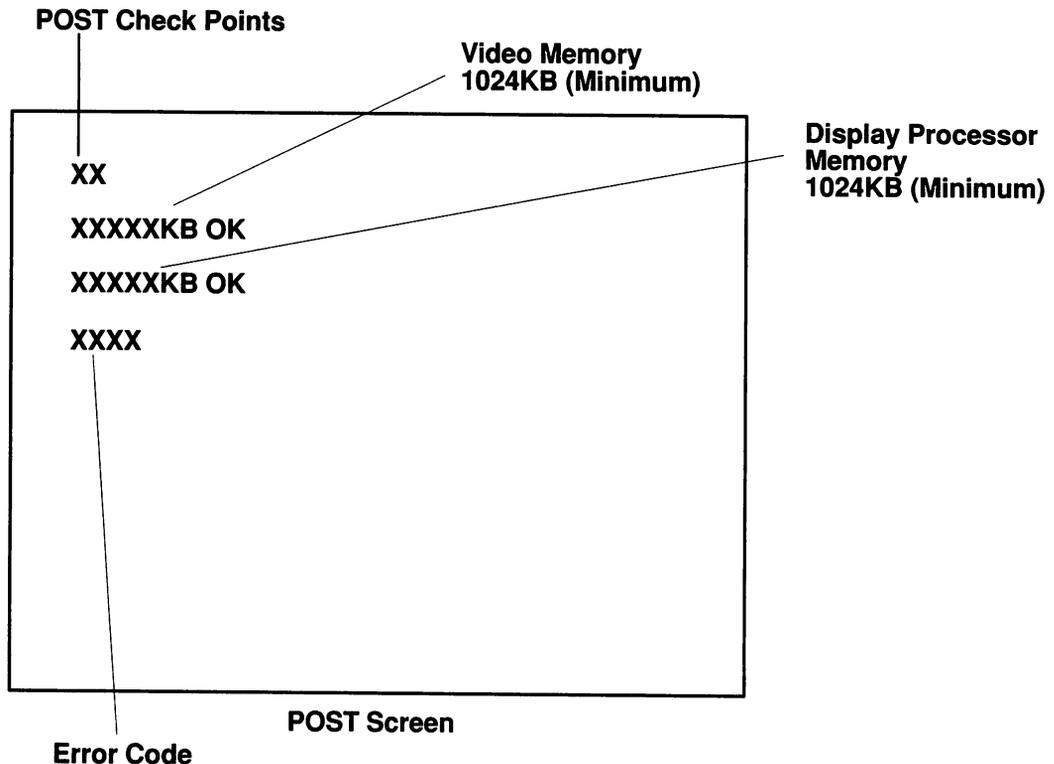
If you are logged on to the host system, record all of the information that identifies the problem, log off the system (hold down the Ctrl and Alt keys and then press Backspace) and turn the Xstation power Off.

Find the symptom in the following table that best describes the problem and take the indicated action. If the problem persists, record all of the information that identifies the problem and go to the appropriate "Recommended Action (RA)" on page 3-7.

Symptom	Action	RA
Power Problem – The power–on light does not come on, or comes on but does not stay on. – The fan is not running. – The display remains blank with no audible beep.	Check that the Xstation power cable is plugged into the Xstation and to a outlet that has proper power	1
Error Code Displayed – The Xstation stops with one or more error codes displayed on either the POST or LAN Statistics Screen and two short beeps may sound.	Proceed to "Error Analysis" on page 3-3.	–
Display Problem – The Xstation beeps once or twice, and the display remains blank, unreadable, rolling, out of focus, and so forth. – One long and two short beeps sound. – The characters on the screen are the wrong size. – The colors displayed are not normal.	Check the following: 1. If this is a new installation, verify that the system jumpers are at their factory setting shown on page 1-16. 2. The display power cable is plugged into the display and to an outlet that has proper power. 3. The display signal cable is not damaged and properly attached. 4. The display power switch was in the On position and the display controls are adjusted (Refer to "Using Displays" on page 2-5.)	1
Other Hardware Problems – No beep sounds – Any other combination of beeps other than the normal one short beep. – Four minutes have elapsed and the LAN Communications stopped. – Any other hardware problem.	Check all the cables to assure they are securely attached and not damaged. For more problem diagnoses, go to "Diagnostics" to test the terminal and check the error counts.	1
Software Problems – Stops with any LAN communicated text "Cannot load X server code", "Server Halted", – LAN statistics screen appeared, but the login screen fails. – An intermittent problem occurs on one application or command only.	If the 0000 code appears in field 5 of TFTP on the LAN Statistics Screen, you can assume that the hardware is functional. For more assurance go to "Diagnostics" and select the tests desired. Assure that you have sufficient display processor memory for your application.	2

