



IBM InfoWindow™ 3472

GA18-2917-00

User's Guide

- **Setting up your Display Station**
 - **Operations**
 - **Problem Solving Guide**
-
-

Federal Communications Commission (FCC) Statement

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions 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 interference 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 whatever measures may be required to correct the interference.

Instructions to User: 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.

The above FCC statement applies only to those machines used in the U.S.

United Kingdom Telecommunications Safety Requirements

Notice to Customers: This apparatus is approved under approval number NS/G/23/J/100003 for indirect connection to public telecommunication systems in the United Kingdom.

Canadian Department of Communications (DOC) Statement

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

The above DOC statement applies only to those machines used in Canada.

First Edition (September 1989)

Changes are made occasionally to the information herein; any such changes will be reported in subsequent revisions.

Reference in this publication to IBM products, programs, or services does not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM program product in this publication is not intended to state or imply that only IBM's program product may be used. Any functionally equivalent program may be used instead.

Publications are not stocked at the address given below. Requests for IBM publications should be made to your IBM representative or to the IBM branch office serving your locality.

A form for readers' comments is provided at the back of this publication. If the form has been removed, comments may be addressed to IBM Corporation, Publications Development, Department 6R1J, 180 Kost Road, Mechanicsburg, PA 17055 U.S.A. IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.

InfoWindow is a trademark of International Business Machines Corporation.

**Exhibit to IBM Statement of Limited Warranty
(U.S. Only)**

IBM InfoWindow™ 3472 Display Station Limited Warranty

IF YOU PURCHASED THE IBM InfoWindow 3472 DISPLAY STATION (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 EXHIBIT AND THE ENCLOSED STATEMENT OF LIMITED WARRANTY SHALL NOT APPLY.

WARRANTY SERVICE DESCRIBED IN THE ENCLOSED 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 FROM SUCH SUPPLIER.

I. Date of Installation (Warranty Start Date): The Date of Installation, which is the warranty start date, will be the day (Monday through Friday) following the date of delivery of the Machine to you from an IBM Authorized Dealer, an IBM Authorized Distributor or a Reseller who purchased the Machine from such Distributor, as applicable. Delivery is deemed to be complete when the Machine is placed in your possession; however, when the Machine is shipped to you, delivery will be deemed to be complete three days after the date of shipment from an IBM Authorized Dealer, an IBM Authorized Distributor or a Reseller who purchased the Machine from such Distributor, as applicable. You are responsible for setting up this Machine in accordance with the instructions in this manual.

II. Warranty Duration

	1 Year Warranty For Models	3 Years Warranty For Models
IBM 3472	FG1, FA1, FC1, FD1,	FG3, FA3, FC3, FD3,

III. Type of Service: IBM On-Site Repair (IOR)

IV. Period of Warranty Service Availability: When rendered by IBM, Warranty Service is available 24 hours per day, 7 days per week. When rendered by an IBM Authorized Dealer or an IBM Authorized Distributor, Warranty Service is available during the hours and days prescribed by such Dealer or Distributor.

V. Provider of Warranty Service: IBM or any IBM Authorized Dealer or IBM Authorized Distributor for this machine.

The IBM Statement of Limited Warranty appears in the following pages.

You may be required to provide a dated proof of purchase of this Machine from the IBM Authorized Dealer, the IBM Authorized Distributor or the Reseller who purchased this Machine from such Distributor and evidence of the date of delivery to you in order to obtain warranty service. If you have any questions regarding warranty service, contact your point of purchase, or call IBM at 1-800-428-2569.

Statement of Limited Warranty**DEFINITIONS**

The term "Machine" as used herein refers to machines and/or their features, model conversions, machine elements and accessories unless the context requires individual reference.

The terms "Machines" and "machines" are used in substitution for the terms "Products" and "products," respectively. Such latter terms appear in selected IBM agreements.

The term "failing machine" refers to machine or machine element requiring warranty service. The term "exchange machine" refers to a machine or machine element provided by IBM to the Customer under an Exchange Type of Service.

The term "programming" shall mean such programming as IBM may make generally available, without separate charge, for machines of the types ordered by the Customer.

WARRANTIES

Machines purchased from IBM under an agreement for purchase of IBM machines or from an IBM approved Remarketer, or an IBM Authorized Dealer, Distributor or Wholesaler will be 1) newly manufactured by or for IBM from new and serviceable used parts which are equivalent to new in performance in these Machines, 2) assembled by or for IBM from serviceable used parts, or 3) Machines which have been previously installed.

IBM warrants that on the Date of Installation each Machine will be in good working order and will conform to IBM's official published specifications which are available upon request.

The Warranty Period for each Machine commences on its Date of Installation.

Warranty service as described herein may be provided by IBM, an applicable IBM Authorized Dealer, or an IBM selected independent contractor, as indicated in the applicable Exhibit.

IBM will not provide warranty service hereunder for Machines or programming located outside the United States and Puerto Rico.

Service and Parts Warranty

Commencing on the Date of Installation of each machine, model upgrade and feature addition, and continuing for the duration of the Warranty Period, IBM agrees to provide the availability of warranty service at no additional charge except as set forth in this subsection or in the subsection entitled "Travel Expense," to keep the machines, model upgrades and feature additions in, or restore them to, good

working order. Warranty service will be provided by repairing the machines, model upgrades or feature additions or exchanging the machines under one of the Types of Service described in the subsection entitled "Types of Service." The specific Type of Service for each machine, model upgrade or feature addition will be indicated in the applicable Exhibit. Warranty options that provide alternate Types of Service are available for certain Machines under an IBM maintenance agreement.

It is the Customer's responsibility to determine when a machine or machine element requires warranty service. Before requesting warranty service, the Customer will perform any problem determination procedures provided by IBM, and if service is required, the Customer will follow the service request procedures by IBM.

When the Customer presents a failing machine to IBM under a Repair Type of Service, IBM will provide warranty service to restore the failing machine to good working order. Repair Types of Service include remedial maintenance and may include preventive maintenance based on the specific needs of individual machines as determined by IBM. Repair Types of Service may also include lubrication, adjustments and replacement of parts, all as deemed necessary by IBM. Parts, which may be used parts, will be furnished on an exchange basis, and the replaced parts become the property of IBM. When a failing machine is to be repaired under a Repair Type of Service, the Customer is responsible to remove or implement other safeguards to protect all programming, programs, data and removable storage media before such repair.

When the Customer presents a failing machine to IBM under an Exchange Type of Service, it becomes the property of IBM at the time of exchange. An exchange may not be new, but will be in good working order, and becomes the Customer's property at the time of exchange. IBM reserves the right to verify that warranty service for a failing machine is required prior to providing an exchange machine. When a failing machine is exchanged, the Customer will remove all programming, programs, data and removable storage media, and all non-IBM parts, options, alterations and attachments before such exchange. The Customer agrees that all such items not removed will be deemed to have been discarded by the Customer. The Customer will not present to IBM a failing machine for exchange which is defaced, altered or damaged beyond repair. (Repair is as described in

the preceding paragraph.) However, if upon inspection IBM determines it has received in exchange a failing machine in such condition, the exchange will be nullified and each party will return to the other the machine or machine element in its possession.

The Period of Warranty Service Availability for IBM On-Site Repair and IBM On-Site Exchange Types of Service are specified in the applicable Exhibit. Outside such Period, warranty service, if requested by the Customer and provided by IBM, will be subject to charge for travel expense plus travel, waiting and service time at IBM's then applicable hourly service rates and minimum charges; however, there will be no additional charges for parts.

The Period of Warranty Service Availability for Customer On-Site Exchange, Customer Carry-In Exchange and Customer Carry-In Repair Types of Service are specified in the applicable Exhibit.

Warranty service described herein does not assure uninterrupted operation of the Machines. IBM may, at its option, store on the Customer's premises maintenance equipment and/or parts that IBM deems necessary to fulfill this warranty.

During the Warranty Period, engineering changes, determined applicable by IBM, will be controlled by IBM and installed as specified by IBM on the Machines. The Customer may, by providing notice subject to written confirmation by IBM, elect to have only mandatory changes, as determined by IBM, installed on Machines so designated.

IBM shall have full, free and safe access to the Machines to provide IBM On-Site Types of Service thereon. The Customer shall promptly inform IBM of any change in a Machine's location during the Warranty Period.

In respect to warranty service provided by IBM, the Customer is responsible for all risk of loss of, or damage to, Machines owned by other than IBM during the period such Machines are in transit to and from IBM, except for loss or damage caused by IBM's negligence. However, IBM is responsible for risk of loss of, or damage to, Machines owned by other than IBM while in possession of IBM or in transit from IBM by an IBM selected carrier whose expenses were prepaid by IBM.

The Customer represents and warrants that, at the time a failing machine becomes IBM's property, it will be free of any outstanding liens, security interests or other encumbrances held by any third party.

If the Warranty Period expires on a Friday or Saturday, it will be extended so that the last day of

such Warranty Period will be on the following Sunday.

Types of Service

IBM On-Site Repair (IOR)

IBM will provide warranty service for the failing machine at the Customer's location.

IBM On-Site Exchange (IOE)

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

Customer On-Site Exchange (COE)

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

Customer Carry-In Exchange (CCE)

The Customer will 1) deliver the failing machine to an IBM Service/Exchange Center or other IBM designated location, 2) pick up the exchange machine and take it to the Customer's location, 3) connect it, and 4) verify its operation.

The Customer, in lieu of such delivery and pick up, may ship the failing machine prepaid, in the original shipping container or equivalent to one of the designated IBM Service/Exchange Centers designated for this delivery method. IBM will then ship the exchange machine to the Customer's locations, prepaid, within the United States and Puerto Rico.

Customer Carry-In Repair (CCR)

The Customer will 1) deliver the failing machine to an IBM Service/Exchange Center or other IBM designated location, 2) when the failing machine is repaired, pick up and return it to the Customer's location, 3) connect it, and 4) verify its operation.

The Customer, in lieu of such delivery and pick up, may ship the failing machine prepaid, in the original shipping container or equivalent, to one of the IBM Service/Exchange Centers designated for this delivery method. IBM will ship the repaired machine to the Customer's location, prepaid, within the United States and Puerto Rico.

Programming

IBM warrants that, when shipped to the Customer, programming designated by IBM for use with a Machine and for which programming services are available will conform to IBM's official published specifications which are available upon request.

IBM does not warrant that functions contained in programming will operate in the combinations which may be selected for use by the Customer or will meet the Customer's requirements.

ALL OTHER PROGRAMMING IS DISTRIBUTED ON AN "AS IS" BASIS.

Additional Provisions for Features and Model Conversions

IBM's warranty for each feature addition or model upgrade requires that the machine on which it is installed is at the then current engineering-change level, is the specific serial-numbered machine for which it was ordered, and has 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 non-Customer set-up feature additions and model upgrades on the machine, and, if such attempt results in an incorrectly functioning machine, upon Customer request and at IBM's then applicable hourly service rates and minimum charges, parts and material prices and travel expense, IBM will remove the features and/or model upgrades and restore the machine to its prior condition. If such features or model upgrades did not involve the removal of parts which became the property of IBM, such features and model upgrades remain the property of the Customer. If such features and model upgrades did involve the removal of parts which became the property of IBM, such features and model upgrades become the property of IBM and the restored parts become the property of the Customer.

For a feature removal, model downgrade or reinstallation of a previously purchased feature or model conversion, a three-month parts warranty will apply to additional parts, if any, supplied by IBM.

Additional Provisions for Accessories

Accessories have a three-month Warranty Period unless otherwise specified by IBM. During the Warranty Period, the Customer will remove any defective or failing accessory and ship it prepaid to the designated IBM location. IBM will replace such accessory and ship the replacement to the Customer without charge.

Additional Provisions for Machines Containing Funds

The Customer is responsible for removing, controlling and replacing or reloading funds contained in the Machines. IBM will service Machines containing funds only when the cash container cannot be opened prior to repair by IBM, in which case the Customer will remove the funds as soon as the container has been opened.

Services for Additional Charge During the Warranty Period

The services for additional charge described in this subsection are not warranty services. However, unless such services are provided under another written agreement between the Customer and IBM, during the Warranty Period, the following services, if available, will be provided by IBM to the Customer at IBM's i) then generally available hourly service rates and minimum charges for IBM service time, including travel and waiting time, ii) parts and material prices then generally in effect, and iii) charges for travel and shipping expense, all as applicable:

- 1) Repair of Machine damage, replacement of parts or increase in service time caused by —
 - a) failure to continually provide a suitable environment prescribed by IBM including adequate space, electrical power, air conditioning and humidity control;
 - b) neglect misuse, including use of the Machines for purposes other than for which designed;
 - c) accident disaster, including water, wind and lightning, transportation; vandalism or burglary;
 - d) alterations, including any interconnection to the Machine of non-IBM equipment or devices not under an IBM maintenance agreement;
 - e) attachments, including any interconnection to the Machine design;
 - f) IBM Machines, other Machines or accessories, except those IBM Machines, other Machines or accessories that are owned by IBM, under warranty from IBM or under an IBM maintenance agreement;
 - g) conversions from one IBM model to another or installation or removal of an IBM feature whenever any of these activities was performed by other than IBM, except that this item (g) will apply only during the first three-month period subsequent to such Machine modification; and

- h) maintenance or repair of the Machine not performed by IBM.
- 2) Repair of Machine damage, replacement of maintenance parts (due to other than normal wear) or repetitive service calls caused by the use of, or failure to use, supplies;
- 3) Service for accessories other than as provided in the subsection entitled "Additional Provisions for Accessories" of this Section;
- 4) Inspection of altered Machine;
- 5) Replacement or addition of parts and increase in service time associated with the installation by IBM of an engineering change, required due to the conversion of one IBM model to another or installation or removal of an IBM feature whenever any of these activities was performed by other than IBM;
- 6) Rearrangement or relocation of Machines and provision of necessary materials; and
- 7) Replacement of a part not furnished for the Machine by IBM with a directly interchangeable IBM maintenance part, and any increase in service time associated with such activity, except that IBM will not replace any part which is included in an alteration.

Travel Expense

There will be no charge for travel expense associated with warranty service or programming service during the applicable Period of Warranty Service Availability except that actual travel expense will be charged when the site at which the Machine is located is normally inaccessible by both private automobile and scheduled public transportation.

Exclusions

The warranties stated herein do not include 1) furnishing supplies, painting or refinishing the Machines or furnishing material therefore, 2) electrical work external to the Machines, 3) installation, maintenance or removal of alterations or attachments to the Machines, and 4) any service which is impractical for IBM to render because of alterations in, or attachments to the Machines. IBM does not warrant that the operation of Machines or programming will be interrupted or error free or that all programming errors will be corrected.

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.

Preface

This manual describes the operations of the IBM InfoWindow 3472; and its intended use is for operators and supervisors.

Note: Some display station parts or equipment that appear in this publication may not be available in your country. Ask your IBM marketing representative for details.

Organization

This manual has the following chapters and appendixes:

Chapter 1, “Setup Instructions” provides information for setup of the display station. This chapter should be referred to when a display station element is replaced.

Chapter 2, “Operations” describes operations and adjustments of the display station including print operations.

Chapter 3, “Operator Messages” describes the messages that appear at the bottom of the screen.

Chapter 4, “Keyboard and key functions” describes the functions of the keys.

Chapter 5, “Problem Solving” describes what to do when you have a problem during display station operations. This chapter also provides information for removing and packing the display station parts.

Appendix A, “Display Station Controls and Adjustments” provides information for controlling and adjusting the display station.

Appendix B, “Printer Controls and Adjustments” provides information for controlling and adjusting the printer.

Appendix C, “Keyboard Layouts” shows the keyboard layouts available for the display station.

Related Manuals

When you need additional information on the IBM 3270 Information Display System, see the following publications.

- *IBM InfoWindow 3471 and 3472 Introduction and Installation Planning Guide*, GA18-2942

This book will help you prepare the display station site. This book provides introductory, environmental, electrical, and dimensional information.

- *IBM 3174 Subsystem Control Unit User's Guide*, GA23-0216

This book contains operator reference information and problem determination procedures for the IBM 3174 Subsystem Control Unit.

- *IBM 3174 Subsystem Control Unit Help Desk Reference*, GA23-0217

This book is intended for use in the handling of problems that may involve an IBM 3174 Subsystem Control Unit or attached terminals.

- *IBM 3174 Subsystem Control Unit Functional Description*, GA23-0218

This book is for anyone who needs data stream level information about 3174 function for writing programs or researching network problems.

- *IBM 3274 Control Unit Description and Programmer's Guide*, GA23-0061

This book provides the people who manage, analyze, and program IBM 3270 Information Display System installations with reference material concerning the 3274 control unit and attached terminals.

- *Entry Assist User's Guide*, GA23-0119

This book is for any person who wants to use the 3274 Entry Assist function in entering and editing textual material.

- *IBM 3270 Information Display System X.25 Operation*, GA23-0204

This book describes the steps required for designated terminals attached to an IBM 3274 Control Unit to communicate over an X.25 network.

- *Proprinter Guide to Operations*, SC31-2586

This book contains operator reference information for the IBM Proprinter™

Contents

Chapter 1. Setup Instructions	1-1
Check Parts	1-2
Attach RID (Repair Identification) Tags	1-3
Attach Logic Element to Display Element	1-5
Attach Stand to Display Element	1-7
Attach Lift-stand to Display Element	1-10
Connect Keyboard Cable	1-15
Personalize Display Station	1-16
Apply Power to Display Station	1-17
Adjust Screen Brightness	1-19
Obtaining Setup Sheet	1-21
Set Setup Values	1-22
Connect Display Station to Host System	1-25
Connect Printer	1-28
 Chapter 2. Operations	 2-1
Powering-On	2-1
Personalizing Display Station	2-2
Screen Brightness	2-2
Screen Contrast	2-2
Display Viewing Angle	2-3
Keyboard Slope Adjustment	2-4
Printing Screen Contents	2-5
Recording and Playing Keystrokes	2-7
Record Operation	2-7
Play Operation	2-8
Sample Operation	2-10
Making Entry and Edit More Effective: Entry Assist	2-13
Using Entry Assist Keys	2-13
Setting Tabs, Margin Signal, and Screen Margin Positions	2-14
Using Word Wrap Function	2-15
Changing Scale Line Origin	2-17
Moving Cursor to Next or Previous Word	2-17
Deleting Words	2-17
Operating in X.21/X.25 Network	2-18
X.21/X.25 Network Keys	2-18
Checking Response Time: Response Time Monitor	2-20
Using in Multiple Sessions	2-21
 Chapter 3. Operator Messages	 3-1
Summary of System Indicators	3-2
Readiness and System Connection	3-5
Do-not-enter	3-7
Communication Error Reminder	3-11
Response Time Monitor	3-13
Shift and Modes	3-14
Printer Status	3-15
Entry Assist Function	3-16
Error Indicator	3-17
Record/Play	3-18
 Chapter 4. Keyboard and key functions	 4-1

Quick Reference Table of Key Functions	4-2
Keyboard Control Keys	4-4
Typewriter Type Keys	4-7
Cursor Control Keys	4-10
Screen Control Keys	4-13
Local Function Keys	4-16
Test Keys	4-18
Host Function Keys	4-19
Entry Assist Function Keys	4-21
Response Time Monitor Key	4-23
APL On/Off Key	4-24
 Chapter 5. Problem Solving	 5-1
Problem Solving Initial Checks	5-1
Operator Messages	5-2
Problem Symptom	5-5
Alarm Problems	5-7
Display Problems	5-9
Keyboard Problems	5-19
Power-on Light Problem	5-22
Printer Problem	5-25
Mechanical Problems	5-27
Keyboard Test	5-28
Logic Element Check Procedure	5-31
Request for Service	5-33
ECCO (for the U.S. only)	5-34
Removal and Packing	5-35
Display Station Element Removal	5-35
Packing Display Station Element	5-40
 Appendix A. Display Station Controls and Adjustments	 A-1
Panel Operation Rules	A-2
Customization	A-3
Serial Number	A-5
Display Setup	A-8
Test Display Station (Record/Play Options)	A-11
 Appendix B. Printer Controls and Adjustments	 B-1
Panel Operation Rules	B-2
Customization	B-2
Printer Setup	B-5
Printer Control	B-7
Host Addressable Print Options	B-8
Print Controls	B-8
 Appendix C. Keyboard Layouts	 C-1
 Glossary	 X-1
 Index	 X-5