Error Analysis

If the fan is not running, refer to "Recommended Action (RA 1)" on page 3-7. If a problem is detected during the Power-On-Self-Test (POST), the normal one audio beep may not be heard and the following screen should appear:



If more than one error code is displayed, refer to the non-configuration error codes in the order displayed.

If you have recently changed configuration and the error code displayed is a configuration error code 161 through 170, press the F1 key to update the configuration.

If you have not recently changed your Xstation configuration, find the error code in the following table and take the indicated action. If the problem persists, record all of the information that identifies the problem and refer to "Recommended Action (RA)" on page 3-7.

CONTINUE

Configuration Error Codes

Error Code	Configuration Change	Action	RA
161, 169	Display	Check for damaged or unplugged display cables.	1
162	Non-volatile RAM checksum	Press F1 to recalculate checksum.	1
163, 167, 168	World Trade ROM		1
164	Video memory/Display processor memory	Go to "Diagnostics" and test the display port.	1
165	Optional adapter (Token Ring, Dual Async, or Disk Drive)	Go to "Diagnostics" and test the adapter and disk drive.	1
170	Mouse	Go to "Diagnostics" and test the mouse.	1

Find the non-configuration error code in the following table and take the indicated action. If the problem persists, record all of the information that identifies the problem and refer to "Recommended Action (RA)" on page 3-7.

Non-Configuration Error Codes

Error Code	Possible Areas of Failure	RA
None	All appears normal.	—
10x, 11x	Detected system board error.	1
20x	System board memory error.	1
30x	Keyboard, keyboard cable, or system board error.	1
1101-2	System serial port or serial port fan out cable error.	1
1103-4	Dual Async adapter error.	1
2401 xxxx	Video memory error (xxxx = socket location).	1
2402 xxxx	Display processor memory SIMM error (xxxx = socket).	1
2405-6	Display processor error.	1
2407 xxxx	Invalid display processor SIMM found (xxxx = socket).	1
2408	No display processor SIMMs found.	1
24xx	Any other display processor error.	1
66xx	See LAN error analysis (Token-Ring) on page 3-5.	1
77xx	See LAN error analysis (SLIP).	1
800x	Tablet error (x identifies the serial port 1-4).	1
860x	Mouse or system board error.	1
88xx	See LAN error analysis (Ethernet) on page 3-5.	—
10499	Disk drive requires format.	3
104xx xxxx	Disk drive error.	1
Any other code	Undetermined error.	1

Note: The xxxx shows that an extended error code number may be present.

LAN Error Analysis

LAN extended error codes and error counts are used for detailed analysis of communications problems. Three types of networks can be displayed. The number of networks displayed depends on the setup of your Xstation as shown on the LAN statistics screen on page 2-4.

Network Error Codes

Ensure that the LAN communication cables are not damaged and are properly connected. Record the problem identified and refer to "Recommended Action (RA)" on page 3-7.

Code	Explanation	RA
66xx	Refers to the Token-Ring network.	
77xx	Refers to the SLIP network.	
88xx	Refers to the Ethernet network.	
—01	Internal error.	1
—02	External wrap error, assure that the external wrap connector is properly installed.	1
—03	Normal for Ethernet "Thick" networks in which SQE is disabled; otherwise treat this error the same as an —02.	—
—10	After three retries, TFTP error packet still received from host.	2
—20	Invalid network setup.	2
—21	The boot file (file specified in the returned ethernet BOOTP record) is not the correct format.	2
—22	Error detected in the boot file size.	2
—23	Error detected in determining the internal header of the ethernet boot file.	2
—24	TFTP error (after 5 attempts).	2
—25	Undefined ethernet communication error (after 5 attempts).	2

Token Ring Extended Error Codes (6602 06XX and 6602 07XX)

Extended token-ring error codes appear next to the communications error code.

These codes indicate an open failure, suspect the Token-Ring adapter configuration, cabling, network, or software problems. Record the problem identified in the table and refer to "Recommended Action (RA)" on page 3-7.

XX	Explanation for Error Code 6602 06XX	RA
FF	Open time out.	1
01	Invalid command code.	1
03	Adapter open; should be closed.	1
05	Required parameter(s) not provided.	1
30	Inadequate receive buffers for adapter to open.	1
32	Invalid NODE_ADDRESS.	1
33	Invalid adapter receive buffer length defined.	1
34	Invalid adapter transmit buffer length defined.	1

XX	Explanation for Error Code 6602 07XX	RA
11	Lobe media, function error. This may be caused by the Token-Ring device cable being disconnected from the Token-Ring Adapter.	2
26	Physical insertion, ring error.	2
27	Physical insertion, ring beaconing.	2
2A	Physical Insertion, timeout.	2
2D	No monitor detected (wrap connector installed). This may be caused by the multiple access unit (mau) connector on the Token-Ring device cable being unplugged from the Token-Ring network.	2
2E	Monitor contention error for RPL.	2
32	Address verification, signal loss.	2
35	Address verification, timeout.	2
36	Address verification, ring error.	2
37	Address verification, ring beaconing.	2
38	Address verification, duplicate node address.	2
3A	Address verification, remove received.	2
42	Ping poll, signal loss.	2
45	Ping poll, timeout.	2
46	Ping poll, ring error.	2
47	Ping poll, ring beaconing.	2
4A	Ping poll, remove received.	2
55	Request parameters, timeout.	2
56	Request parameters, ring error.	2
57	Request parameters, ring beaconing.	2
59	Request parameters, parameter request.	2
5A	Request parameters, remove received.	2

CONTINUE

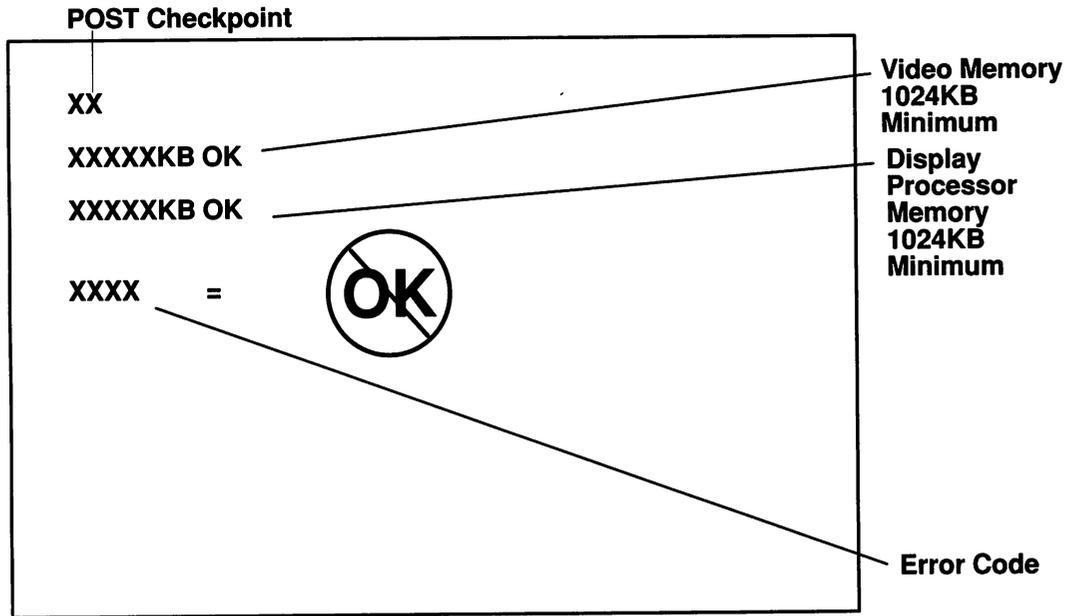
Recommended Actions (RA)