Figures

2-1.	IBM InfoWindow 3472	2-1
2-2.	Contrast Control	2-2
2-3.	Viewing Angle Adjustment	2-3
2-4.	Record Operation	2-8
2-5.	Play Operation	2-8
2-6.	Word Wrap to the Next Line	2-15
2-7.	Word Wrap in Insert Mode	2-16
2-8.	Scale Line Starting From 1	2-17
2-9.	Scale Line Starting From 0	2-17
2-10.	Control Unit Pre-defined Connection Modes	2-19
2-11.	User Specified Connection Modes	2-19
3-1.	Operator information area	3-1
4-1.	122-key Typewriter keyboard layout (U.S. English)	4-1
4-2.	IBM Enhanced keyboard layout (U.S. English)	4-1
5-1.	Operator Information Area and Separator Line	5-1
B-1.	Automatic New Line	B-8
B-2.	Automatic New Line Suppressed (CR at Max + 1)	B-9
B-3.	Automatic New Line Not Suppressed (CR at Max + 1)	B-9
B-4.	Automatic New Line Suppressed (NL at Max + 1)	B-9
B-5.	Automatic New Line Not Suppressed (NL at Max + 1)	B-10
C-1.	Austrian/German 122-key Keyboard	C-2
C-2.	Austrian/German IBM Enhanced Keyboard	C-2
C-3.	Austrian/German Data Entry Keyboard	C-2
C-4.	Austrian/German APL Keyboard	C-3
C-5.	Belgian 122-key Keyboard	C-3
C-6.	Belgian IBM Enhanced Keyboard	C-3
C-7.	Belgian APL Keyboard	C-4
C-8.	Canadian-Bilingual 122-key Keyboard	C-4
C-9.	Canadian-Bilingual IBM Enhanced Keyboard	C-4
C-10.	Canadian-Bilingual APL Keyboard	C-5
C-11.	Danish 122-key Keyboard	C-5
C-12.	Danish IBM Enhanced Keyboard	C-5
C-13.	Danish Data Entry Keyboard	C-6
C-14.	Danish APL Keyboard	C-6
C-15.	Dutch IBM Enhanced Keyboard	C-6
C-16.	Finnish/Swedish 122-key Keyboard	C-7
C-17.	Finnish/Swedish IBM Enhanced Keyboard	C-7
C-18.	Finnish/Swedish Data Entry Keyboard	C-7
C-19.	Finnish/Swedish APL Keyboard	C-8
C-20.	French AZERTY 122-key Keyboard	C-8
C-21.	French AZERTY IBM Enhanced Keyboard	C-8
C-22.	French AZERTY Data Entry Keyboard	C-9
C-23.	French AZERTY APL Keyboard	C-9
C-24.	Italian 122-key Keyboard	C-9
C-25.	Italian IBM Enhanced Keyboard	C-10
C-26.	Italian Data Entry Keyboard	C-10
C-27.	Italian APL Keyboard	C-10
C-28.	Japanese Katakana 124-key Keyboard	C-11
C-29.	Japanese Katakana IBM Enhanced Keyboard	C-11
C-30.	Japanese Katakana APL Keyboard	C-11
C-31.	Latin American Spanish 122-key Keyboard	C-12
C-32.	Latin American Spanish IBM Enhanced Keyboard	C-12

C-33.	Latin American Spanish APL Keyboard	C-12
C-34.	Norwegian 122-key Keyboard	C-13
C-35.	Norwegian IBM Enhanced Keyboard	C-13
C-36.	Norwegian Data Entry Keyboard	C-13
C-37.	Norwegian APL Keyboard	C-14
C-38.	Portuguese 122-key Keyboard	C-14
C-39.	Portuguese IBM Enhanced Keyboard	C-14
C-40.	Portuguese Data Entry Keyboard	C-15
C-41.	Portuguese APL Keyboard	C-15
C-42.	Spanish 122-key Keyboard	C-15
C-43.	Spanish IBM Enhanced Keyboard	C-16
C-44.	Spanish APL Keyboard	C-16
C-45.	Swiss-French 122-key Keyboard	C-16
C-46.	Swiss-French IBM Enhanced Keyboard	C-17
C-47.	Swiss-French APL Keyboard	C-17
C-48.	Swiss-German 122-key Keyboard	C-17
C-49.	Swiss-German IBM Enhanced Keyboard	C-18
C-50.	Swiss-German APL Keyboard	C-18
C-51.	U.K. English 122-key Keyboard	C-18
C-52.	U.K. English IBM Enhanced Entry Keyboard	C-19
C-53.	U.K. English Data Entry Keyboard	C-19
C-54.	U.K. English APL Keyboard	C-19
C-55.	U.S. English 122-key Keyboard	C-20
C-56.	U.S. English IBM Enhanced Keyboard	C-20
C-57.	U.S. English 122-key Data Entry Keyboard	C-20
C-58.	U.S. English APL Keyboard	C-21
C-59.	U.S. English 104-key Keyboard	C-21

Chapter 1. Setup Instructions

No tools are needed in setting up your display station. If you have any problem in setting up the display station, see Chapter 5, "Problem Solving" on page 5-1.

Note: Packing material may be required if you relocate or require service on the display station. New packing material can be purchased from IBM if needed.

DANGER

To avoid shock hazard:

- The power cord must be connected to a properly wired and grounded receptacle.
- Any equipment to which this product will be attached must also be connected to properly wired receptacles.
- Any cables should not be connected or disconnected during an electrical storm.
- Installation, maintenance, or reconfiguration should not be performed during an electrical storm.

CAUTION:

When the logic element requires disposal, do not handle it as normal trash, because the logic element contains a lithium battery (3 V, 500 mAh, UL¹ recognized component or equivalent). The lithium battery contains less than 150 mg of lithium and can be harmful to people and may explode if not properly used, handled, or disposed of, such as; (1) thrown into water, (2) overheated to more than 100°C (212°F), or (3) attempting to recharge, repair, or disassemble. When disposing of the logic element, follow your company's safety procedures or local procedures, which define the disposal of such items.

UL/CSA Statement

For use only with UL listed and CSA² certified display elements. The display element part numbers are as follows:

Part Number	Description	Part Number	Description
69X8052	14-inch green	69X8053	14-inch amber-gold
39F7426	15-inch green	16F1200	14-inch color

The above UL/CSA statement applies only to those machines used in the U.S. and Canada.

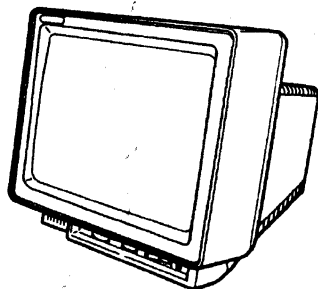
¹ Registered trademark of Underwriters Laboratories Inc.

² Canadian Standard Association

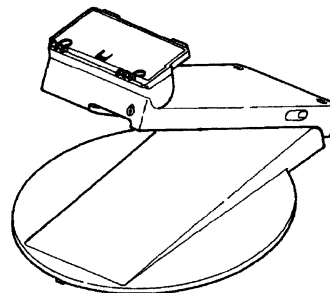
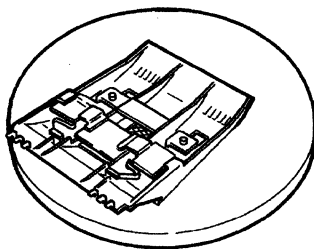
Check Parts

Check each box ☐ as you unpack and identify each item. If any are missing, call your IBM marketing representative.

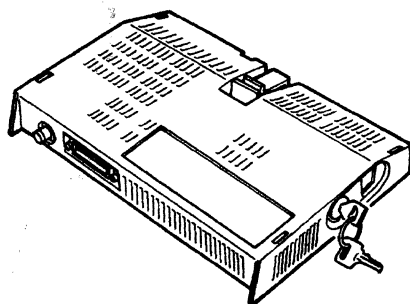
☐ Display Element



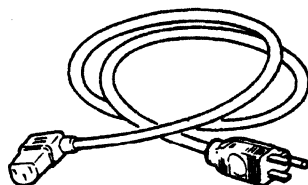
☐ Stand or Lift-Stand³



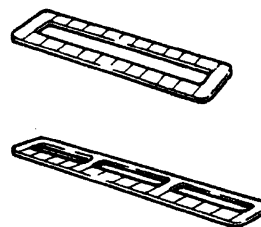
☐ Logic Element and Security Key⁴



☐ Power Cord



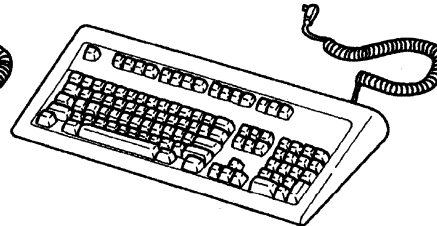
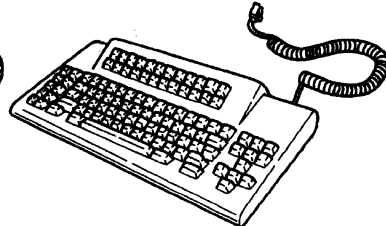
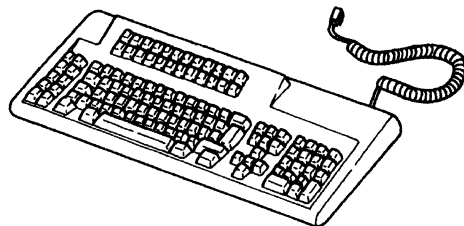
☐ Keyboard Overlay



☐ keyboard

or

or



122/124-key Keyboard

104-key Keyboard⁵

IBM Enhanced Keyboard

³ Either of the two display stands is available depending upon the countries as shown:

Stand All the countries except European, Middle East, and African countries

Lift-stand European, Middle East, and African countries

⁴ The security keys are not be inserted as shown. Detach one key and store it in a safe place.

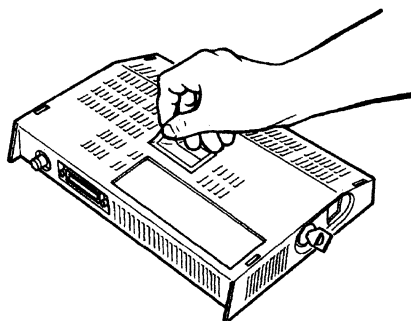
⁵ The 104-key keyboard is available in the U.S. and Canada.

Attach RID (Repair Identification) Tags

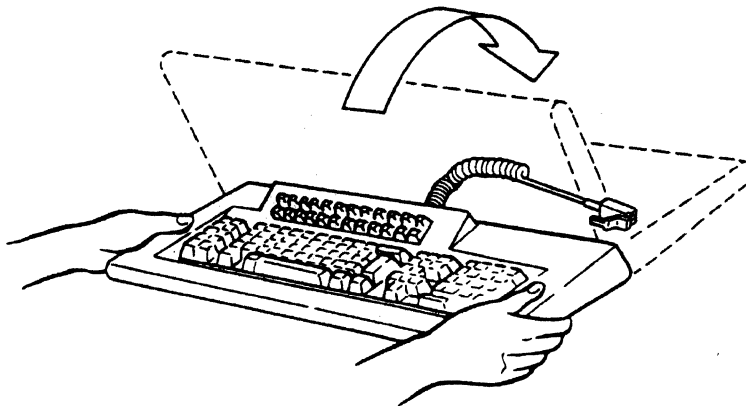
Note to the reader

For the U.S. customers, go to “Attach Logic Element to Display Element” on page 1-5.

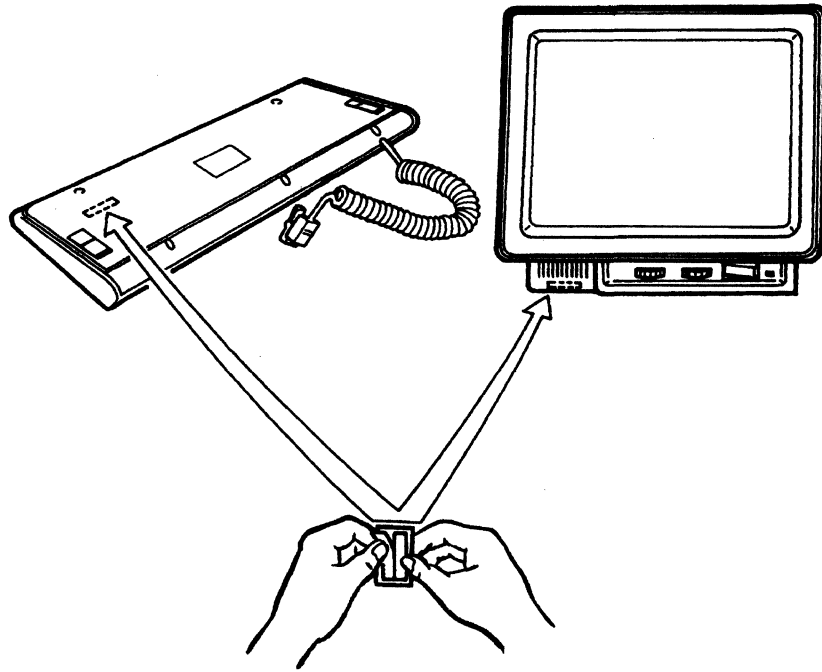
- 1 Tear off the tags from the bottom of the logic element.



- 2 Turn the keyboard upside down.



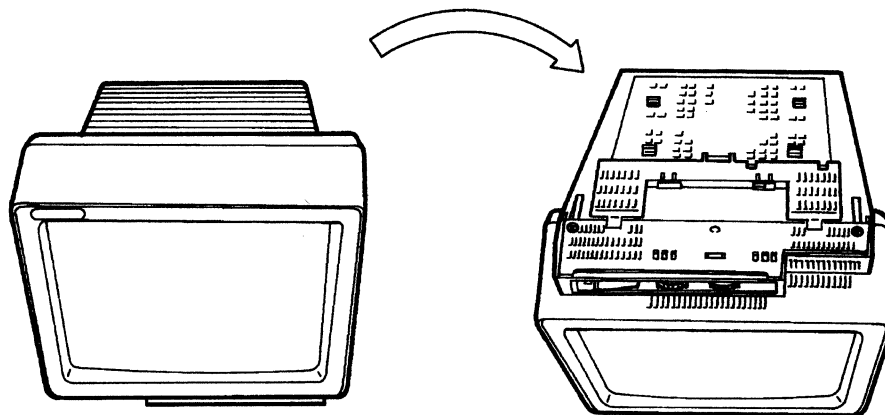
- 3 Peel off the tags and place one on each of the parts as shown.



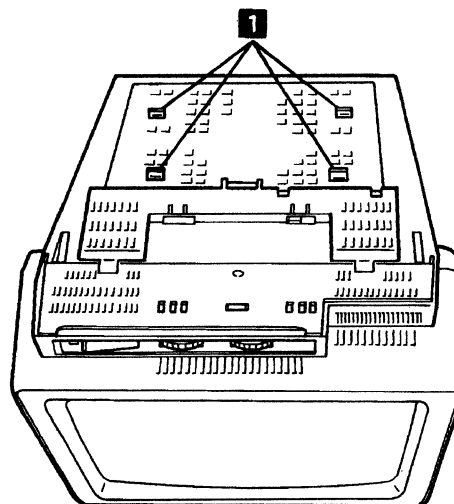
IMPORTANT: If you do not attach the tags, there may be a substantial delay in obtaining service due to the time required by IBM to determine the unit's maintenance status.

Attach Logic Element to Display Element

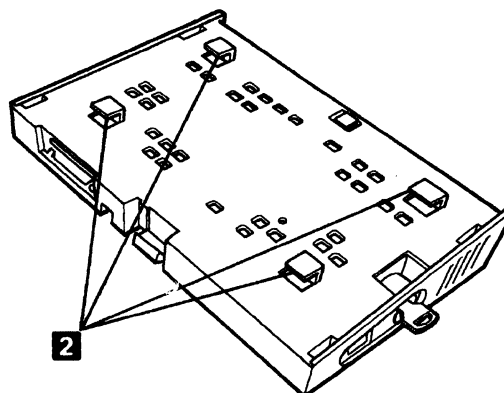
- 1 Turn the display element upside down so that the screen faces you.



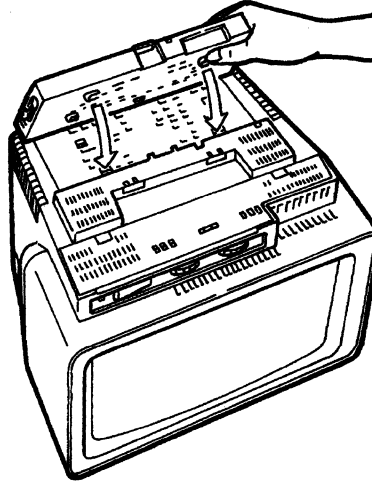
- 2 Locate the four slots **1** of the display element.



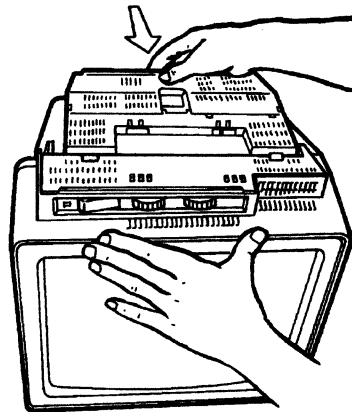
- 3 Locate the four hooks **2** of the logic element.



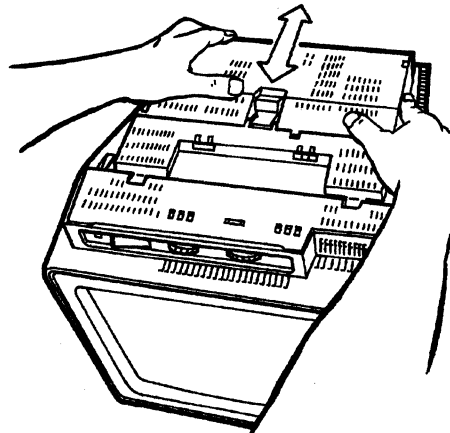
- 4 Insert the four hooks of the logic element into the four slots of the display element.



- 5 While holding the top edge of the front side of the display element, pull the logic element toward you until the logic element snaps into place.



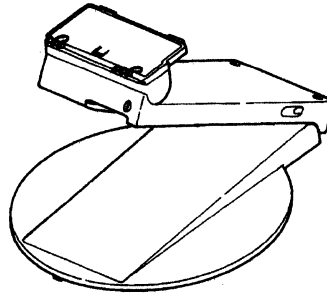
- 6 Make sure the logic element is locked onto the display element by moving the logic element forward and backward.



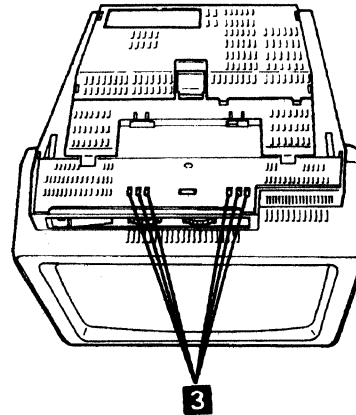
Attach Stand to Display Element

Note to the reader

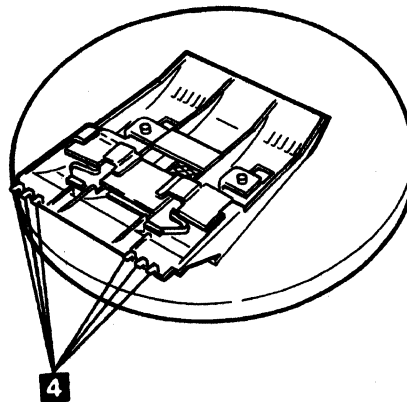
If you are attaching the lift-stand, go to “Attach Lift-stand to Display Element” on page 1-10.



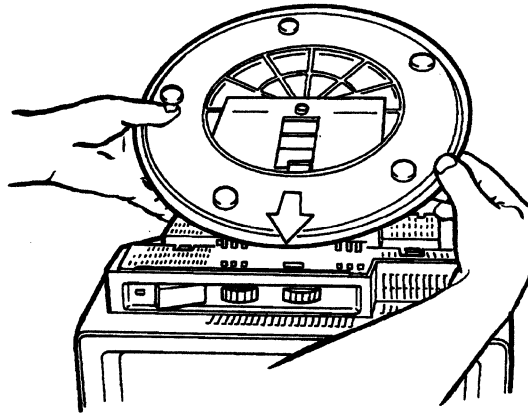
- 1 Locate the six slots **3** of the display element.



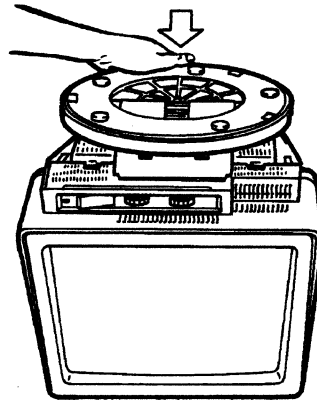
- 2 Locate the six hooks **4** of the stand.



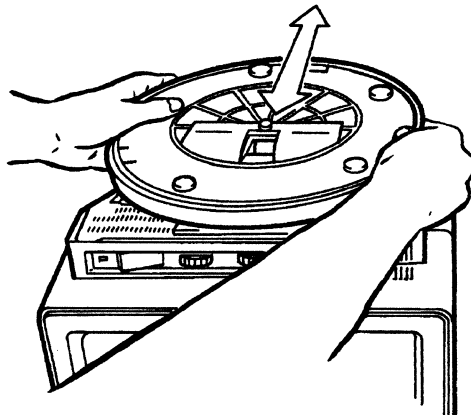
- 3 Insert the six hooks of the stand into the six slots of the display element.



- 4 Push the edge of the stand down.

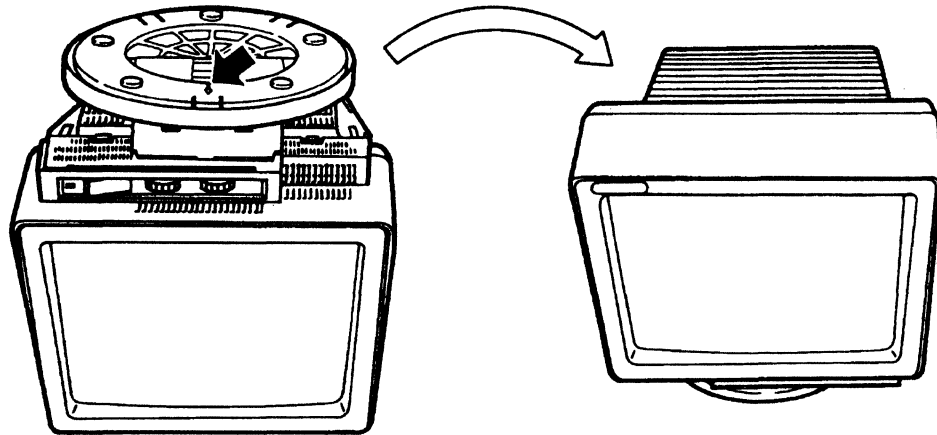


- 5 Make sure the stand is locked onto the display element by moving the stand forward and backward.

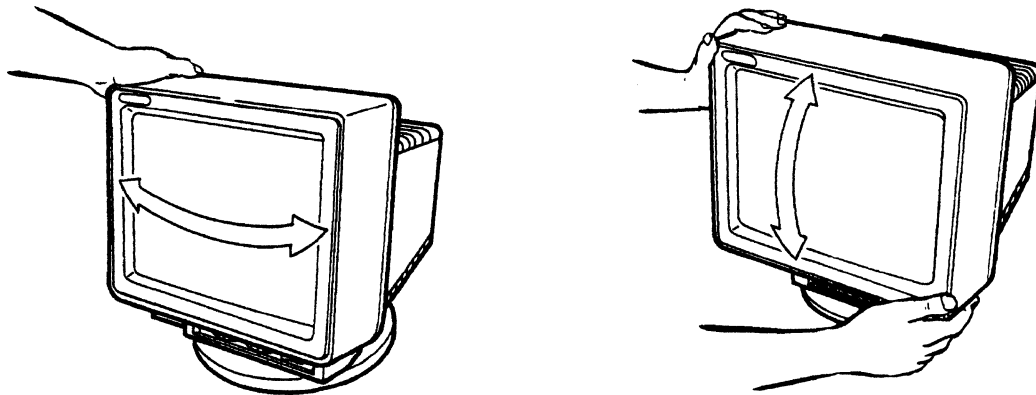


6 Turn the display element right side up.

Note: Make sure that the arrow mark at the bottom of the stand is indicating the front of the display element.



7 Adjust the viewing angle by rotating and tilting the display element.



8 Go to “Connect Keyboard Cable” on page 1-15.

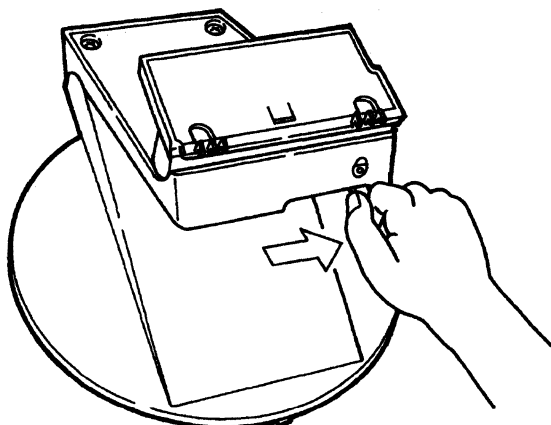
Attach Lift-stand to Display Element

- 1 The lift-stand tension is pre-set for either monochrome or color display models. Make sure that you have the correct lift-stand for your display.

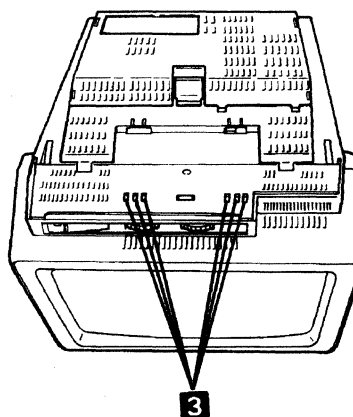
Lift-stand for monochrome display element: Part number 6398220

Lift-stand for color display element: Part number 6398210

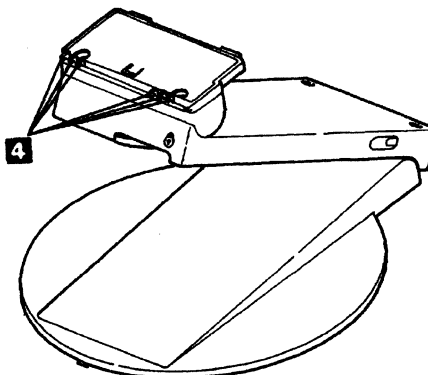
- 2 Lock the lock-lever of the lift-stand.



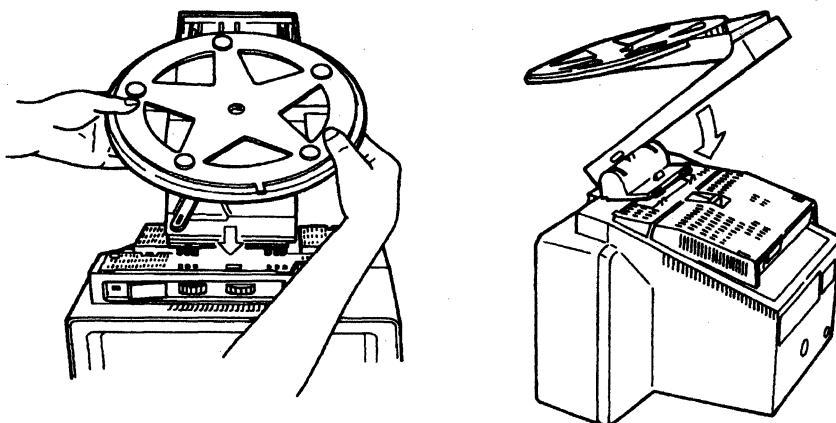
- 3 Locate the six slots **3** of the display element.



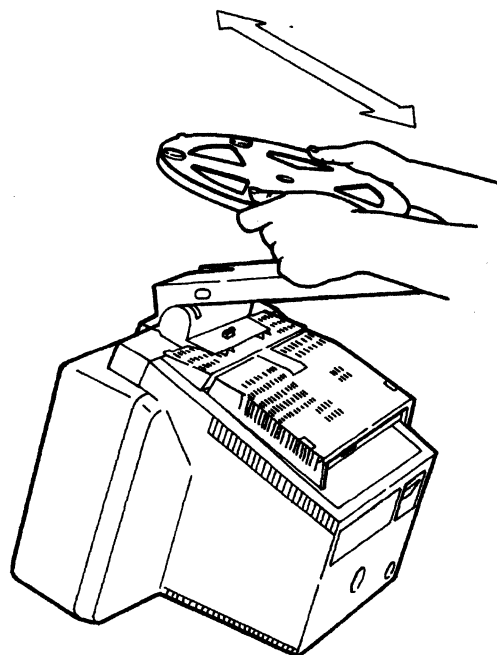
- 4 Locate the six hooks **4** of the stand.



- 5 Insert the six hooks of the stand into the six slots of the display element and place the stand on the display element. You should hear a click sound when the stand is locked onto the display element.

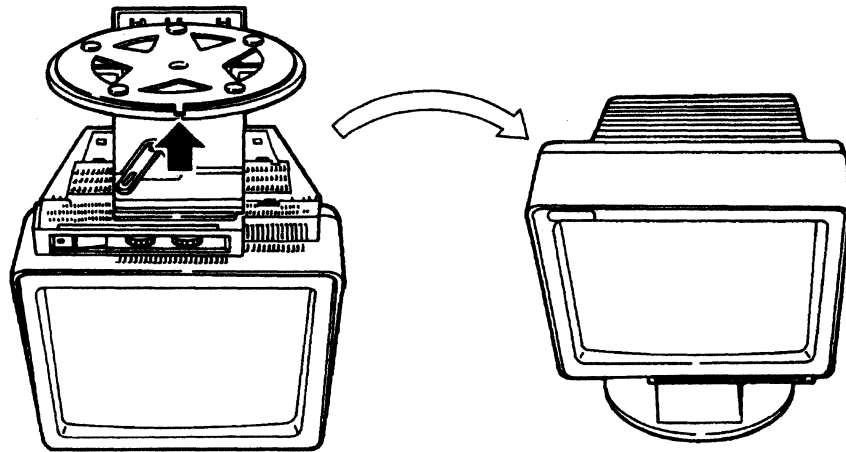


- 6 Make sure the stand is locked onto the display element by moving the stand forward and backward.

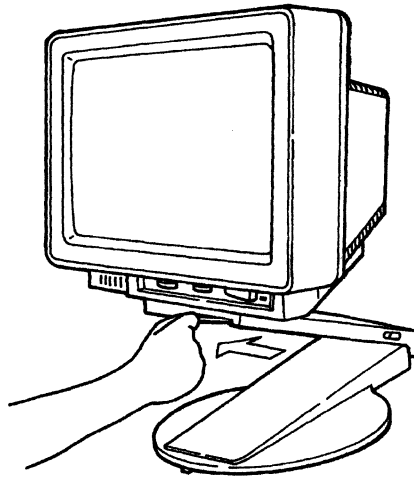


- 7 Turn the display element right side up.

Note: Make sure that the notch at the bottom of the stand is indicating the front of the display element.

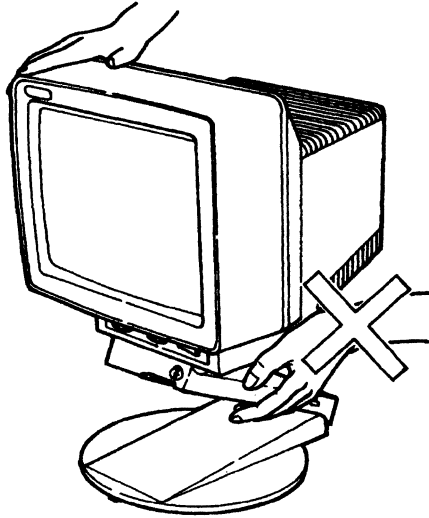


- 8 Release the lock-lever of the lift-stand.

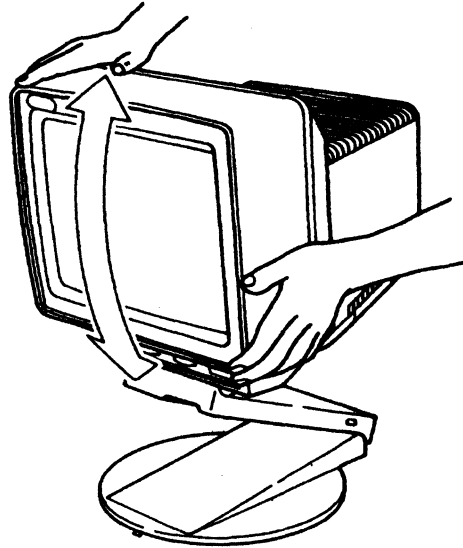


CAUTION:

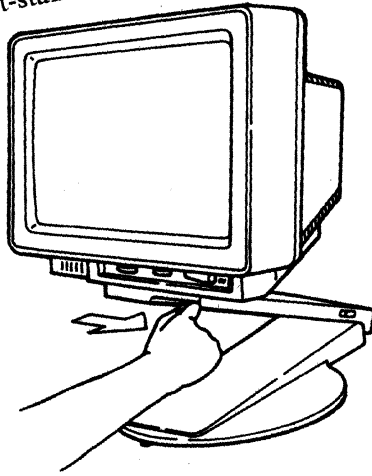
When you adjust the height of the display element, be careful not to pinch your fingers.



- 9 Adjust the height and viewing angle of the display element.

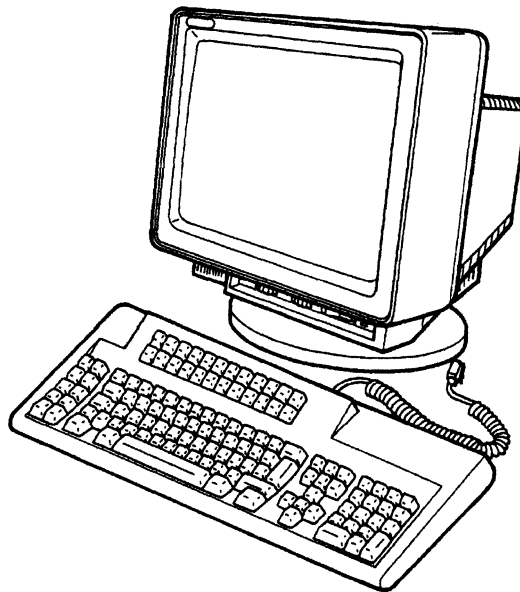


10 Lock the lock-lever of the lift-stand.

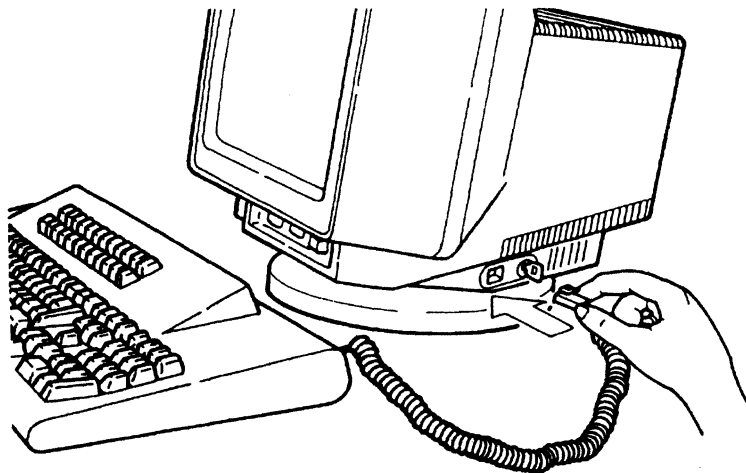


Connect Keyboard Cable

- 1 Place the keyboard in front of the display element.

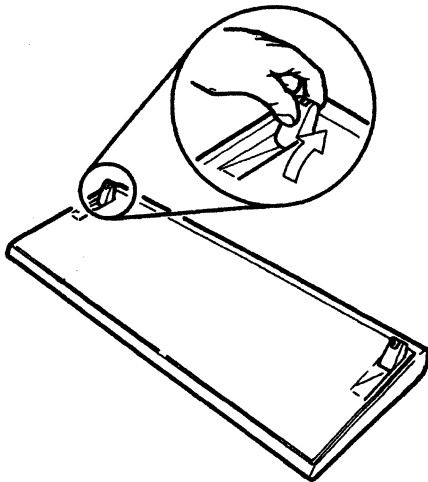


- 2 Insert the keyboard cable into the logic element.

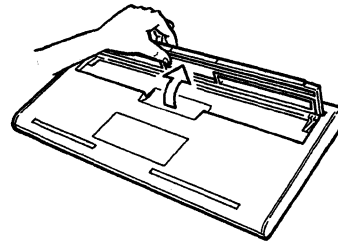


Personalize Display Station

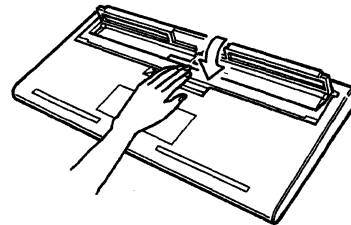
- 1 Adjust the keyboard angle.



122/124-key and IBM Enhanced keyboard

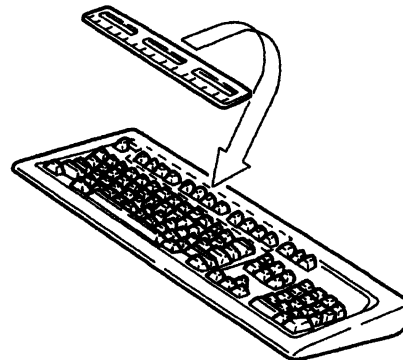
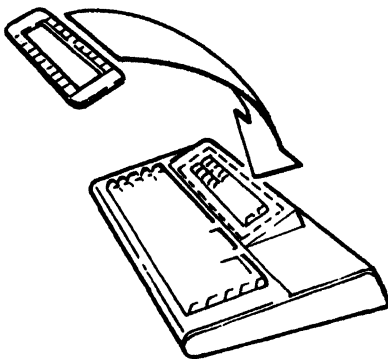


104-key keyboard (High Position)



104-key keyboard (Low Position)

- 2 Place the keyboard overlay over the keys.

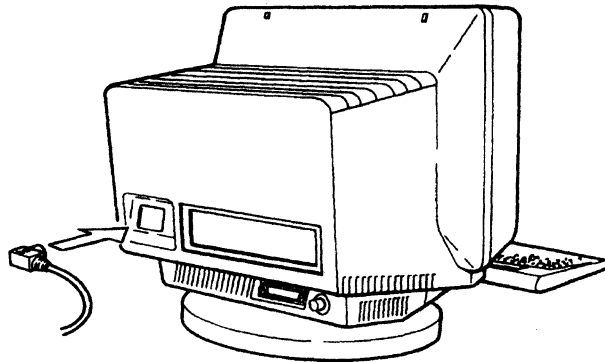


Apply Power to Display Station

- 1 Make sure the power switch is set to Off.



- 2 Insert the power cord into the display element as shown.

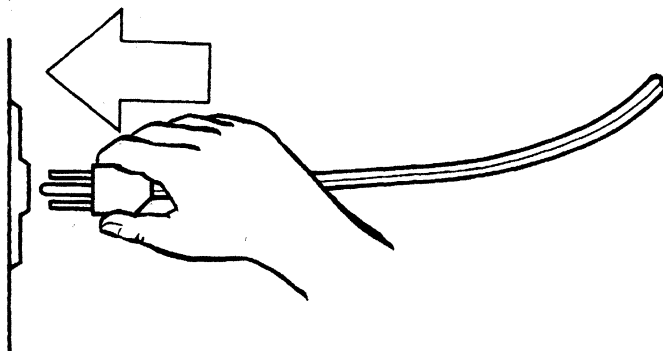


DANGER

An incorrect wired outlet or plug can place hazardous voltage on accessible metal parts of this display station. The power cord and plug (when supplied) on your display station have been approved for use with this display station and meet the necessary testing laboratory/test house standards. For your safety, the power cord and plug must be connected to a correctly wired and grounded outlet. The customer is responsible for the outlet and plug wiring.

If it becomes necessary to change the power cord or plug, or if the outlet is incorrectly wired, have the change made by a qualified electrician according to local or national code. A new power cord may be ordered from your IBM marketing representative.

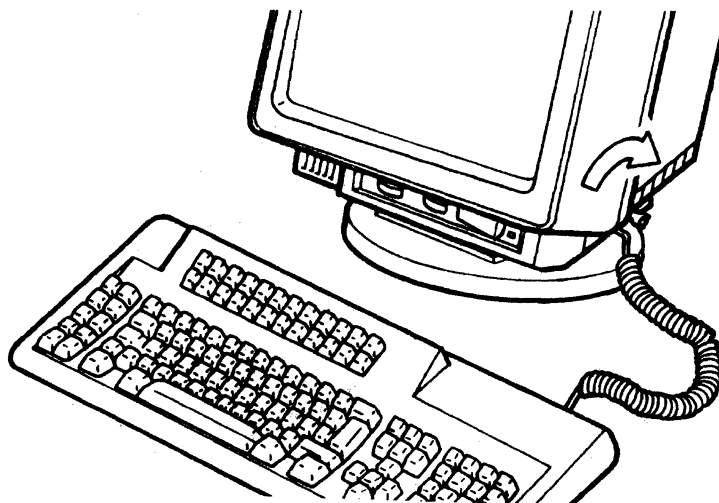
- 3 Plug the power cord into an electrical outlet.



Notice for Customers in Chicago, Illinois

Two different lengths of power cords, 1.8 m (5.9 ft) and 2.8 m (9.2 ft), are shipped with the display station. Use the 1.8 m (5.9 ft) length power cord.

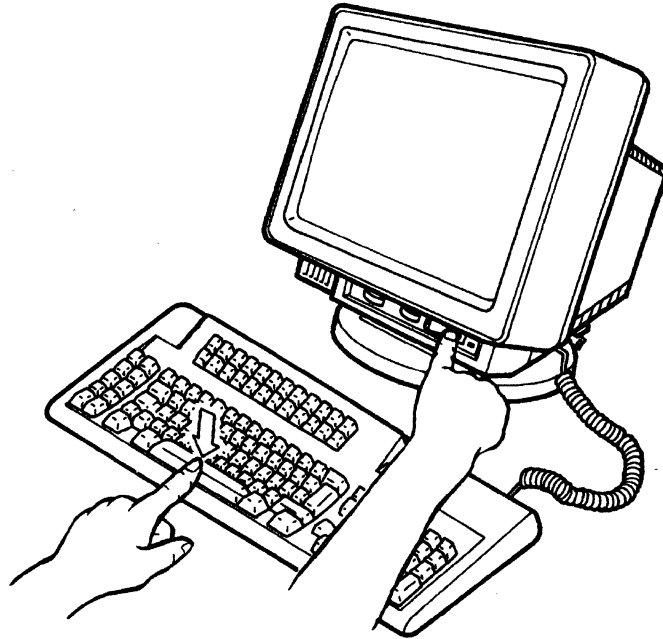
- 4 Make sure the security key is turned clockwise.



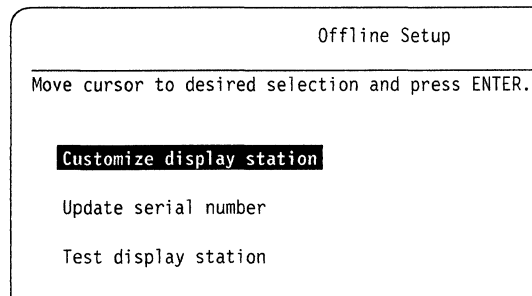
Adjust Screen Brightness

- 1 Press and hold the space bar, then set the power switch to On. The power-on light should turn on, and you will hear the audible alarm.

IMPORTANT: Hold the space bar down until the offline setup panel appears.