- RA 1** The symptoms indicate a hardware problem with your Xstation. Follow your local procedure for requesting hardware service. Report the error code displayed or other symptoms. If a display problem exists, report the display type. You may wish to further isolate the problem by referring to "Diagnostics" on page 3-8.
- RA 2** The symptoms point to a problem outside of your Xstation. Possible problem areas include communications, host error, Xstation network setup, configuration error, or software. Consult the "Problem Solving" section of the *System Management Guide for IBM AIX Xstation Manager/6000* (SA23-2264) and contact your local network or system administrator to resolve your problem.
- RA 3** If the disk drive has been previously formatted, go to "RA 1". If the disk drive has not been previously formatted, press and hold the Ctrl key and then press the Break key; when both keys are released the Main Menu should be displayed. Select the Fixed Disk option and press enter. Select the Normal format option and press enter. Follow the instructions to format the fixed disk.

Diagnostics

Xstation built-in diagnostics complement the basic troubleshooting techniques featured under "Problem Determination Procedures" in this chapter.

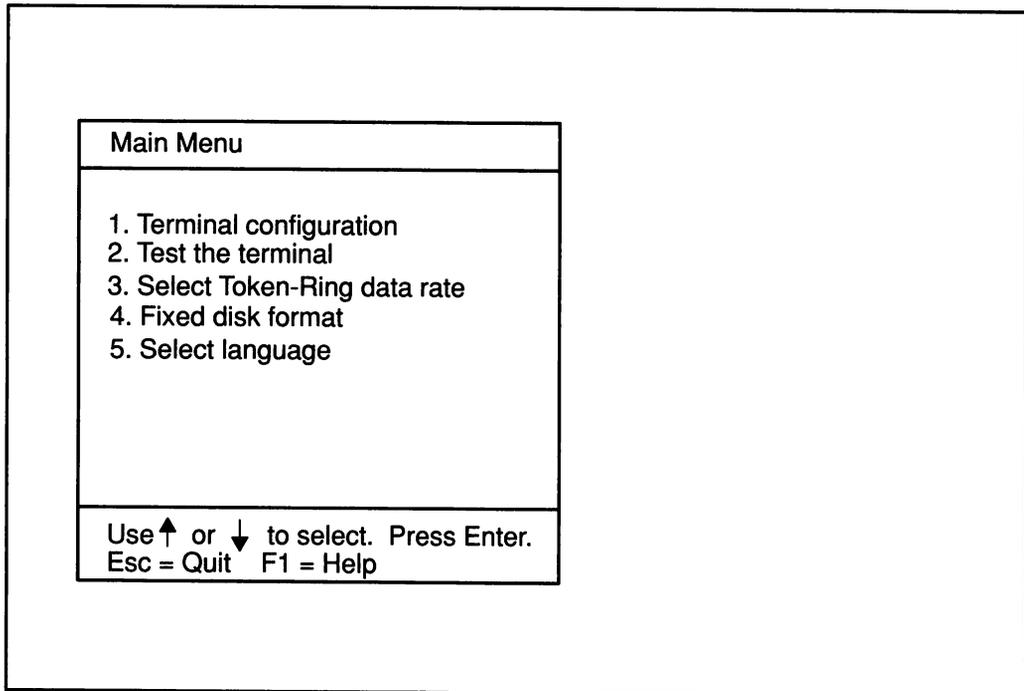
Diagnostics should be consulted if the Power-on Self-Test (POST) produces the "not OK" icon:



Starting Diagnostics

If you are logged on to the host system, record all of the information that identifies the problem. Log off the system, (hold down the Ctrl and Alt keys, and then press the Backspace key) and turn the Xstation power off. Go to "Starting the Xstation" on page 2-2 to exercise the Power-On-Self-Test (POST) before starting diagnostics.