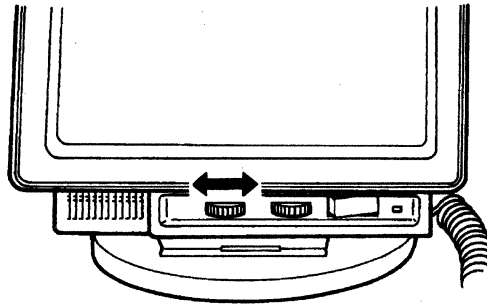
“Offline Setup” panel appears on the screen.



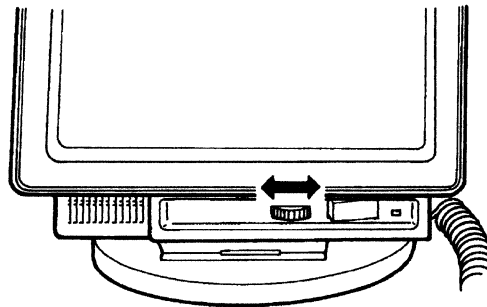
Note: A quick power-off and power-on sequence may cause the machine not to function correctly. If this happens, set the power switch to Off, wait for a few seconds, then set it back to On. If you have any problem in setting up the display station, see Chapter 5, “Problem Solving” on page 5-1.

- 2 Turn this knob right to brighten or left to darken the screen.

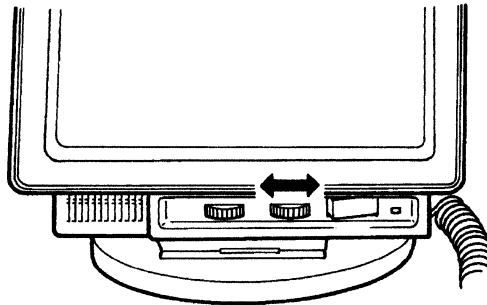
Monochrome Model



Color Model



- 3 Turn this knob to adjust the contrast (monochrome model only).

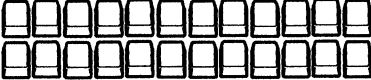


Note: Adjusting the contrast so that there is a difference between the normal and high intensity is recommended.

Obtaining Setup Sheet

- 1 Obtain a copy of the setup sheet from the person who is responsible for installing the display station. Make sure that you have the setup values (Screen rows x columns, Keyboard layout, and the Numeric lock Yes/No) information that are written on the Setup Sheet.

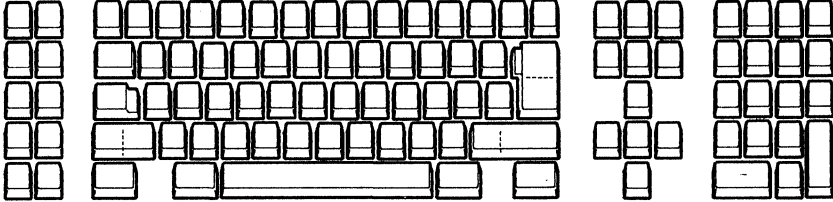
Setup Sheet



Numeric Lock ☐ On ☐ Off

Screen Rows x Columns (3472 only):

Keyboard Layout (Type):



To the supervisor:

1. Take a copy this sheet before you fill it out. Make one copy for each display station that you will install.
2. Fill in the appropriate setup value settings.
3. Fill in the keys that you are going to change. (if applicable)
4. Give each completed sheet to the person who will setup the display station.

Set Setup Values

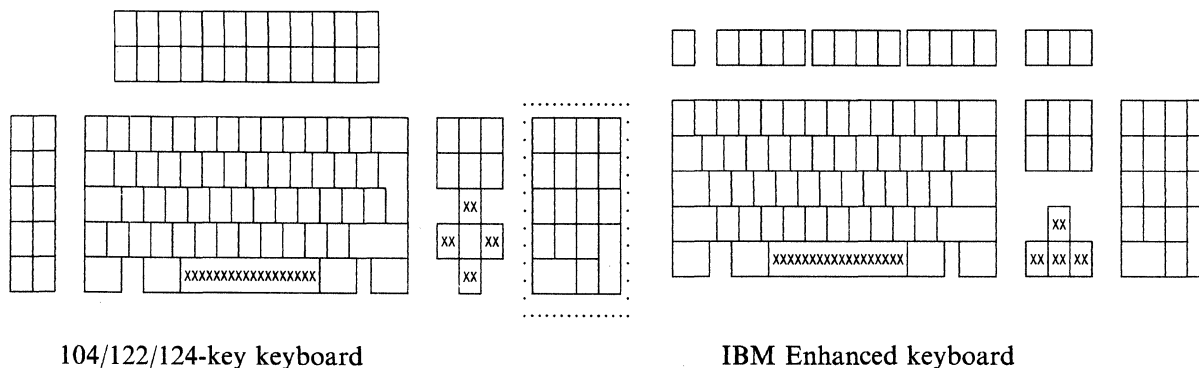
- 1 In the "Offline Setup" panel, press the Enter key to select "Customize display station"; the "Customization" panel appears on the screen.

Customization				
Move cursor to desired choice, then press SPACE BAR to select.				
Screen rows x columns . .	24 x 80	32 x 80	43 x 80	27
Keyboard layout	Standard	APL	DataEntry	78
	User1	User2	User3	Us
Numeric lock	Yes	No		

Note: If the IBM Enhanced keyboard is attached to your display station, "APL", "DataEntry", and "78EMU" do not appear on the screen.

- 2 Refer to the Setup Sheet and, if necessary, change the selection of "Screen rows x columns", "Keyboard layout", and "Numeric lock". To change the selection, move the selection bar (reversed area) with the cursor move keys (→, ←, ↓, and ↑) and press the space bar to make the selection.

Note: After the selection the selected item will be highlighted for the monochrome models, or the color of the item is changed to yellow for the color models.

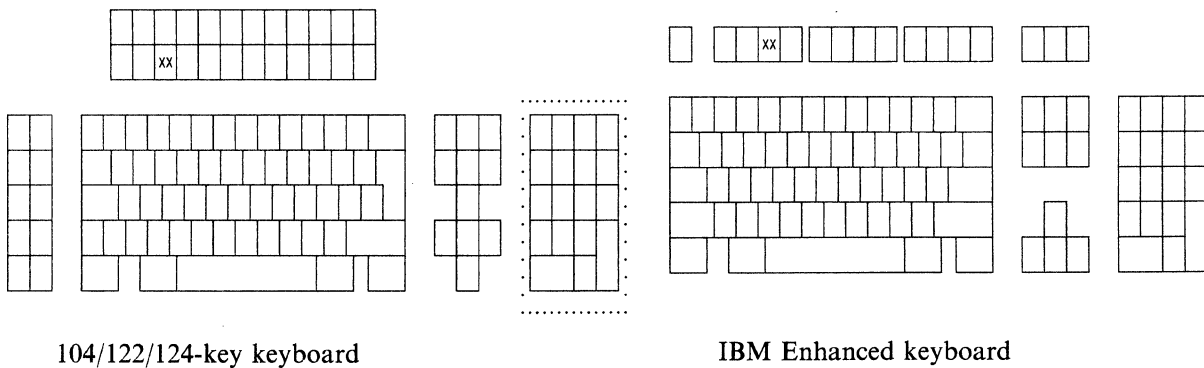


3 Enter the checkmarks ☐ below, and keep this data for your future reference.

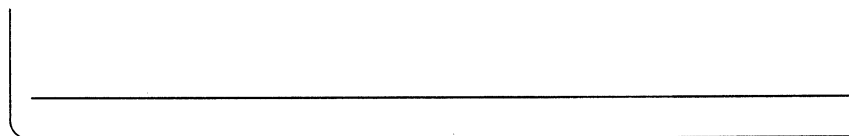
Screen rows x columns	<input type="checkbox"/> 24 x 80	<input type="checkbox"/> 32 x 80	<input checked="" type="checkbox"/> 43 x 80	<input type="checkbox"/> 27 x 132
Keyboard layout	<input type="checkbox"/> Standard	<input type="checkbox"/> APL	<input type="checkbox"/> DataEntry	<input type="checkbox"/> 78EMU
	<input type="checkbox"/> User1	<input type="checkbox"/> User2	<input type="checkbox"/> User3	<input type="checkbox"/> User4
Numeric lock	<input type="checkbox"/> Yes	<input type="checkbox"/> No		

78EMU

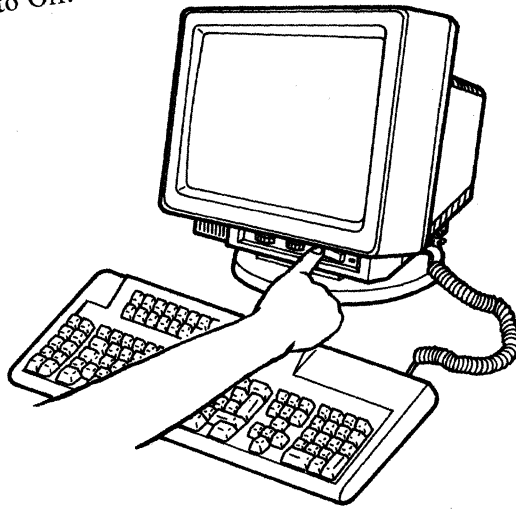
4 Press the F3 key to exit to “Customization” panel. The “Offline Setup” panel appears on the screen.



5 Press the F3 key again to exit from “Offline Setup” panel. The screen becomes blank except for the separator line.



6 Set the power switch to Off.



Connect Display Station to Host System

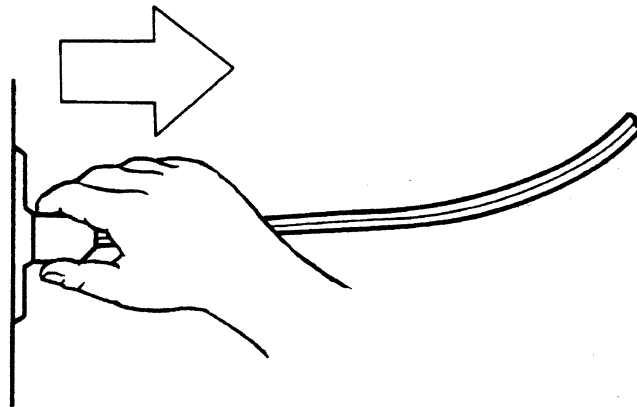
DANGER

**Do not connect or touch any communication cables during an electrical storm.
Communication cables can conduct lethal charge of electricity.**

- 1 Make sure that the power switch is set to Off.



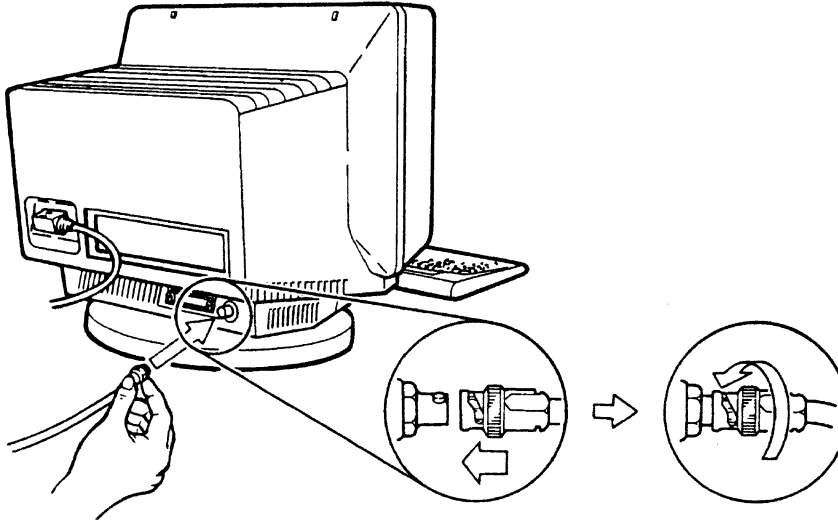
- 2 Unplug the power cord from the electrical outlet.



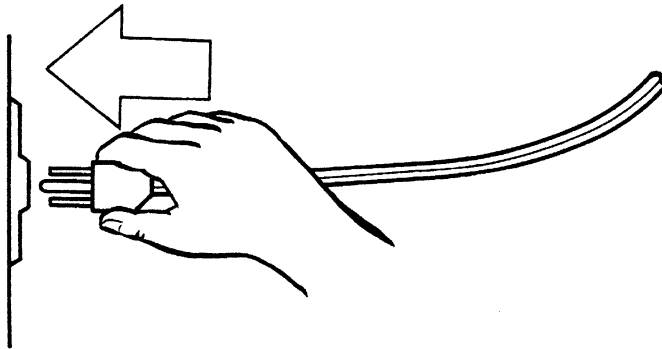
DANGER

To avoid the possibility of electrical shock, make certain that the display station is unplugged from the electrical outlet before connecting the communication cable between the display station and host system, or the workstation controller.

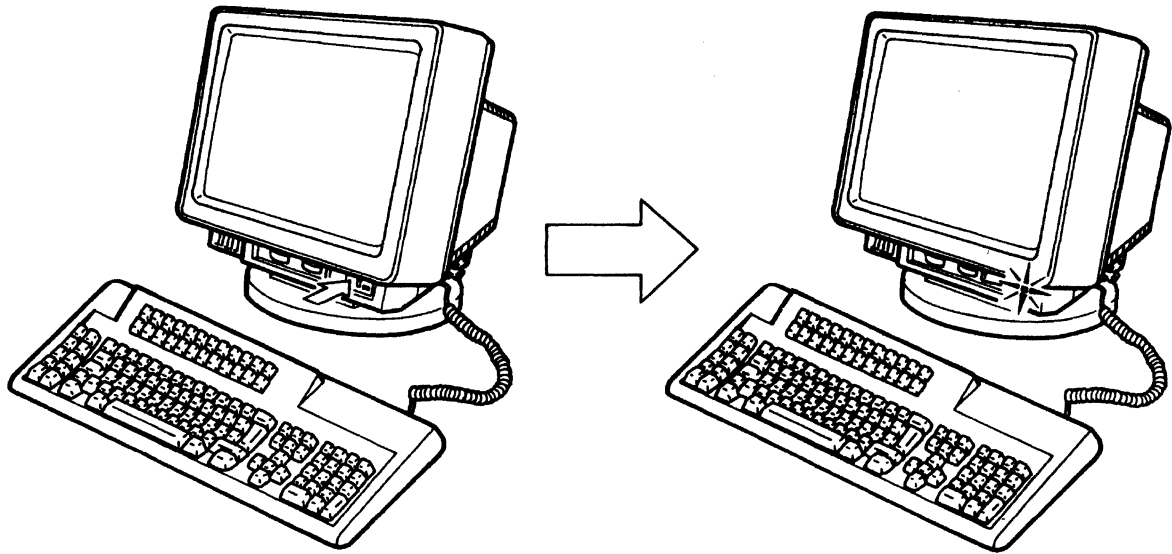
- 3 Insert the communication cable into the connector of the logic element, then turn it clockwise.



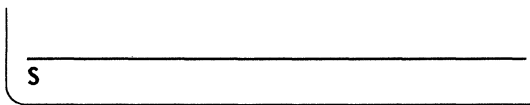
- 4 Plug the power cord into an electrical outlet.



- 5 Set the power switch to On. The power-on light will turn on, and you will hear the audible alarm.



- 6 Approximately five seconds later, check that one of the symbols: \square , N, I, i, T, C, 3814, 4700, or S appears on the bottom left of the screen.



Note: If either \square , N, I, i, T, C, 3814, 4700, or S does not appear, call the person responsible for the control unit or host system for assistance.

SETUP OF YOUR DISPLAY STATION IS NOW COMPLETE.

If a printer is to be connected to this display station, go to the next page.

Note: You can define various display station characteristics using the setup panels. Refer to Appendix A, "Display Station Controls and Adjustments" on page A-1.

Connect Printer

Note: Information for attached printers can be obtained from the sales representatives.

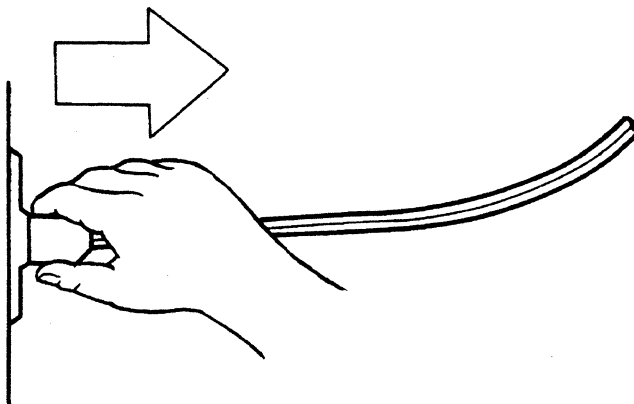
- 1 Make sure the power switches of the display station and the printer are set to Off.



DANGER

To avoid the possibility of electrical shock, make certain the display station and the attaching printer are both unplugged from the electrical outlet before attaching the printer to the display station.

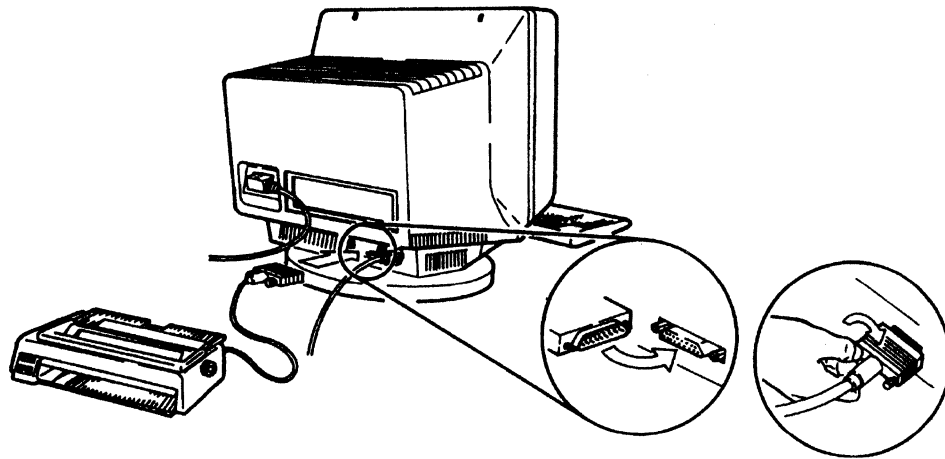
- 2 Unplug the power cord from the electrical outlet.



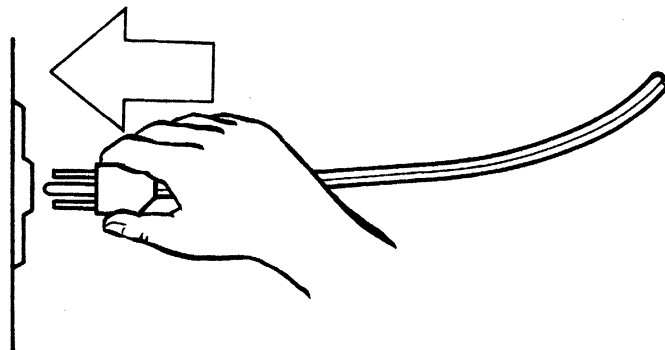
Note: For setup and operation of your printer, refer to the printer instruction manual.

- 3 Insert the printer cable into the logic element, then tighten the screws.

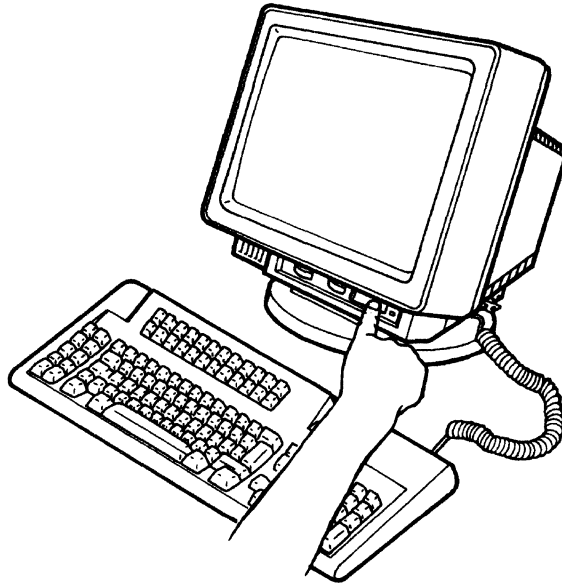
Note: When inserting, check the shape of both connectors to match correctly.



- 4 Plug the power cords of the display station and printer into an electrical outlet.



- 5 Set the power switches of the display station and the printer to On.



SETUP OF YOUR DISPLAY STATION IS NOW COMPLETE.

Note: To use the printer, you need to define your printer in the setup panel. Refer to Appendix B, “Printer Controls and Adjustments” on page B-1. You can define various display station characteristics using the setup panels. Refer to Appendix A, “Display Station Controls and Adjustments” on page A-1.

Chapter 2. Operations

When you encounter a problem during the operation of the display station, refer to Chapter 5, "Problem Solving" on page 5-1.

Powering-On

The following steps show how to start operations with the display station.

1. Unlock the security key **1** by turning it clockwise.

The security key prevents the entry, change, or viewing of the display station's data.

2. Turn the power switch **2** to On.

This switch applies the power to the display station and the Power-on light **3** comes on.

Note: A quick power Off/On sequence may cause problems with the display station. After powering off, you should wait for a few seconds before you power on again.