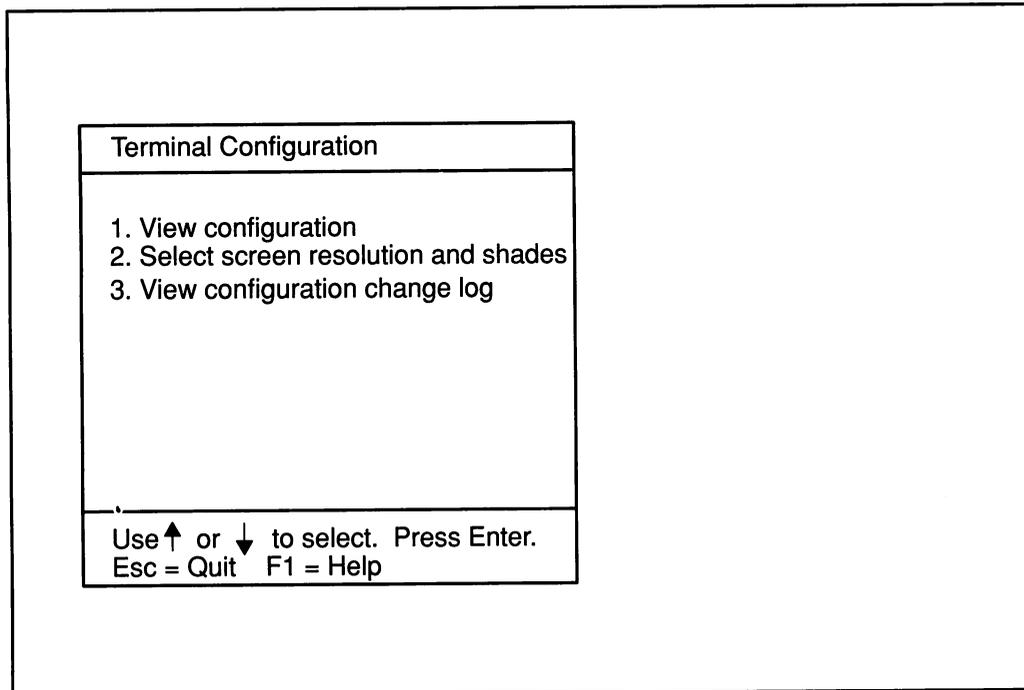
To enter diagnostics: while the Xstation is displaying a POST error or just as the LAN statistics screen appears, hold down the Ctrl key, and then press the Break key; when both keys are released, the Main Menu should be displayed.



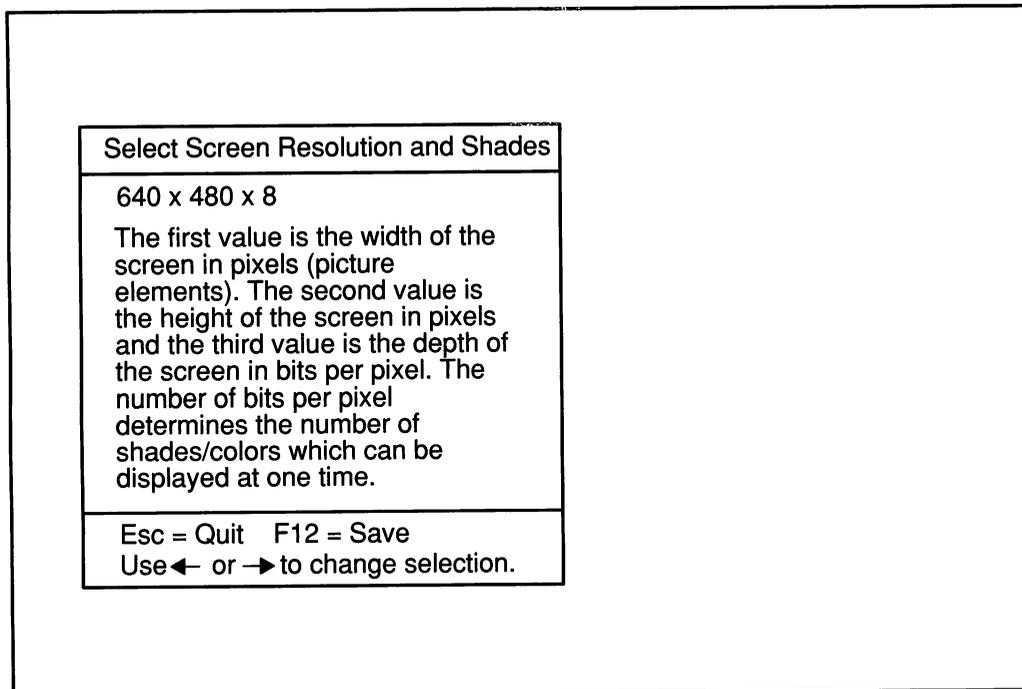
Note: Option 3 in the Main Menu is displayed only if a Token-Ring adapter is installed. Option 4 is displayed if the disk drive is installed. Option 5 is displayed in World Trade versions only. Option numbers will vary according to the installed options. If the Main Menu is not displayed, follow your normal hardware service procedure.