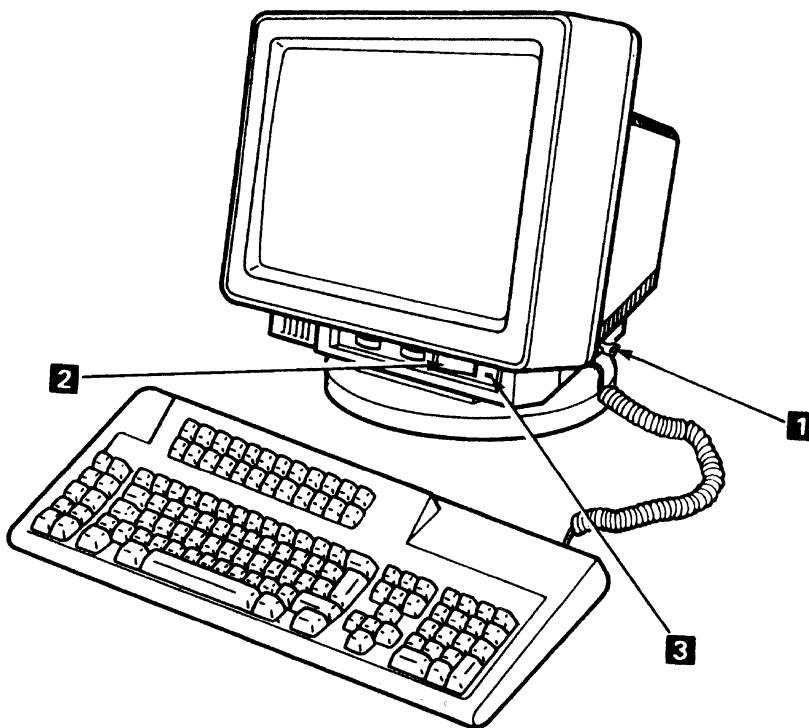


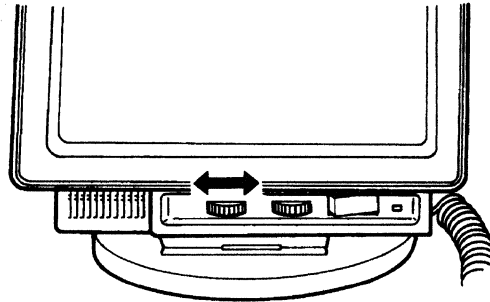
Figure 2-1. IBM InfoWindow 3472

Personalizing Display Station

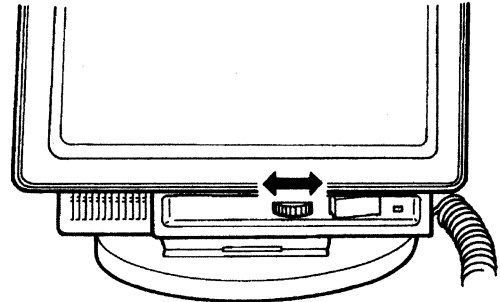
Screen Brightness

The brightness control knob adjusts the brightness of the characters on the screen. The characters on the screen get brighter when you turn this knob right.

Monochrome Model



Color Model



Screen Contrast

The contrast control knob adjusts the contrast between the intensified characters or fields and the normal ones of the monochrome display stations.

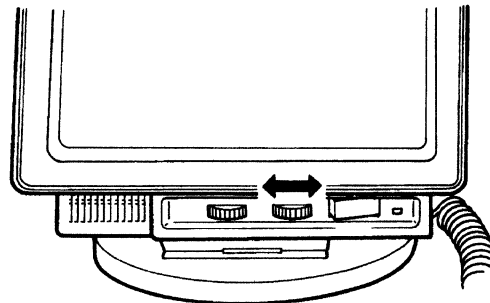


Figure 2-2. Contrast Control

Display Viewing Angle

You can adjust the viewing angle by rotating or tilting the display element.

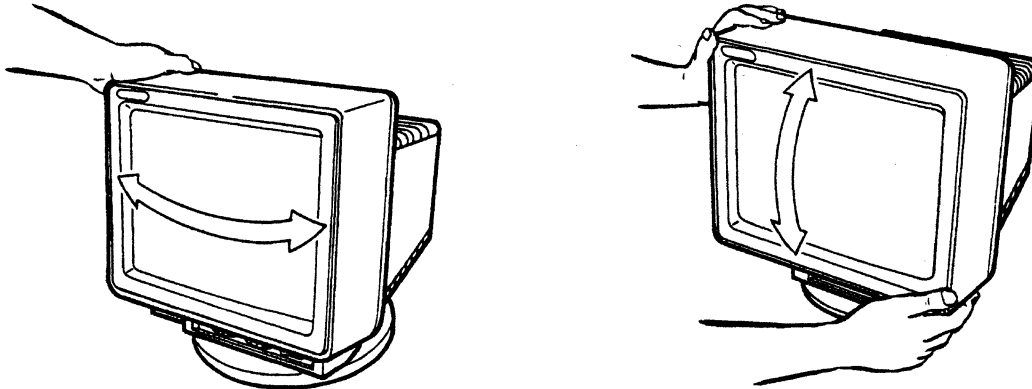


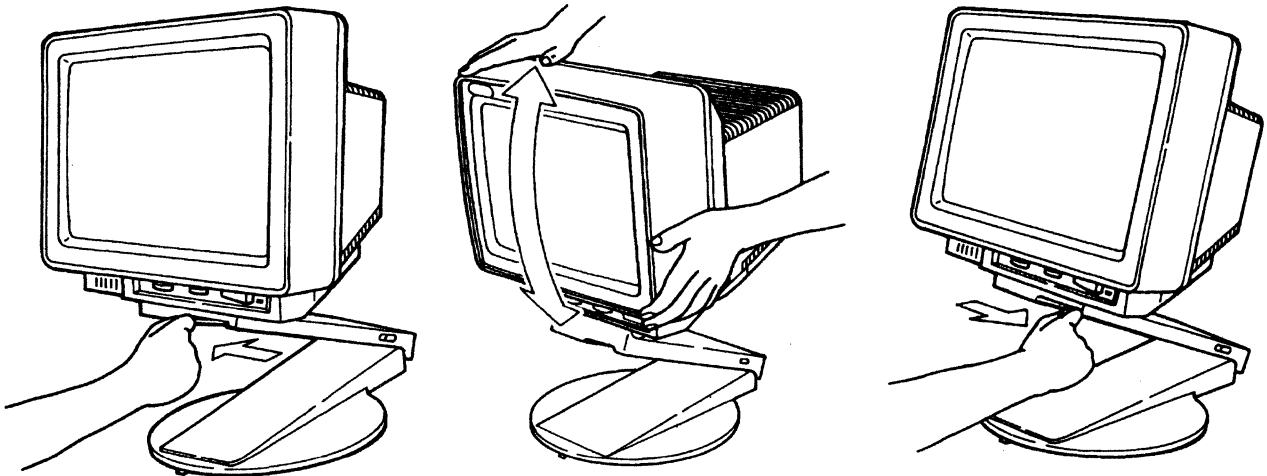
Figure 2-3. Viewing Angle Adjustment

If the lift-stand is attached, the display element can be lifted up or down.

Release lock-lever

Adjust viewing angle

Lock lock-lever



CAUTION:

When you adjust the height of the display element, be careful not to pinch your fingers.

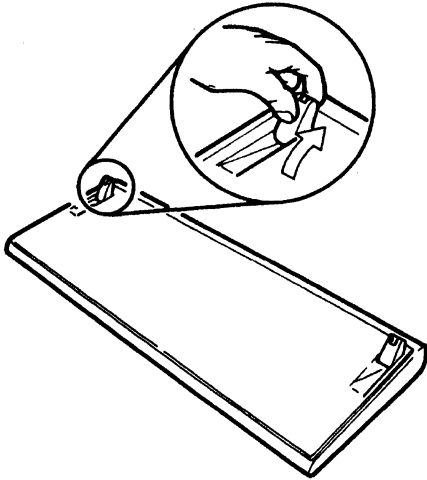
Keyboard Slope Adjustment

You can adjust the keyboard slope by:

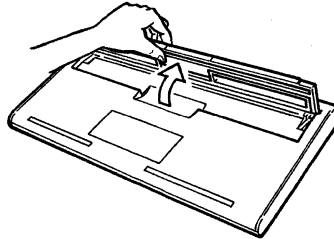
1. Lifting the back of the keyboard.
2. Pulling out the leg edges from the keyboard.
3. Pushing out the legs to lock them in place.

When you lock both legs underneath the keyboard, the keyboard sits flat.

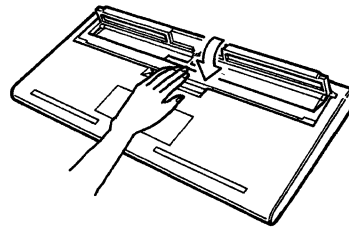
122/124-key and IBM Enhanced keyboards



104-key keyboard (high position)



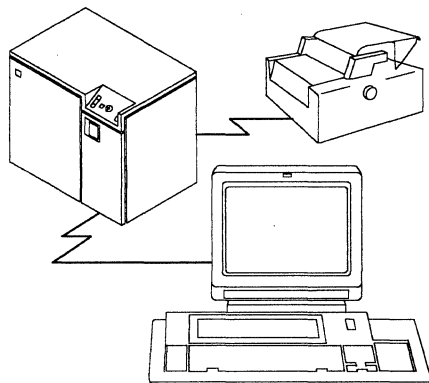
104-key keyboard (low position)



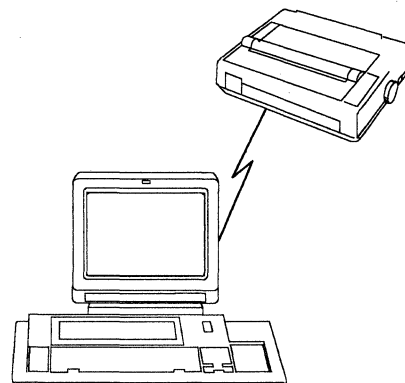
Printing Screen Contents

You can make a copy of your screen on the printer attached to the control unit or the display station. The printer attached to the control unit is called a subsystem printer. The printer attached to your display station is called a local printer. To select either the subsystem or local printer, refer to "Customization" on page A-3.

Subsystem Printer







Local Printer



The local printer can be defined as a host addressable printer with the appropriate control unit customization. The host application program can submit a print request to the local printer as well as to the subsystem printer. "Keyboard layout" must be set to other than "78EMU" for using the printer as a host addressable printer. Refer to "Customization" on page A-3 and consult with your system personnel when changing the keyboard layout ID.

Note: During the host addressable printing on the local printer, you should not attempt to make a screen copy, which would cause the screen contents to be inserted and printed in the host addressable print contents.

To make a screen copy, take the action shown in the following chart depending on the printer that is attached. If you have a problem while performing the following actions, refer to Chapter 5, "Problem Solving" on page 5-1 or Chapter 3, "Operator Messages" on page 3-1.

Printer	Action
Subsystem (whole screen only)	<ol style="list-style-type: none">1. Do you see  in the operator information area? Yes, go to the next step. No, press the Ident key while holding down the Alt key. If you do not see the message , refer to Chapter 3, "Operator Messages" on page 3-1. Otherwise, go to the next step.2. Do you see "99" at the right of ? Yes, the local printer is assigned to your display station. Change the printer ID to "Subsystem" in "Customization" on page A-3 and retry the operation. No, if you see a message other than a number at the right of , refer to Chapter 3, "Operator Messages" on page 3-1. Otherwise, go to the next step.3. Press the Print key to start printing.

Printer	Action
Local (whole screen)	<ol style="list-style-type: none"> Do you see □□99 in the operator information area? Yes, go to the next step. No, the local printer is not assigned to your display station. Set your local printer ID in "Customization" on page A-3 and retry the operation. Press the Print key. Do you see "PRINT SCRΝ" in the operator information area? Yes, go to the next step. No, press the F13 key. Go to the next step. Press the Enter key to start printing.
Local (partial screen)	<ol style="list-style-type: none"> Do you see □□99 in the operator information area? Yes, go to the next step. No, a local printer is not assigned to your display station. Set your local printer ID in "Customization" on page A-3 and retry the operation. Press the Print key. Do you see "PRINT TRIM" in the operator information area? Yes, go to the next step. No, press the F13 key. Go to the next step. Using the cursor move keys, move the top left corner of the rectangle to the desired position. <div data-bbox="430 816 1333 1115" data-label="Image"> </div> <ol style="list-style-type: none"> Press the CrSel key to determine the top left corner. Using the cursor move keys, move the bottom right corner of the rectangle to the desired position. <div data-bbox="430 1220 1333 1518" data-label="Image"> </div> <p>Note: Pressing the CrSel key moves the cursor to the opposite corner of the rectangle.</p> <ol style="list-style-type: none"> Press the Enter key to start printing.

Pressing the Quit key while pressing and holding down the Alt key cancels the printing. Refer to Appendix B, "Printer Controls and Adjustments" on page B-1 for more information about printer controls.

Recording and Playing Keystrokes

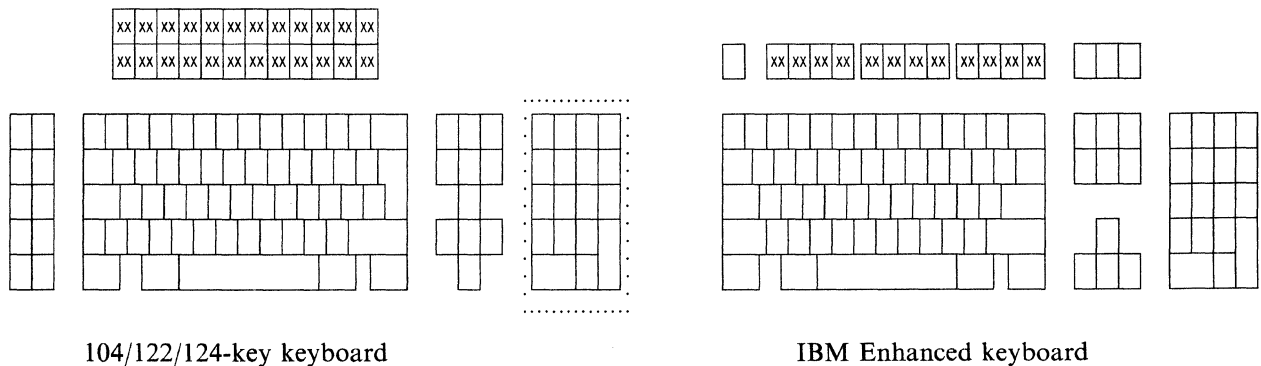
You can store a sequence of keystrokes in the Record-ID keys (see the shaded keys in the figure below) with the Record function. Approximately 4000 keystrokes including the shift keys and the cursor move keys can be recorded. The display station keeps the recorded keystrokes even when the display station is powered off. The display station tells you how many keystrokes can be recorded in record mode. After a sequence of the keystrokes have been recorded, you can replay the keystrokes with the Play function.

Note: If the Record/Play function needs to be restricted or disabled, refer to page A-11.

Notes:

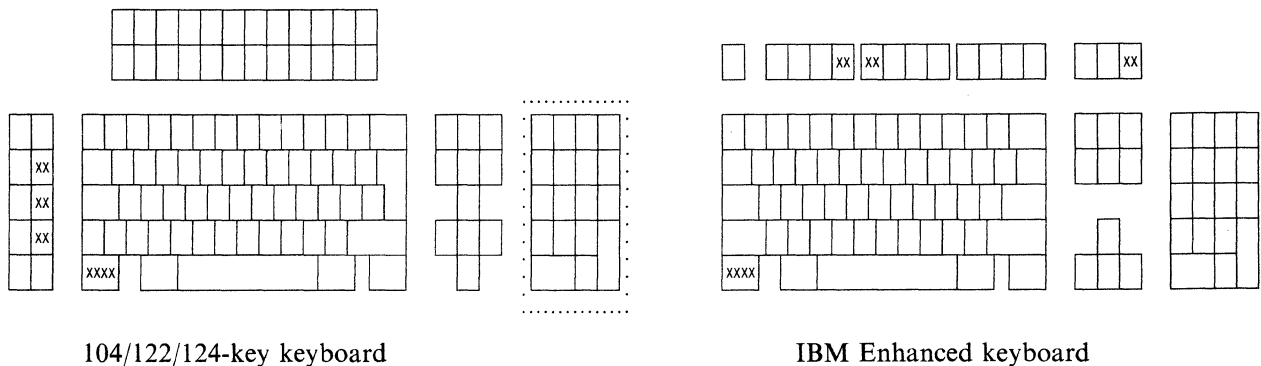
1. The local function keys (such as SetUp, Print, Recrd, and Play) cannot be recorded.
2. Replaying the recorded host function key may cause the loss of the later keystrokes because of the host communication.

The following figure shows the Record-ID keys that keystrokes can be assigned to.



“Sample Operation” on page 2-10 will help you to understand the operation.


Record Operation



To record a sequence of keystrokes:

1. Press the Record key.

A “R”, a number, and the indicator of Record-ID keys appear in the operator information area. You can use this key even when the Do-Not-Enter message

appears in the operator information area. The number indicates approximately how many keystrokes can be recorded. The symbol  indicates the Fn positions where the keystrokes were already assigned to.

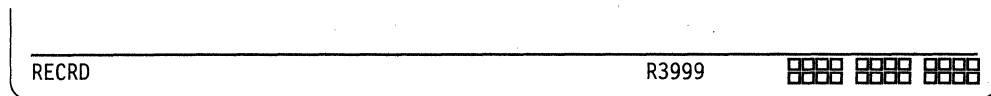




Figure 2-4. Record Operation

2. Press one of the following keys:
 - The upper group (Record-ID) key that you want to assign the keystrokes to. The selected Record-ID key number (Fn) should appear. If any keystrokes have already been assigned to the key, the key number is displayed in high intensity (reversed-red for color models).
 - The Record key to exit to normal mode.
3. Do one of the following:
 - Enter the keystrokes that you want to record.
 - Press the Delete key to clear all of the recorded keystrokes of the selected Record-ID key and to exit to normal mode.

When you have completed the entering of the keystrokes, press the Record key to store and assign the keystrokes to the Record-ID key that you selected. If you press the Quit key while you are entering the keystrokes, the recorded keystrokes of the Record-ID key will be cleared and the display station will exit to normal mode.

If you press the Pause key, the symbol “R ” appears. The keystrokes will not be recorded while “R ” is present. Press the Record key again to continue the recording of the keystrokes. Pressing the Quit key clears the recorded keystrokes of the Record-ID key and the display station exits to normal mode.

When replaying the keystrokes in Play mode, the replaying temporarily stops at the point you pressed the Pause key in Record mode; and you can continue normal operation. By pressing the Play key, the display station continues to replay the recorded keystrokes.

While you are recording the keystrokes, the number that appears at the right of the symbol “R” will be decreased. This number tells you approximately how many remaining keystrokes you can enter.

Play Operation

To replay the recorded keystrokes:

1. Press the Play key. A “P” and the indicator of recorded keys appear in the operator information area. You can use this key even if the Do-Not-Enter message appears in the operator information area.

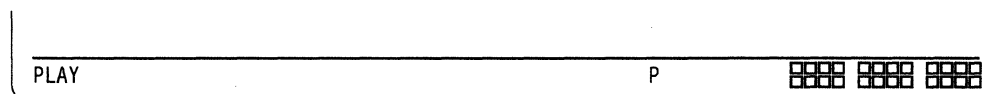



Figure 2-5. Play Operation

2. Press one of the following keys:
 - The key that the recorded keystrokes were assigned to.

- The Play key to exit to normal mode.

When you press the Record-ID key that you assigned the keystrokes to, the recorded keystrokes are replayed. If you press the Quit key while replaying, the display station exits to normal mode.

If “P ” appears in the operator information area, you can temporarily do normal operations except some local operations such as the print and setup operations. You can type the appropriate commands or data, and press the Play key to continue replaying the rest of the recorded keystrokes.

Sample Operation

The following sample shows:

1. You send a note about a party to Bob and to Jeff.
2. You want Bob to let you know if he is going to attend it.
3. You want Jeff to let Margaret know if he is going to attend it.