Select Screen Resolution and Shades

Select the `Terminal configuration` option from the Main Menu and the following screen should be displayed.



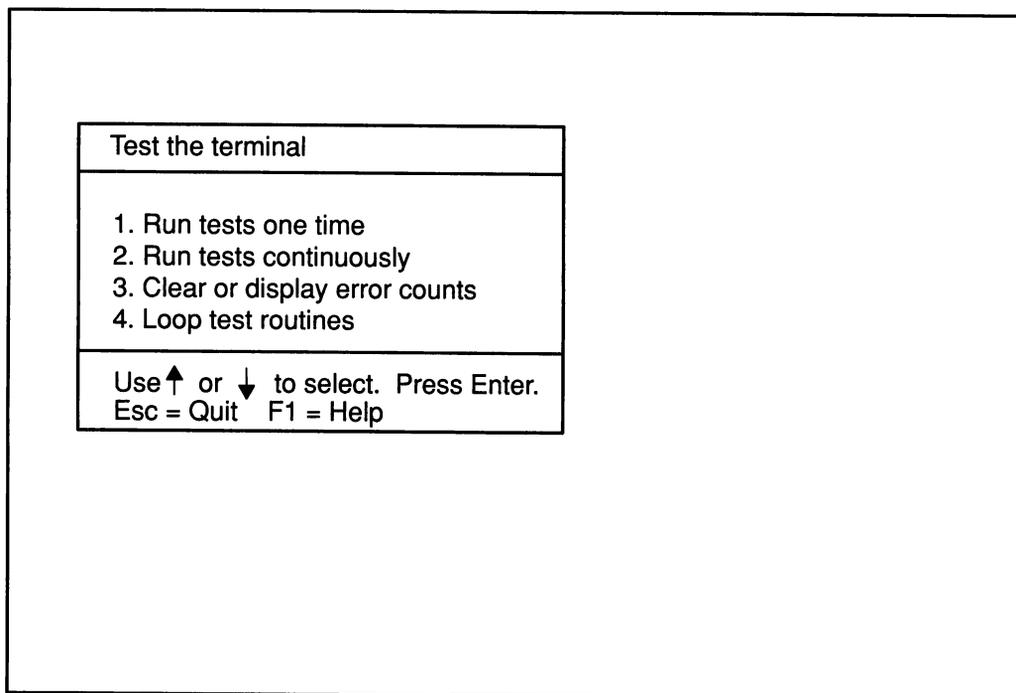
Select `Select screen resolution and shades` option from the Terminal Configuration Menu and refer to "Selecting Screen Size and Shades" on page 2-9.



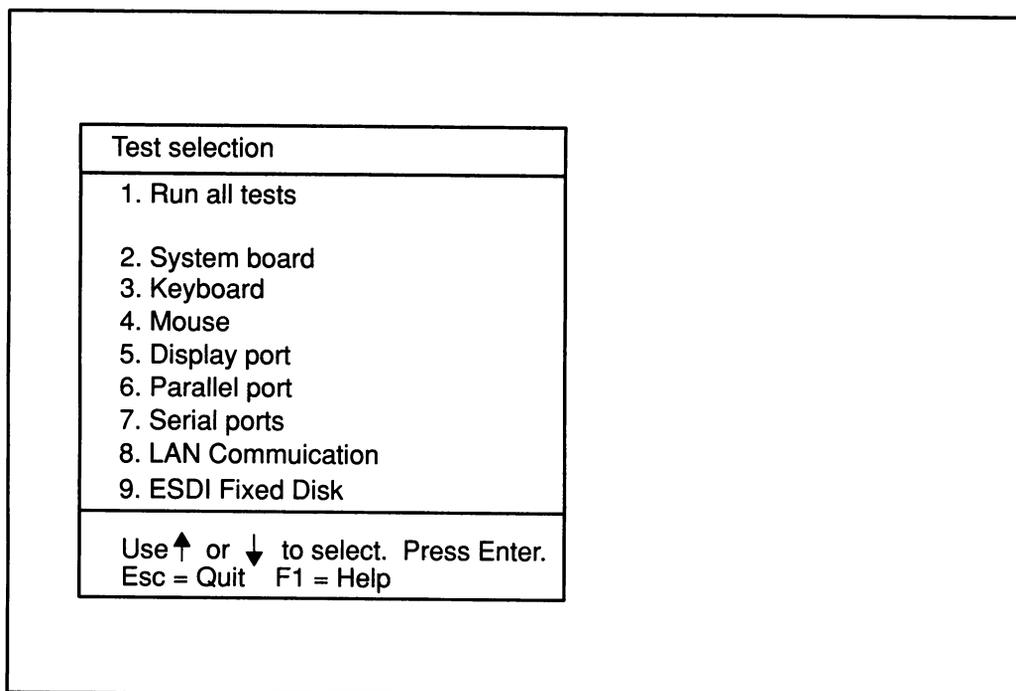
Note: On some monitors, F5 and F6 can be used for horizontal alignment of the screen.