Then you open a file using a text editor and:

```
SAMPLE1 SCRIPT A1 F 80 TRUNC=80 SIZE=19 LINE=5 COL=1 ALT=1
=====
|...+...1...+...2...+...3...+...4...+...5...+...6...+...7...
0 *** TOP OF FILE ***
1 Bob,
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20 *** END OF FILE ***
```

```
SAMPLE1 SCRIPT A1 F 80 TRUNC=80 SIZE=19 LINE=5 COL=1 ALT=1
=====
|...+...1...+...2...+...3...+...4...+...5...+...6...+...7...
0 *** TOP OF FILE ***
1 Bob,
2 The following is the schedule for Dick's birthday
3 party. Please let
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20 *** END OF FILE ***
```


- Type "Bob,".
- Press the Record key to enter record mode. The symbol "R" appears in the operator information area.
- Press the upper group (Record-ID) key that you will assign the keystrokes to. The symbol "Fn" (n: 1 to 12) appears in the operator information area.
- Type the text.
- Press the Pause key to temporarily cancel recording of the keystrokes. The symbol "R ⚡" appears in the operator information area.

```

SAMPLE1 SCRIPT A1 F 80 TRUNC=80 SIZE=19 LINE=5 COL=1 ALT=1
====>
|...+...1...+...2...+...3...+...4...+...5...+...6...+...7...

0 *** TOP OF FILE ***
1 Bob,
2 The following is the schedule for Dick's birthday
3 party. Please let me
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20 *** END OF FILE ***

```

- Type “me”. This is not recorded.
- Press the Record key to return to record mode. The symbol “R  ” disappears.

```

SAMPLE1 SCRIPT A1 F 80 TRUNC=80 SIZE=19 LINE=5 COL=1 ALT=1
====>
|...+...1...+...2...+...3...+...4...+...5...+...6...+...7...

0 *** TOP OF FILE ***
1 Bob,
2 The following is the schedule for Dick's birthday
3 party. Please let me know if you plan to attend by
4 next Monday.
5
6 Place: Dick's place
7 Time: 6 pm to 8 pm
8 Fee: $ 15.00
9
10
11
12 Regards,
13 George
14
15
16
17
18
19
20 *** END OF FILE ***

```

- Type the remainder of the text.
- Press the Record key to complete the operation and exit to normal mode. The symbol “R” disappears.

```

SAMPLE2 SCRIPT A1 F 80 TRUNC=80 SIZE=19 LINE=5 COL=1 ALT=1
====>
|...+...1...+...2...+...3...+...4...+...5...+...6...+...7...

0 *** TOP OF FILE ***
1 Jeff,
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20 *** END OF FILE ***

```

- Save the previous file and open a new file for Jeff.
- Type “Jeff,”.
- Press the Play key to enter play mode. The symbol “P” appears in the operator information area.

```

SAMPLE2 SCRIPT A1 F 80 TRUNC=80 SIZE=19 LINE=5 COL=1 ALT=1
====>
|...+...1...+...2...+...3...+...4...+...5...+...6...+...7...

0 *** TOP OF FILE ***
1 Jeff,
2 The following is the schedule for Dick's birthday
3 party. Please let
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20 *** END OF FILE ***

```


- Press the Record-ID key that you assigned the keystrokes to. The recorded text will be displayed up to “let”.

```

SAMPLE2 SCRIPT A1 F 80 TRUNC=80 SIZE=19 LINE=5 COL=1 ALT=1
====>
|...+...1...+...2...+...3...+...4...+...5...+...6...+...7...

0 *** TOP OF FILE ***
1 Jeff,
2 The following is the schedule for Dick's birthday
3 party. Please let Margaret
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20 *** END OF FILE ***

```

- The symbol “P ” appears in the operator information area.
- Type “Margaret”.

```

SAMPLE2 SCRIPT A1 F 80 TRUNC=80 SIZE=19 LINE=5 COL=1 ALT=1
====>
|...+...1...+...2...+...3...+...4...+...5...+...6...+...7...

0 *** TOP OF FILE ***
1 Jeff,
2 The following is the schedule for Dick's birthday
3 party. Please let Margaret know if you plan to attend by
4 next Monday.
5
6 Place: Dick's place
7 Time: 6 pm to 8 pm
8 Fee: $ 15.00
9
10
11
12 Regards,
13 George
14
15
16
17
18
19
20 *** END OF FILE ***

```

- Press the Play key to continue displaying the recorded keystrokes. The remainder of the recorded text will be displayed. The symbol “P” disappears.

Save the file and the operation is completed.

Making Entry and Edit More Effective: Entry Assist

The Entry Assist function allows you to enter characters in a typewriter like environment without host application support. You can set tab stops, an end-of-line signal position, and screen margins. When you type a word over the screen margin, the word wraps to the first position of the next line. In insert mode, the backspace key moves the cursor backward and erases the existing characters.

Note: Entry Assist requires the appropriate keyboard layout ID and control unit customization. Refer to the *IBM InfoWindow 3471 and 3472 Introduction and Installation Planning Guide* for more information.

Using Entry Assist Keys

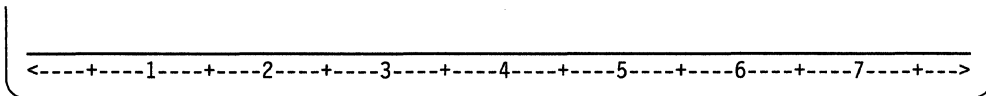
Depending on your keyboard layout ID, to use Entry Assist, the following keys are redefined:

104/122/124-key Keyboard		IBM Enhanced Keyboard	
Document On/Off	F13 after pressing ExSel	Document On/Off	F1 after pressing ExSel
Word Wrap On/Off	F14 after pressing ExSel	Word Wrap On/Off	F2 after pressing ExSel
Change Format	F15 after pressing ExSel	Change Format	F3 after pressing ExSel
Delete Word (aaa)	⌫ while holding down Alt	Delete Word (aaa)	Delete while holding down Alt
Next Word (→→)	→ while holding down Alt	Next Word (→→)	→ while holding down Alt
Previous Word (←←)	← while holding down Alt	Previous Word (←←)	← while holding down Alt
Error-correcting Backspace (←) ←		Error-correcting Backspace (←) ←	
Note: If your keyboard layout ID is set to 78EMU, this key redefinition is not valid. Refer to <i>IBM 3270 Information Display System Entry Assist User's Guide</i> for more information.			

Setting Tabs, Margin Signal, and Screen Margin Positions

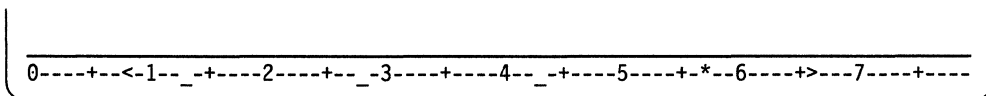
By performing the following steps you can set the tab stops, an end-of-line signal position, and the screen margins.

1. Press the ExSel key. The symbol ► is displayed in the operator information area.
2. Press the document On/Off key. The symbol DOC ↓ is displayed in the operator information area. The display station is in document mode and the word wrap function is turned on.
3. Press the ExSel key. The symbol ► is displayed in the operator information area.
4. Press the change-format key. The scale line is displayed in the operator information area.



As you move the cursor left or right, you will see another cursor in the operator information area that moves according to the actual cursor movement. At the desired column, you can set positions of tab stops, an end-of-line signal, and screen margins by using the following keys:

- Tab stops (marked by _)
- < Left margin
- > or | Right margin
- * An end-of-line signal



Pressing the Clear key cancels all tab settings. You can use the Delete character key to clear each tab stop and the end-of-line signal position.

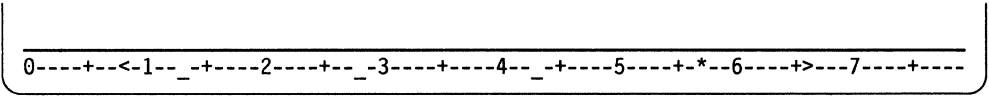
5. Press the ExSel key.
6. Press the change-format key. The scale line disappears and the setting is completed.

This setting will be kept even if you turn off the display station.

Using Word Wrap Function

The word wrap function default is “on”. When you press the ExSel key, then press the word wrap key while the display station is in document mode, the word wrap symbol (↵) disappears from the operator information area and word-wrap is turned off. Pressing this key again, turns on word wrap.

When you try to type a word over the screen margin, the word wraps to the first position of the next line. The following shows an example of the word wrap operation. Assuming that the left and right margins are set as follows,



you can start entering characters from the left margin position, and the word entered over the right margin wraps to the next line.

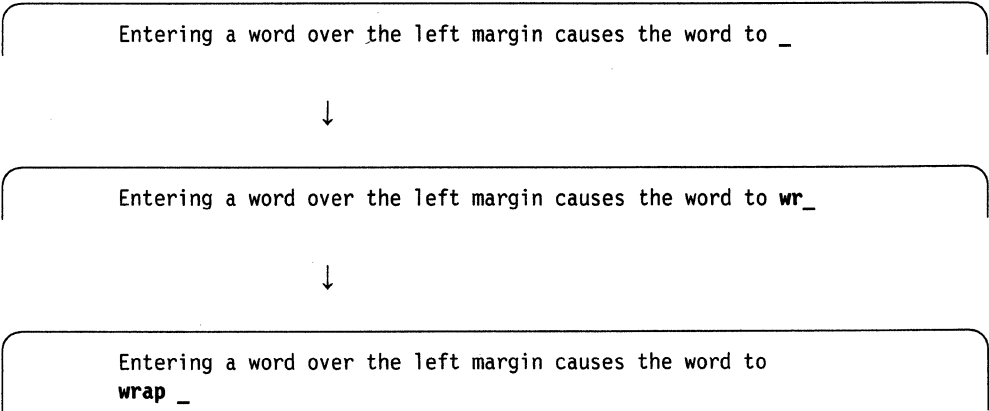


Figure 2-6. Word Wrap to the Next Line

In insert mode, the inserted character causes the existing characters to move to the next position. When the moved words overflow the margins, the words wrap to the next line.

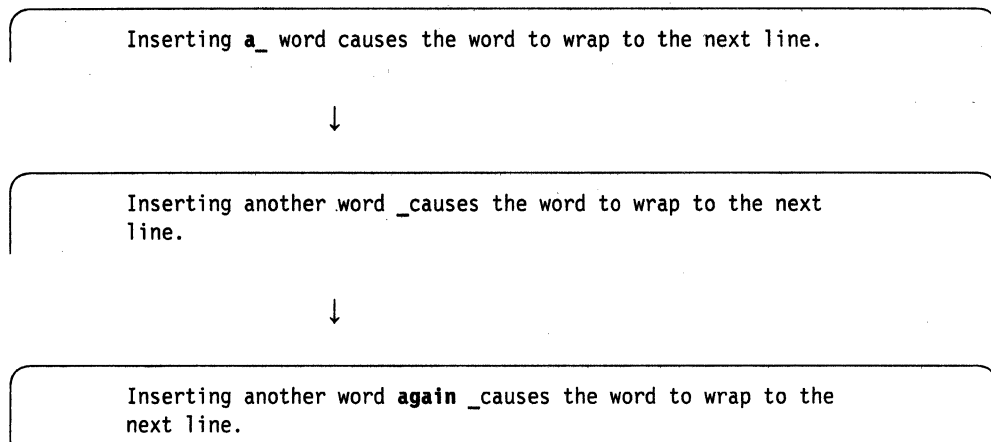


Figure 2-7. Word Wrap in Insert Mode

Note: Enough null-character space must be available in the next line for the word wrap operation. If the next line does not have enough null-character space, the keyboard locks and **✕✱>** appears in the operator information area.

Changing Scale Line Origin

You can select for the scale line to start from either 0 or 1. To change the scale line origin, place the cursor at the first position of the scale line and press the CrSel key.

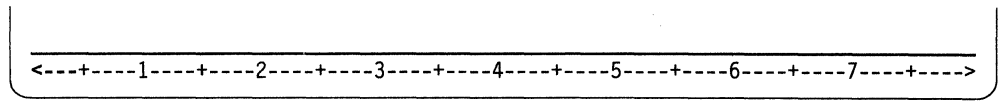


Figure 2-8. Scale Line Starting From 1

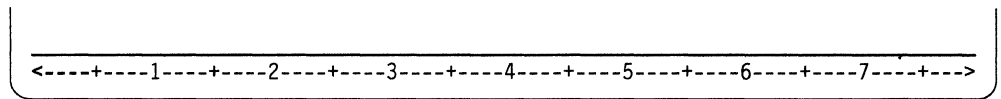


Figure 2-9. Scale Line Starting From 0

Moving Cursor to Next or Previous Word

In entry assist, pressing the cursor right \rightarrow key (\rightarrow while holding down the Alt key) moves the cursor to the first position of the next word. Pressing the cursor left \leftarrow key (\leftarrow while holding down the Alt key) moves the cursor to the first position of the previous word.

Deleting Words

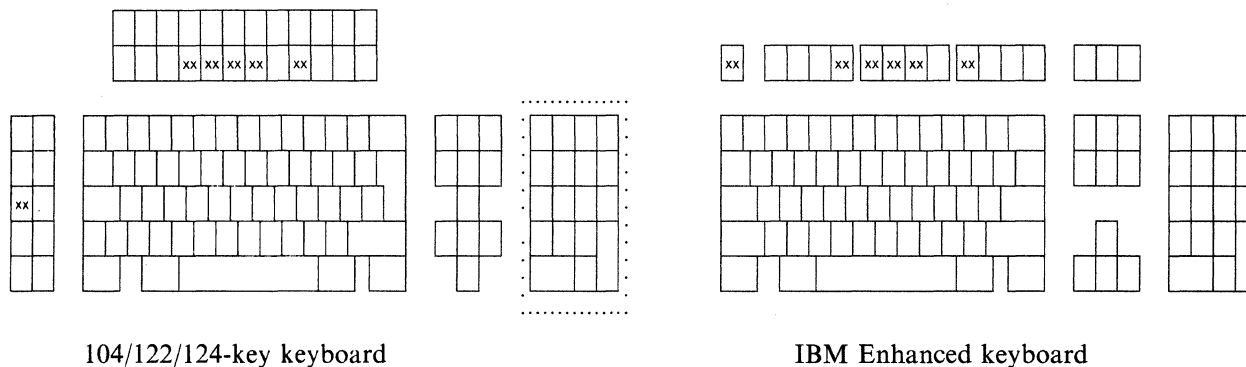
Pressing the Delete word aa key (a while holding down the Alt key) deletes the word and the following blank.

Operating in X.21/X.25 Network

When the display station is connected to a X.21/X.25 network via the control unit, the user can connect the display station to a host system that has been pre-defined by control unit customization or a host system that is specified by the user.

X.21/X.25 Network Keys

Depending on your keyboard layout ID, the following X.21/X.25 network keys are redefined when the ExSel key is pressed:



Original key	Redefined key
F4	Direct Call (Direct)
F5	Dial Call (Dial)
F6	Local
F7	Communication (Comm)
F9	Disconnect (Disc)

Note: The host connection procedure is dependant on your local environment. Consult your system personnel for details. The *IBM 3270 Information Display System X.25 Operation* describes the operation in detail.

The following figure shows the connection mode that has been pre-defined by control unit customization.

- When the display station is powered on, the display station has a path to the host system (in-use mode).
- Pressing the Disc key after pressing the ExSel key disconnects the display station from the network (disconnect-in-process mode) and the display station can perform local functions (local mode).
- Pressing the Comm key after pressing the ExSel key reconnects the display station to the host system (in-use mode).

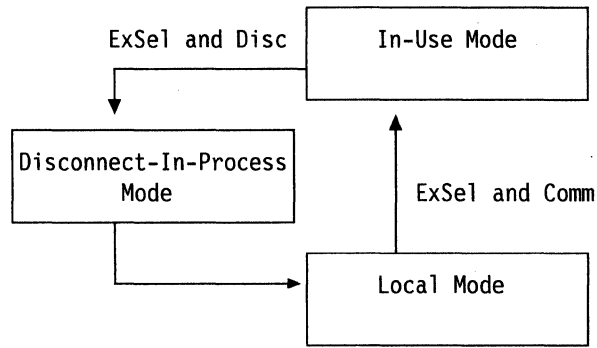


Figure 2-10. Control Unit Pre-defined Connection Modes

The following figure shows that the user can specify the host system to which the display station will be connected.

- When the display station is powered on, the display station can accept both user and host requests to connect (ready mode).
- Either by an in-coming-call from the host or by pressing the Dial key after pressing the ExSel key and entering the host system network address (in-coming/out-going call mode), the display station is connected to a host system (in-use mode).
- Pressing the Disc key after pressing the ExSel key disconnects the display station from the host system (disconnect-in-process mode). The display station can then accept user and host requests to reconnect (ready mode).
- Pressing the Local key after pressing the ExSel key in ready mode disconnects the display station from the network (local mode).
- Pressing the Comm key after pressing the ExSel key reconnects the display station to the network.

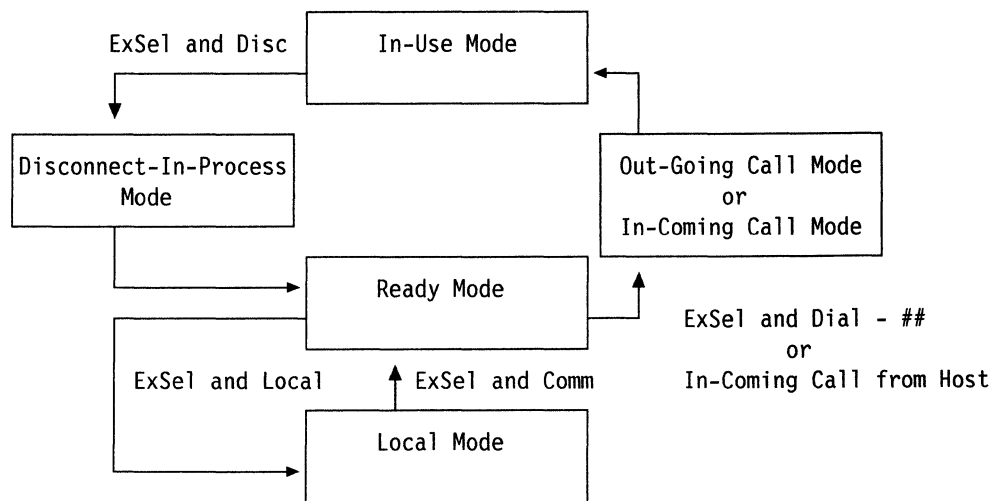
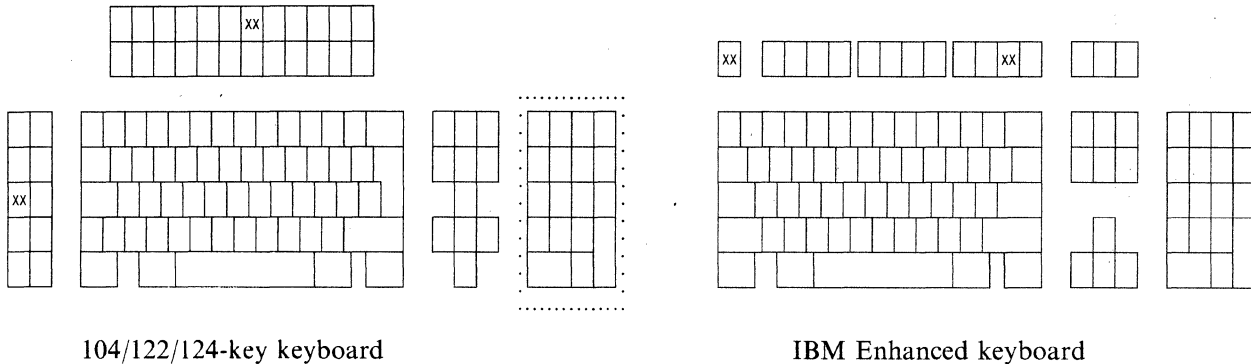


Figure 2-11. User Specified Connection Modes

Checking Response Time: Response Time Monitor

You can check the response time of the host system. The following key is redefined as the RTM (Response Time Monitor) key when the ExSel key is pressed and ► is present in the operator information area.



104/122/124-key keyboard

IBM Enhanced keyboard

Notes:

1. The control unit should be appropriately customized for this function.
2. If you selected the keyboard layout ID as the IBM 3278 emulation, you should refer to the *IBM 3274 Control Unit Programmer's Guide* for the RTM key position.

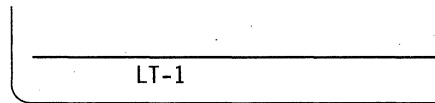
To check the response time of your host system; press the ExSel key, and then the RTM key. You should see one of the following symbols:

- ✕ ? + The control unit does not allow the display station to display the response time
- ⌚ : The display station is not allowed to display the response time
- ⌚ :ss.t "ss" for seconds and "t" for tenths of seconds
- ⌚ mm:ss "mm" for minutes and "ss" for seconds
- ⌚ :?? response time monitoring cancelled.

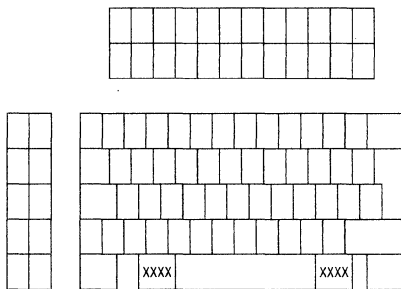
To cancel the response time monitor, press the ExSel key, and then the RTM key again.

Using in Multiple Sessions

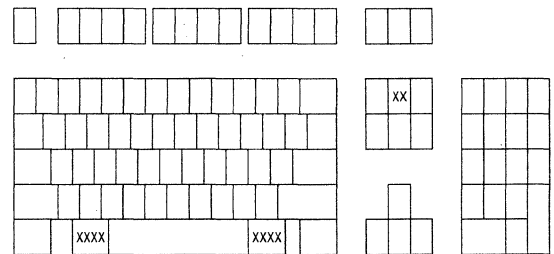
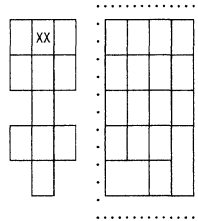
The display station supports multiple session operation when the control unit is customized for multiple session operation. The logical terminal ID (LT-1 to LT-5) is displayed in the operator information area to indicate which of the five possible sessions are active.



You can change the logical terminal ID from 1 to 5 (depending on the customization of the control unit) by pressing and holding down the Alt key, then press the ChgSc key to change the screen.



104/122/124-key keyboard



IBM Enhanced keyboard

Refer to the *IBM 3174 Subsystem Control Unit Functional Description* for more information.

Note: If “Host addressable print” is set to “Yes” in the setup panel and the printer is correctly defined as a host addressable printer, “LT-2” does not appear.

Chapter 3. Operator Messages

This section describes the operator messages that appear in the operator information area of the screen. It also describes what the user should do when a particular indicator or a set of indicators appear in the operator information area.

The operator information area is the bottom part of the screen. The *separator line* separates the data area from the operator information area. The following figure shows the location for each group of messages and the separator line on the screen.