Testing the Xstation

Select the `Test the Terminal` option from the Main Menu. The following screen should be displayed:



Selecting Options 1 or 2 should produce the Test Selection Menu that follows:



The test routines are menu driven and are self-explanatory. If the test routines reveal a problem, follow your normal hardware service request procedures. Option 9 is displayed only if the disk drive is installed.

Selecting Clear or display error counts from the built-in diagnostics' Test the Terminal Menu provides the following Xstation network error counts:

Token-Ring Error Counts

Error Count	Help Message
IFX	Number of I-Frame transmit errors.
IFR	Number of I-Frame receive errors
TOUT	Number of times T1 expired.

Ethernet Error Counts

Error Count	Help Message
BABL	Babble is a transmitter timeout error. It indicates that the transmitter has been on that channel longer than the time required to send the maximum length packet.
CERR	Collision Error is a collision after transmission transceiver test feature. This function is also known as Heartbeat.
MISS	Missed Packet is set when the receiver loses the packet because it does not own a receive buffer.
MERR	Memory Error occurs when the memory does not respond within the allotted time.
FRAM	Framing Error indicates that the incoming packet contains a non-integer multiple of eight bits and there is a count error.
OFLO	Overflow Error indicates that the input buffer overflowed and all or part of the incoming packet was lost.
CRC	Cyclic Redundancy Check indicates that the receiver has detected a CRC error on the incoming packet.
BUFF	Buffer Error is set any time the next buffer is not open while data chaining.
UFLO	Underflow Error indicates that the transmitter has truncated a message due to data arriving too late from memory.
LCOL	Late Collision indicates that a collision has occurred after the slot time of the channel has elapsed. The server does not retry on late collisions.
LCAR	Loss of Carrier is set when the input carrier goes false during the server-initiated transmission. The server does not retry upon loss of carrier.
RTRY	Retry Error indicates that the transmitter has failed, after 16 attempts, to successfully transmit a message due to a high collision rate on the medium.

Serial Port Error Counts

The following error counts are logged for each port.

Error	Definition
Overrun	An overrun error occurs when a character is lost due to the input buffer being full.
Parity	A parity error occurs when parity is enabled and the bit count of the character received is invalid.
Framing	A framing error occurs when the reception of a character did not terminate properly.
FIFO	A FIFO (first in–first out) error occurs when an error which caused the FIFO buffer to become invalid occurs.

Testing Displays/Memory

Selecting the `Display port` option (5) from the Test Selection Menu produces the Display Port Menu.

Display port
1. Run tests 2 through 6
2. Display processor test
3. Video memory test
4. Memory test
5. Character tests
6. Graphics tests
7. IBM 6091 monitor test
Use ↑ or ↓ to select. Press Enter. Esc = Quit F1 = Help

Note: Option 7 is used by service personnel to adjust the IBM 6091 display. Refer to specific IBM 6091 service literature.

Reader's Comment Form

IBM Xstation 130 Setup and Operator Guide

SA23-2635-00

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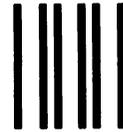
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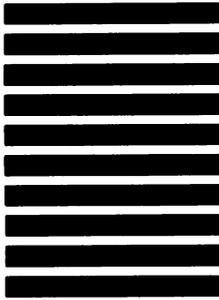
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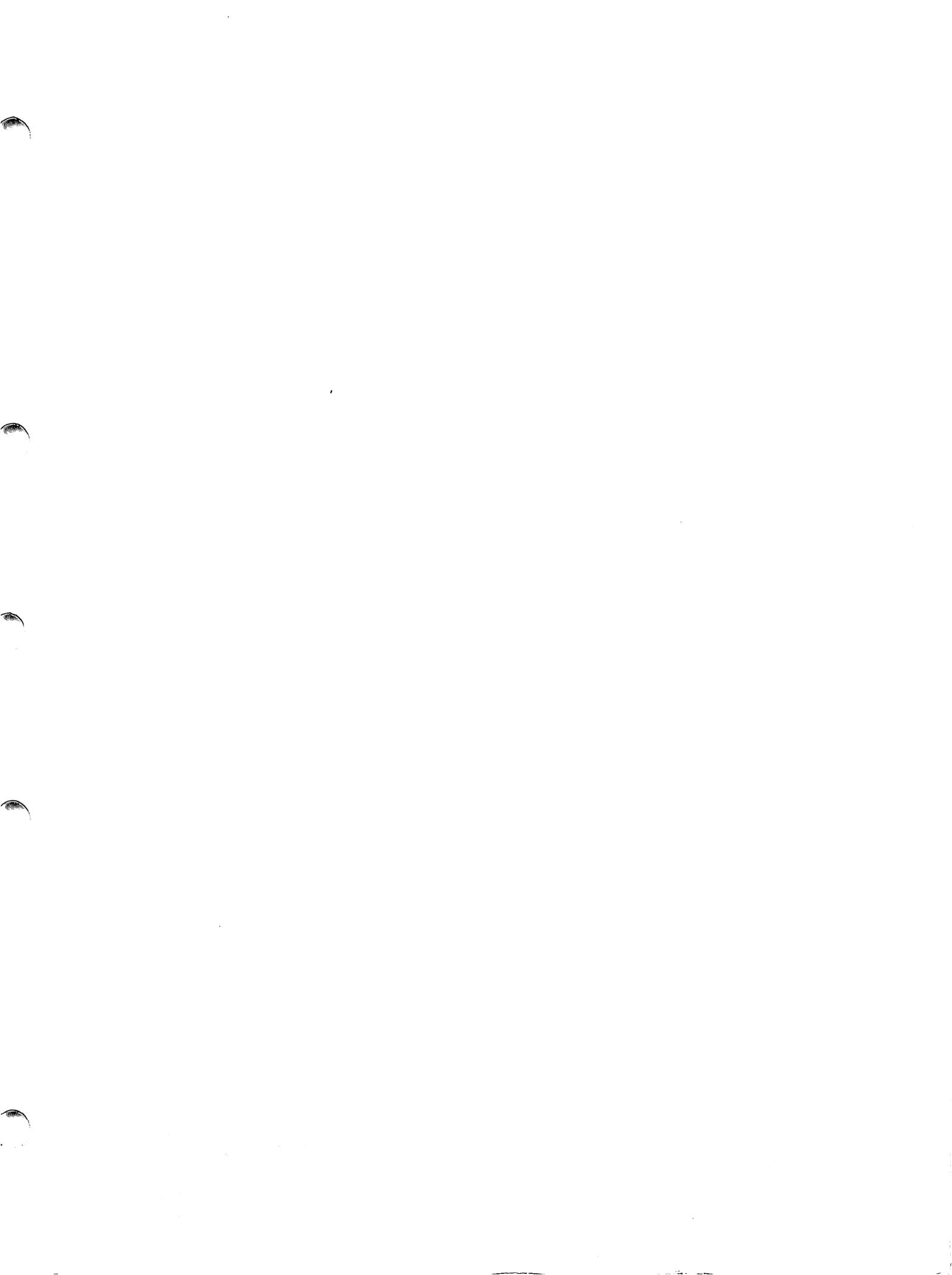
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