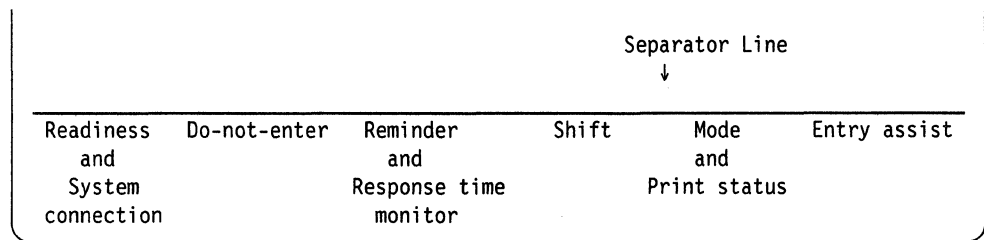
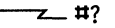
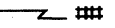

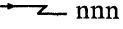



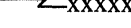
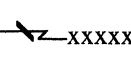
























Figure 3-1. Operator information area

Summary of System Indicators

Locate the desired symbol, then go to the specified page for details.







Field name	Symbol	Meaning	Page
Readiness and system connection	S	IBM 3174 ready	3-5
		IBM 3274 ready	3-5
	I or i	IBM 43xx processor ready	3-5
		Online (Non-SNA)	3-5
		Online (SNA)	3-5
		My job	3-5
		System operator	3-5
		Unowned	3-5
	N	IBM 9370 processor ready or In-use indicator (X.21/X.25 network adapter feature)	3-5
	4700	IBM 4700 controller ready	3-5
	3814	IBM 3814 ready	3-5
	T	IBM 5209 ready	3-5
	C	IBM 5209 in configuration mode	3-5
	TEST	Test mode	3-6
Do-not-enter	X SYSTEM	Do not enter - System lock	3-7
	X NUM	Do not enter - Numeric data only	3-7
	X	Do not enter - Security key	3-7
	X nnn	Do not enter - Machine check	3-7
	X 5nn	Do not enter - Communication check	3-8
	X PROG nnn	Do not enter - Program check	3-8
	X	Do not enter - Operator communication check	3-8
	X	Do not enter - Printer not working	3-8
	X	Do not enter - Printer busy	3-8
	X	Do not enter - Printer very busy	3-9
	X	Do not enter - Time (terminal wait)	3-9
	X ?+	Do not enter - What?	3-9
	X -f	Do not enter - Minus function	3-9
	X +?	Do not enter - Invalid diacritical-mark-key combination	3-9
	X ,+?		
	X ^+?		
	X ~+?		
	X ^+?		
	X °+?		
	X °+?		
	X °+?		
	X #?	Do not enter - What number	3-9
	X -S	Do not enter - Minus symbol	3-9
	X >	Do not enter - Too much entered (more than)	3-9
	X ←	Do not enter - Go elsewhere	3-9
	X X	Do not enter - Operator unauthorized	3-10
	X	Do not enter - System check (for IBM 4700)	3-10
Communi-cation error reminder	5nn	Communication error reminder	3-11
		Call ready	3-11
	Nnn	Call ready with call progress signal	3-11

Field name	Symbol	Meaning	Page
		Dial-in (dialing display station)	3-11
		Dial-in (other display station, same control unit)	3-11
		Outgoing call in process	3-11
		Outgoing call in process with call progress signal	3-11
		Incoming call in process	3-11
		Disconnect in process	3-12
		Local	3-12
		Call ready with cause and diagnostic codes (xxxxx: Five alpha-numeric characters)	3-12
		X.25 communication reminder with cause and diagnostic codes (xxxxx: Five alphanumeric characters)	3-12
Response time monitor		Response time display unauthorized	3-13
		Response time short type	3-13
		Response time long type	3-13
		Response time display canceled	3-13
Error indicator	L	Logic element is failing	5-1
	K	Keyboard is failing	5-1
	LK	Logic element or keyboard is failing	5-1
	Mnn	Logic element storage is failing	5-1
	nn	Display station error number	3-17
	- f	Invalid sequence key	3-17
		Cursor cannot move	3-17
	? +	Invalid target key	3-17
		No key sequence	3-17
	- fP	Invalid key in play mode	3-17
		Record table full	3-17
	2% %	Keyboard layout (type) ID or operational mismatch	3-17
Shift and modes		Upper shift	3-14
		Down shift	3-14
	A	Caps lock	3-14
	NUM	Numeric	3-14
		Insert mode	3-14
		Extended select mode	3-14
	T n	Test option mode	3-14
	⌘	Dim indicator	3-14
	APL	APL mode	3-14
	ALPHA	Alphabetic shift	3-14
	ALPHA 	Alpha-symbol shift	3-14
	カナ	Katakana shift	3-14
	カナ 	Kana-symbol shift	3-14
Printer status		Assign printer	3-15
		Printer printing	3-15
		Printer failure	3-15
		What printer	3-15
		Printer assignment	3-15
Entry assist function	DOC	Document mode	3-16
		Word wrap	3-16

Field name	Symbol	Meaning	Page
	rrr/cc	Cursor position	3-16
Record/play	R	Record	3-18
	R 	Record suspend	3-18
	P	Play	3-18
	P 	Play suspend	3-18
		Record-ID Key Position and Status	3-18
	F nn	Record-ID number	3-18

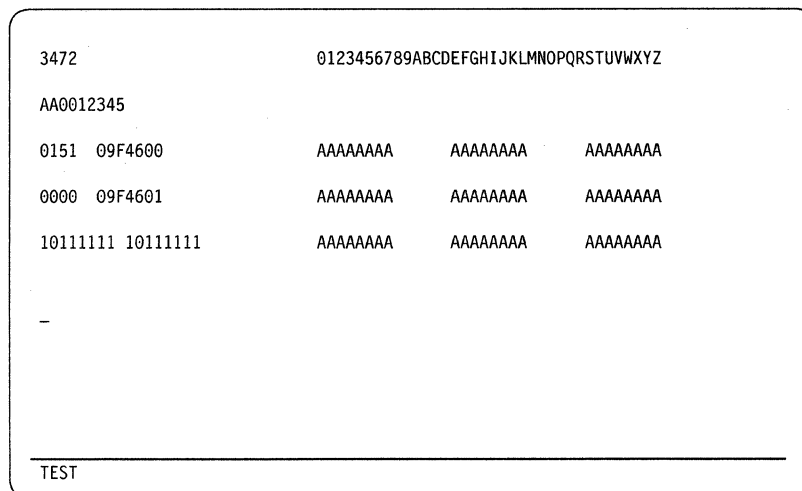
Readiness and System Connection

Readiness and System connection	Do-not-enter	Reminder and Response time monitor	Shift	Mode and Print status	Entry assist
--	--------------	---	-------	-----------------------------	--------------

Symbol	Meaning	Description
S	IBM 3174 ready	The display station is connected to the IBM 3174 Subsystem Control Unit.
	IBM 3274 ready	The display station is connected to the IBM 3274 Control Unit.
I or i	IBM 43xx Processor ready	The display station is connected to the IBM 43xx Processor.
	Online A	The communication method between the host computer and the control unit is not Systems Network Architecture (SNA). Pressing the Test key or sending data to or receiving data from the host computer turns off this symbol.
	Online B	The communication method between the host computer and the control unit follows the Systems Network Architecture.
	My job	The display station is connected to an application program.
	System operator	The display station is connected to the System Services Control Point. You can connect your display station to an application program by entering a command, or pressing the SysRq key while holding down the Alt key.
	Unowned	The display station is not connected to an application program or the System Services Control Point.
N	IBM 9370 Processor ready or In-use indicator	The display station is connected to the IBM 9370 Processor or the display station is connected to a host computer via the X.21/X.25 network. Refer to "Operating in X.21/X.25 Network" on page 2-18 for details.
4700	IBM 4700 Controller ready	The display station is attached to an IBM 4700 Controller.
3814	IBM 3814 ready	The display station is connected to an IBM 3814 Channel Switching Unit.
T	IBM 5209 ready	The display station is connected to an IBM 5250 host system (S/36, S/38, or AS/400 ¹) via IBM 5209 Link Protocol Converter.
C	IBM 5209 in configuration mode	The display station is connected to an IBM 5209 Link Protocol Converter that is in configuration mode.

¹ AS/400 is a trademark of International Business Machines Corporation.

Symbol	Meaning	Description
TEST	Test mode	<p>There are two types of test modes; offline and online.</p> <p>In the offline test mode, color models of the display station display the following test pattern. To enter this mode, select “Test display station” in the “Offline Setup” panel.</p>




Note: The numbers and characters that appear in the test pattern may be different from the ones shown. The test pattern is dependant on the display station.

In the online test mode, the display station is under the control of the control unit’s test program. To enter this mode, press the **Test** key while holding down the **Alt** key. Refer to *IBM 3174 Subsystem Control Unit Help Desk Reference* or *IBM 3274 Control Unit Description and Programmer’s Guide* for details.

Do-not-enter

Readiness and System connection	Do-not-enter	Reminder and Response time monitor	Shift	Mode and Print status	Entry assist
--	---------------------	---	-------	-----------------------------	--------------

The Do-not-enter symbol **X** indicates that the display station will not accept input from the keyboard. Some additional symbols are shown at the right of this symbol to explain the reason. All of the keys are locked, except for the following keys:




Alt, AltCr, Attn, CrBnk, ExSel, Quit, Reset, Shift () , SysRq, or Test key.



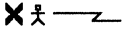






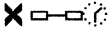



Pressing the **Reset** key removes some of the do-not-enter symbols.

You can turn on and off the clicker as described in Appendix A, “Display Station Controls and Adjustments” on page A-1.

- If the clicker is on and pressing a key does not sound the audible clicker, a do-not-enter condition locks the keyboard.
- If the clicker is off and pressing a key sounds the audible clicker, a do-not-enter condition locks the keyboard.

The following descriptions tell how to turn off the symbol and unlock the keyboard.

Symbol	Meaning	Description
X SYSTEM	System lock	Cannot enter any data. The application program locked the keyboard. Pressing the Reset key removes this symbol and unlocks the keyboard.
X  NUM	Numeric data only	A non-numeric character (other than 0 through 9, a period, or a minus sign) key was pressed in a numeric field. This specific field is active only if the numeric-lock was set to “Yes” during the setup. Pressing the Reset key removes this symbol and unlocks the keyboard. Note: In some countries, the comma replaces the period as a numeric character.
X 	Security key	This symbol indicates that the security key has locked the display station. The screen is blank (except the operator information area and the cursor) and the display station cannot accept any data. To remove this symbol, insert the security key into the keylock, and turn the key fully clockwise.
X  nnn	Machine check	There is a problem with the display station or the control unit. Refer to the <i>IBM 3174 Subsystem Control Unit Help Desk Reference</i> or the <i>IBM 3274 Control Unit Description and Programmer's Guide</i> for the definition of nnn.

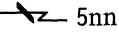

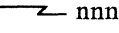
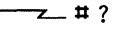
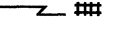

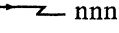

Symbol	Meaning	Description
 5nn	Communication check	<p>There is a problem with the communication line between the display station and the host computer.</p> <p>You tried to send data to the host computer while the communication error reminder was displayed in the operator information area. The error code 5nn defines the type of problem that occurred. Press the Reset key to remove this symbol and to unlock the keyboard.</p> <p>Refer to the <i>IBM 3174 Subsystem Control Unit Help Desk Reference</i> or the <i>IBM 3274 Control Unit Description and Programmer's Guide</i> for the definition of nn.</p>
 PROGnnn	Program check	<p>The control unit has detected an error in the data from the host computer. This symbol may appear because the application program is the wrong one for the display station. Press the Reset key to remove this symbol and to unlock the keyboard.</p> <p>Refer to the <i>IBM 3174 Subsystem Control Unit Help Desk Reference</i> or the <i>IBM 3274 Control Unit Description and Programmer's Guide</i> for the definition of nn.</p>
	Operator communication check	<p>You requested an X.21/X.25 function that is currently not allowed. Press the Reset key to remove this symbol and to unlock the keyboard.</p>
	Printer not working	<p>The printer assigned to the display station is not working and no other printers in the same class are available.</p> <p>If  nn is not present and  appears after you press the Print key, the printer assigned to the display station (or the most available printer in the class) is not working. Pressing the Quit key to cancel the print request will unlock the keyboard.</p> <p>Pressing the Reset key will have no effect. If  nn is present in the operator information area, the printer stopped during the last print operation.</p> <p>The symbol  may also appear if a host computer requested print operation is in process. Pressing the Quit key for the host requested printing causes  to appear and the user has to wait until the printing completes.</p>
	Printer busy	<p>The printer assigned to the display station is busy. If  nn appears with this symbol, while the printing is in process, the user may either, wait for the process to complete, or press the Quit key. Pressing the Quit key:</p> <ul style="list-style-type: none"> • Cancels the request if it has not started, or cancels the remainder of the job if it has started • Erases  • Unlocks the keyboard. <p>If you press the Quit key while the printer is printing by a request from the host computer,  replaces this symbol.</p> <p>Note: This symbol may flash on and off after the printing has started. Pressing the Reset key has no effect.</p>

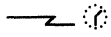

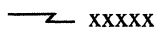
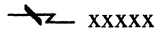
Symbol	Meaning	Description
✕ □ □ □ □ □	Printer very busy	This symbol means the same as ✕ □ □ □ □ □, except that more time is expected before the printing is complete. The Reset key has no effect.
✕ ⌚	Time (terminal wait)	The host computer or the control unit needs more time to respond to your request. If the symbol is displayed for more than a few minutes, you should call your system personnel for help.
✕ ? +	What?	<p>The display station did not accept the last input. Make sure the operation is correct. One of the following caused this symbol to appear:</p> <ul style="list-style-type: none"> • The display station did not recognize the entered data. • The diacritical-mark-key or character-key input was not complete. • You pressed a key while a do-not-enter symbol ✕ was present. • You pressed the Response Time Monitor (RTM) key after the control unit had already disabled the RTM functions.
✕ -f	Minus function	An unavailable keyboard function was requested. Press the Reset key to unlock the keyboard.
✕ ʼ+? ✕ ʹ+? ✕ ˆ+? ✕ ˘+? ✕ ˙+? ✕ ˚+? ✕ ¨+?	Invalid diacritical-mark-key combination	<p>An invalid diacritical-mark-key and character-key combination was entered.</p> <p>Press the Reset or SysRq key to unlock the keyboard and enter a correct diacritical-mark-key and character-key combination again.</p>
✕ ʒ ?	What number	<p>The Ident key was pressed and an incorrect printer number was entered. This symbol appears when a selected printer number is not numeric or is not defined.</p> <p>Pressing the Reset key removes this symbol and unlocks the keyboard.</p>
✕ - S	Minus symbol	An unsupported key was pressed. Pressing the Reset key removes this symbol and unlocks the keyboard. This symbol may be caused by an invalid diacritical-mark-key and character-key input.
✕ ʒ >	Too much entered (more than)	You tried to insert characters into an input field that had no space for the characters. Even if you see spaces for the characters to be inserted, there may be blank characters that you have to delete. Pressing the Reset key removes this symbol and unlocks the keyboard.
✕ ← ʒ →	Go elsewhere	<p>You tried to:</p> <ul style="list-style-type: none"> • Enter, insert, erase, or delete a character when the cursor is not in an input field. • Use the CrSel key when the cursor is not in a detectable field. <p>Pressing the Reset key removes this symbol and unlocks the keyboard.</p>

Symbol	Meaning	Description
✕ 𐄂 ✕	Operator unauthorized	<p>The display station is not allowed to do the printer-related functions that you requested. One of the following caused this symbol to appear:</p> <ul style="list-style-type: none"> • You pressed the Print key without entering the printer number in □-□ nn, or □-□ ?? is present. • You pressed the Ident key and the control unit has no printer assigned. • The number you entered is defined by the control unit, but is not allowed for the display station. • When you pressed the Print key, the printer assigned to your display station is actually another display station. • The printer is unable to accept all of the contents of a display during local-printing. <p>Pressing the Reset key removes this symbol and unlocks the keyboard.</p>
✕	System check	<p>An error occurred in the data transmission between the display station and the controller. Pressing the Reset key removes the symbol (IBM 4700 Financial Communication System only).</p>

Communication Error Reminder





Readiness and System connection	Do-not-enter	Reminder and Response time monitor	Shift	Mode and Print status	Entry assist
--	--------------	--	-------	-----------------------------	--------------

Symbol	Meaning	Description
 5nn	Communication error reminder	<p>The control unit detected a communication link error between the control unit and the host computer.</p> <p>This condition occurs when:</p> <ul style="list-style-type: none"> The control unit detects a permanent error in the communication line with the host computer. The symbol appears on all display stations attached to the control unit. A communication line error was detected. The display station restores its previous contents and requests the host computer to send again the error data. The symbol appears only on the affected display station. <p>Error number 5nn defines the type of problem that occurred.</p>
	Call ready	The control unit is in an X.21/X.25 ready state. The display station is ready to communicate with a host computer via the X.21/X.25 network.
 nnn	Call ready with call progress signal	A call request is in process but the connection has not been completed. Refer to <i>IBM 3174 Subsystem Control Unit Help Desk Reference</i> or <i>IBM 3274 Control Unit Description and Programmer's Guide</i> for the reason which nnn indicates.
 # ?	Dial-in (dialing display station)	You pressed the ExSel key, then pressed the DIAL key at the display station, which attempted to dial a host computer via the X.21/X.25 network. The control unit is waiting for the dial numbers (the network address of the dialing host computer) to be keyed-in.
 ###	Dial-in (other display station, same control unit)	This symbol is present at display stations connected to the same control unit as the display station that tries to dial a host computer via the X.21/X.25 network.
	Outgoing call in process	You pressed the Enter key after keying in the dial numbers for the dial-in symbol, and call request was in process.
 nnn	Outgoing call in process with call progress signal	The outgoing call is in process, but the connection is not being made. Refer to <i>IBM 3174 Subsystem Control Unit Help Desk Reference</i> or <i>IBM 3274 Control Unit Description and Programmer's Guide</i> for the reason which nnn indicates.
	Incoming call in process	This symbol appears when the control unit has been addressed by the network and is answering an incoming call.

Symbol	Meaning	Description
	Disconnect in process	<p>Disconnection from the network is in process because:</p> <ul style="list-style-type: none"> • You pressed the ExSel key, then pressed the DISC key • The control unit received a disconnect command from the network • A timeout condition occurred.
	Local	You pressed ExSel key, then pressed the LOCAL key. The control unit is offline to the network for local operations.
	Call ready with cause and diagnostic codes	An error occurred and five alphanumeric characters are displayed at the right of the call ready symbol. These characters indicates the cause. Refer to <i>IBM 3174 Subsystem Control Unit Help Desk Reference</i> or <i>IBM 3274 Control Unit Description and Programmer's Guide</i> for details.
	X.25 communication reminder with cause and diagnostic codes	An error occurred and five alphanumeric characters are displayed at the right of the communication reminder symbol. These characters indicates the cause. Refer to <i>IBM 3174 Subsystem Control Unit Help Desk Reference</i> or <i>IBM 3274 Control Unit Description and Programmer's Guide</i> for details.

Response Time Monitor

Readiness and System connection	Do-not-enter	Reminder and Response time monitor	Shift	Mode and Print status	Entry assist
--	--------------	---	-------	-----------------------------	--------------

Symbol	Meaning	Description
 :	Response time display unauthorized	The display station is not allowed to display the response time by the host computer, although the control unit enabled the response time monitor.
 :ss.t	Response time short type	This symbol shows the time required for the last data transmission to the host computer (ss for seconds and t for tenths of seconds). This symbol remains displayed until a new response time monitor symbol is displayed.
 mm:ss	Response time long type	This symbol shows the time required for the last data transmission to the host computer (mm for minutes and ss for seconds). The symbol remains displayed until a new response time monitor symbol is displayed.
 :??.	Response time display canceled	The current response time measurement was canceled.

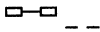
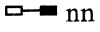

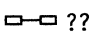
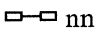
Shift and Modes

Readiness and System connection	Do-not-enter	Reminder and Response time monitor	Shift	Mode and Print status	Entry assist
--	--------------	---	--------------	------------------------------------	--------------

Symbol	Meaning	Description
⇧	Upper shift	Alpha characters entered from the keyboard will appear in upper-case characters. If the key has two characters or symbols on its keypad, the symbol on the top part of the keypad is displayed.
⇩	Down shift	When you are using the data entry keyboard, pressing the down shift ⇩ key in upper shift mode temporarily releases the upper shift status and keyboard is in normal typing mode.
A	Caps lock	Alphabetic characters and accented characters (when printed in capital letters on the keytops) appear in capital letters.
NUM	Numeric	The numeric lock function is on and the cursor is in a numeric field. Only numeric characters such as 0 through 9, a period, or a minus sign can be entered.
^	Insert mode	The keyboard is in insert mode. A character may be inserted at the cursor position. The insert mode can be turned off by pressing one of the following keys. Reset, Test, SysRq, Enter, Clear, PA, or Fnn key.
►	Extended select mode	The Extended Select (ExSel) key was pressed and the keyboard is in extended select mode. This mode redefines the program function key functions. Pressing any key exits from this mode.
T n	Test option mode	The Test key was pressed and the display station is in test mode.
⌘	Dim indicator	You have not pressed any key or the display has not received any data for ten minutes. The screen blanks and pressing any key returns the display contents.
APL	APL mode	The display station is in APL mode.
ALPHA	Alphabetic shift	The keyboard is in alphabetic shift. This symbol appears only when the Japanese Katakana keyboard is attached to the display station.
ALPHA ⇧	Alpha-symbol shift	The keyboard is in alpha-symbol shift. This symbol appears only when the Japanese Katakana keyboard is attached to the display station.
カナ	Katakana shift	The keyboard is in Katakana shift. This symbol appears only when the Japanese Katakana keyboard is attached to the display station.
カナ ⇧	Kana-symbol shift	The keyboard is in Kana-symbol shift. This symbol appears only when the Japanese Katakana keyboard is attached to the display station.

Printer Status

Readiness and System connection	Do-not-enter	Reminder and Response time monitor	Shift	Mode and Print status	Entry assist
--	--------------	---	-------	------------------------------------	--------------

Symbol	Meaning	Description
	Assign printer	The Ident key was pressed. You can assign a printer by keying in the printer number in place of __.
	Printer printing	The printer identified by nn is printing the display station's data.
	Printer failure	The printer identified by nn has stopped while printing the display station data. This symbol remains on until you clear the condition or press the Quit key.
	What printer	The printer assignment has been changed. Pressing the Ident key displays a new printer assignment.
	Printer assignment	<p>The display station can use the printer address number nn.</p> <p>Possible nn numbers are:</p> <ul style="list-style-type: none"> • 1 through 31: individual printer port number • 70 through 85: printer class number • 99: local printer

Entry Assist Function

Readiness and System connection	Do-not-enter	Reminder and Response time monitor	Shift	Mode and Print status	Entry assist
--	--------------	---	-------	-----------------------------	--------------

Symbol	Meaning	Description
DOC	Document mode	The display station is in document mode. For more details about the document mode, refer to "Making Entry and Edit More Effective: Entry Assist" on page 2-13.
↓	Word wrap	The word wrap (automatic new line) function is enabled. For more details about the word wrap function, refer to "Making Entry and Edit More Effective: Entry Assist" on page 2-13.
rrr/cc	Cursor position	This symbol shows the current row and column position of the cursor. Pressing the Cursor Position (CrPos) key enables and disables the display of the cursor position (in extended select mode).

Error Indicator

Readiness and System connection	Do-not-enter	Reminder and Response time monitor	Shift	Mode and Print status	Entry assist
--	--------------	---	-------	-----------------------------	--------------

Symbol	Meaning	Description
nn	Error number	This number is displayed with error indicators. The number shows the service representatives the type of problem that occurred.
- f	Invalid sequence key	You pressed a local function key that cannot be recorded. Pressing the correct key clears the symbol.
↔→	Cursor cannot move	You tried to move the cursor out of the screen area while setting the printing area. Moving the cursor within the screen clears the symbol.
? +	Invalid target key	You pressed a key other than the key that the key strokes can be assigned to. Pressing the correct key clears the symbol.
↔<	No key sequence	The key that you pressed has no key strokes assigned. Pressing the correct key clears the symbol.
- fP	Invalid key in play mode	You pressed a key other than the Quit key while the recorded key strokes are being replayed. When the replaying completes or you press the Quit key, the symbol disappears.
↔>	Record table full	You cannot record any more key strokes. You have to delete some recorded key strokes that are assigned to the other key, if more key strokes are required to be recorded.
2%%	Keyboard layout (type) ID or operational mismatch	<p>The keyboard layout ID in the setup panel may not match the ID that is defined during the control unit customization. You may need to check the keyboard layout ID in the setup panel or the control unit customization.</p> <p>This message is also displayed when the control unit customization for the items other than the keyboard layout ID is not appropriate. Contact the person who is responsible for the control unit customization.</p>

Record/Play

Readiness and System connection	Do-not-enter	Reminder and Response time monitor	Shift	Mode and Print status	Entry assist
--	--------------	---	-------	-----------------------------	--------------

Symbol	Meaning	Description
R	Record	<p>The display station is in Record mode. The number at the right of “R” indicates approximately how many key strokes you can record. Press one of the following keys:</p> <ul style="list-style-type: none"> • An upper group (Record-ID) key that you will assign the key strokes to. • The Record key or the Quit key to cancel the record operation. <p>Refer to “Recording and Playing Keystrokes” on page 2-7 for details.</p>
R ㊦	Record suspend	<p>You pressed the Pause key and the key stroke recording is temporarily stopped. By pressing the Record key again, the display station continues to record the key strokes. Refer to “Recording and Playing Keystrokes” on page 2-7 for details.</p>
P	Play	<p>The display station is in Play mode. Press one of the following keys:</p> <ul style="list-style-type: none"> • An upper group (Record-ID) key that you assigned the key strokes to. • The Play key or the Quit key to cancel the play operation. <p>When you press the upper group key, the recorded key strokes start replaying. If you press the Quit key while replaying, the display station exits to normal mode. Refer to “Recording and Playing Keystrokes” on page 2-7 for details.</p>
P ㊦	Play suspend	<p>Replaying the recorded key strokes temporarily stops. You can do normal operations until you press the Play key. Refer to “Recording and Playing Keystrokes” on page 2-7 for details.</p>
㊦	Record-ID Key Position and Status	<p>This indicator shows which key has already been assigned (by a solid box) the key strokes. Refer to “Recording and Playing Keystrokes” on page 2-7 for details.</p>
F nn	Record-ID key number	<p>The number at the right of “F” indicates the record-ID key number.</p>

Chapter 4. Keyboard and key functions

This section describes the function of each key on the keyboard.

The following figures show the U.S. English, 122-key typewriter, and IBM Enhanced keyboard layouts.

Note: The keys that are not described in the following quick reference table do not function for the display station.

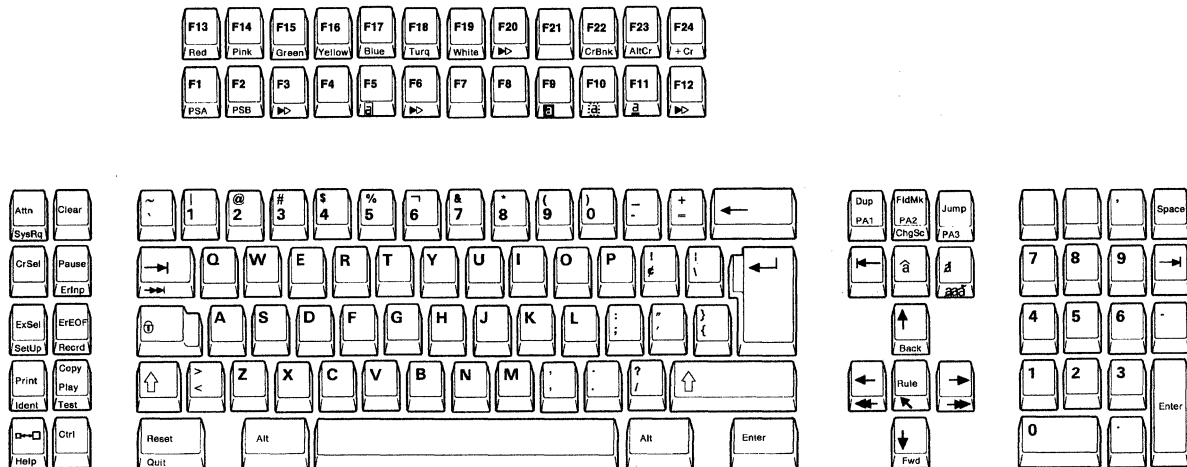


Figure 4-1. 122-key Typewriter keyboard layout (U.S. English)

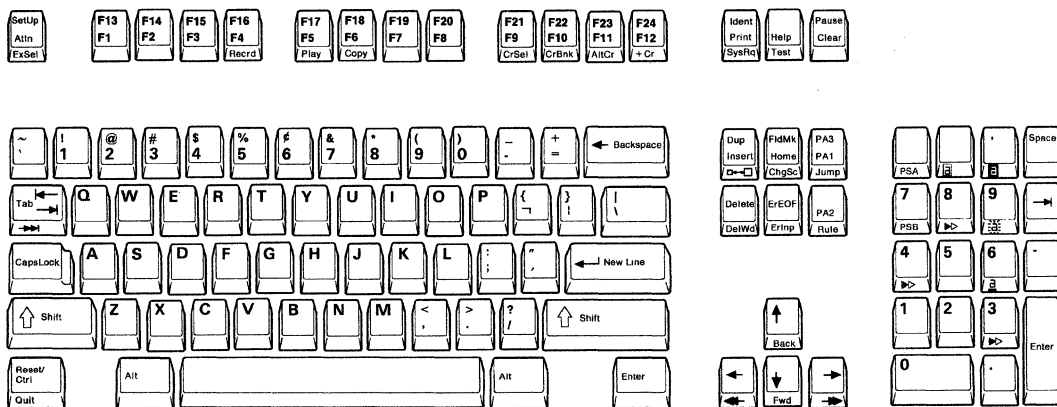


Figure 4-2. IBM Enhanced keyboard layout (U.S. English)

Quick Reference Table of Key Functions

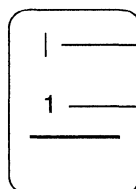
Locate the desired key, then go to the specified page for details.

Group name	Key	Page
Keyboard control keys	Alternate (Alt)	4-4
	Caps Lock	4-4
	Reset	4-4
	Extended Select (ExSel)	4-5
	Katakana Shift (カナ, 英数, 英記号, カナ記号, and 英数/カナ)	4-6
Typewriter type keys	Alphabetic	4-7
	Backspace (←)	4-7
	Diacritical Mark	4-8
	Numeric	4-9
	Punctuation Mark	4-9
	Shift Lock (⇧)	4-9
	Space	4-9
	Space Bar	4-9
	Symbols	4-9
	Upper Shift (⇧)	4-9
Cursor control keys	Backtab (⇧←)	4-10
	Alternate Cursor (AltCr)	4-10
	Cursor (↑, ↓, ←, and →)	4-11
	Cursor Blink (CrBnk)	4-11
	Cursor Home (⇧ or Home)	4-11
	Double-speed Cursor (⇧← and ⇧→)	4-12
	New Line (⇧↵)	4-12
	Tab (⇧→)	4-12
Screen control keys	Clear	4-13
	Delete Character (✕ or Delete)	4-13
	Duplicate (Dup)	4-13
	Erase End-of-field (ErEOF)	4-14
	Erase Input-field (ErInp)	4-14
	Field Mark (FldMk)	4-14
	Insert (⇧ or Insert)	4-14
	Change Screen (ChgSc)	2-21
	Backward (Back)	4-15
	Forward (Fwd)	4-15
	Rule (Rule)	4-15
Local function keys	Quit	4-17
	Print	4-16
	Print ID (Ident)	4-16
	Setup	A-8
	Record	2-7
	Play	2-7
	Pause	2-7
Test key	Test	4-18
Host function keys	Attention (Attn)	4-19
	Cursor Select (CrSel)	4-19
	Enter	4-19
	Function (Fn)	4-19

Group name	Key	Page
	Program Access (PAn)	4-20
	System Request (SysRq)	4-20
Entry assist function keys	Change Format (Chg Fmt)	4-21
	Delete Word (aaa or DelWd)	4-21
	Document On/Off (DOC On/Off)	4-22
	Word Wrap On/Off (Wrap)	4-22
	Error-Correcting Backspace (←)	4-22
	Next/Previous Word (→/←)	4-22
X.21/X.25 network function keys	Communication	2-18
	Dial Call	2-18
	Direct Call	2-18
	Disconnect	2-18
	Local	2-18
Response time monitor key	Response time monitor On/Off (RTM)	4-23
APL key	APL On/Off (APL)	4-24

How to select the upper and alternate position of key labels

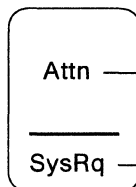
Some keys have combination of characters, symbols, and labels printed on their key-top. To enter the one on the lower half, press the key alone. To enter the upper half, press and hold the upper shift (⇧) key then press the desired key.



Press and hold the ⇧ key before pressing the key.

Press the key.

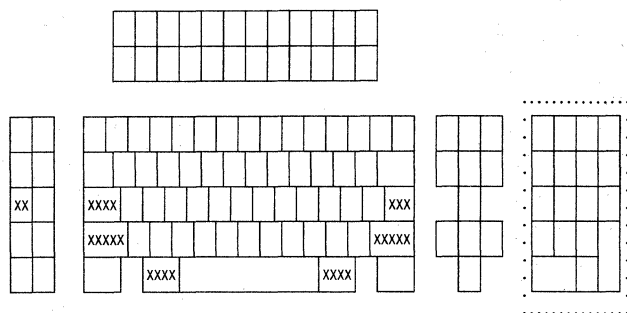
Some keys have combination of characters, symbols, and labels printed on both the top and the front of the key. To enable the top function, press the key alone. To enable the front function, press and hold the alternate (Alt) key then press the desired key.



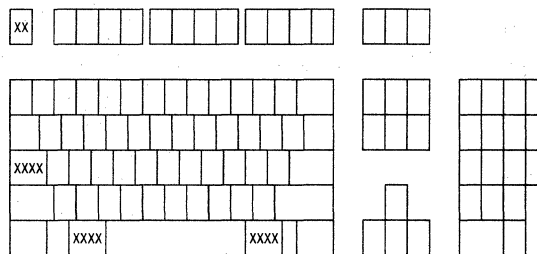
Press the key.

Press and hold the Alt key before pressing the key.

Keyboard Control Keys



104/122/124-key keyboard



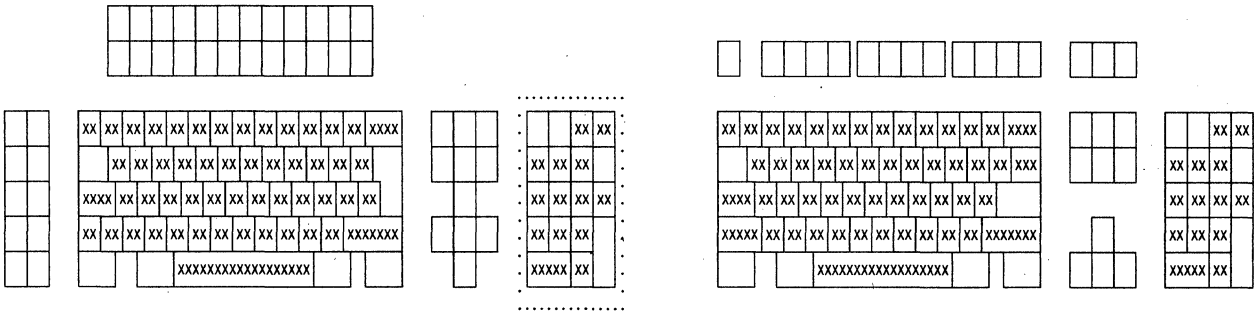
IBM Enhanced keyboard

Typewriter keyboard	Enhanced keyboard	Description
Alternate Shift		Some keys have names printed on the front of the keys. To activate the function, the key must be pressed while pressing and holding the Alt key. The name printed on the top of the key is the function activated when it is pressed, without first pressing and holding the Alt key.
Caps Lock		When you press this key, the display station enters Caps Lock mode. Alphabetic characters and accented characters, when printed in capital letters on the key-tops, will appear in capital letters.
Reset		<p>The Reset key:</p> <ul style="list-style-type: none"> Causes the display station to leave insert mode and removes the symbol ^. Cancels a diacritical-mark key and character key input, leaving a stand-alone accent at the cursor position. Unlocks the keyboard and removes the do-not-enter symbols X currently displayed in the operator information area except:
		<p>Security key X </p> <p>Terminal wait X </p> <p>Printer busy X </p> <p>Printer very busy X </p> <p>Printer Not Working X </p>

Typewriter keyboard	Enhanced keyboard	Description
Extended Select		
<div> <div>ExSel</div> <hr/> <div>SetUp</div> </div>	<div> <div>SetUp</div> <hr/> <div>Attn</div> <hr/> <div>ExSel</div> </div>	<p>When you press the ExSel key, ► appears in the operator information area and the following function keys provide functions different from the designated functions.</p> <ul style="list-style-type: none"> 104/122/124-key keyboard <ul style="list-style-type: none"> F4 Direct call key F5 Dial call key F6 Local key F7 Communication key F8 APL On/Off key F9 Disconnect key F13 Document On/Off (DOC On/Off) key F14 Word wrap On/Off (Wrap) key F15 Change format (ChgFmt) key F19 Response time monitor (RTM) key IBM Enhanced keyboard <ul style="list-style-type: none"> F1 Document On/Off (DOC On/Off) key F2 Word wrap On/Off (Wrap) key F3 Change format (ChgFmt) key F4 Direct call key F5 Dial call key F6 Local key F7 Communication key F9 Disconnect key F11 Response time monitor (RTM) key <p>While ► is present, the function keys, other than those shown above, do not function when pressed.</p> <p>Pressing any key clears the symbol ►.</p> <p>Note: When “Keyboard layout” is set to “78EMU”, the display station is operating in IBM 3278 emulation mode and the above key redefinitions are invalid.</p>

Typewriter keyboard	Enhanced keyboard	Description										
Katakana Shift		Japanese Katakana keyboard only.										
<div>英数</div>	<div>英数 / カナ</div>	<p>The Japanese Katakana keyboard has four shift modes for the data character keys. The current shift status is indicated in the operator information area as follow:</p> <table><tr><td>Shift</td><td>Symbol</td></tr><tr><td>Alpha</td><td>ALPHA</td></tr><tr><td>Alpha symbol</td><td>ALPHA ⬆</td></tr><tr><td>Kana</td><td>カナ</td></tr><tr><td>Kana symbol</td><td>カナ ⬆</td></tr></table>	Shift	Symbol	Alpha	ALPHA	Alpha symbol	ALPHA ⬆	Kana	カナ	Kana symbol	カナ ⬆
Shift	Symbol											
Alpha	ALPHA											
Alpha symbol	ALPHA ⬆											
Kana	カナ											
Kana symbol	カナ ⬆											
<div>英 記号</div>		<p>At power-on time, the keyboard is set to Alpha shift.</p> <p>Depending on the keyboard type, the Katakana keys control the shift modes as follow:</p> <ul style="list-style-type: none">124-key Typewriter Japanese Katakana keyboard										
<div>カナ</div>		<p>The 英数, 英記号, カナ, and カナ記号 keys place the keyboard in Alpha, Alpha symbol, Kana, and Kana symbol modes, respectively. The keyboard remains in that shift mode until another Katakana shift key is pressed.</p>										
<div>カナ 記号</div>		<ul style="list-style-type: none">IBM Enhanced Japanese Katakana keyboard <p>Pressing the 英数/カナ key in Alpha or Alpha symbol shift mode, causes the keyboard to enter Kana or Kana symbol shift mode, respectively.</p> <p>Pressing the 英数/カナ key in Kana or Kana symbol shift mode, causes the keyboard to enter Alpha or Alpha symbol shift mode, respectively.</p> <p>In Alpha or Kana shift mode, pressing the upper shift key places the keyboard in Alpha symbol or Kana symbol shift mode.</p> <p>The shift lock (⌫) key can be used to lock the keyboard in Alpha symbol or Kana symbol shift mode. Pressing the upper shift key (⇧) returns to Alpha or Kana shift mode.</p>										

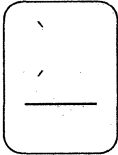
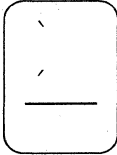
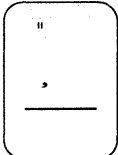
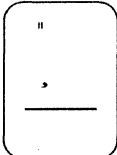
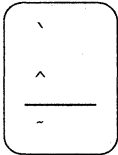
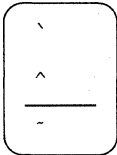
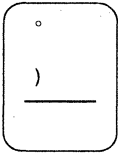
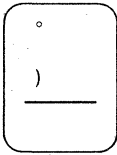
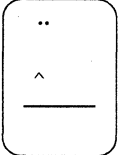
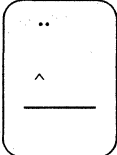
Typewriter Type Keys

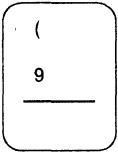
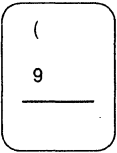
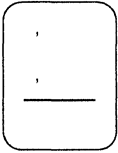
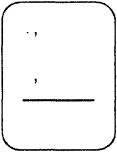

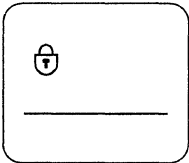
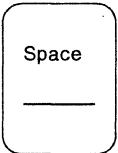
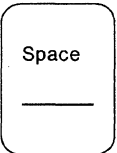


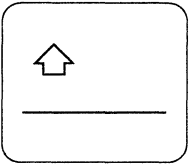
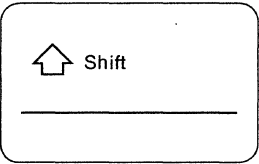


104/122/124-key keyboard

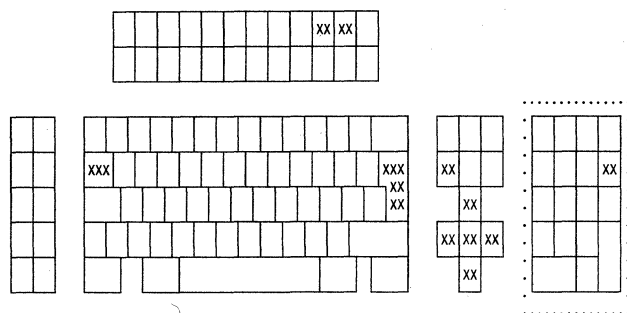
IBM Enhanced keyboard

Typewriter keyboard	Enhanced keyboard	Description
Alphabetic		Pressing the alphabetic keys in shift states (⇧, ⌘, or Caps Lock) displays the characters on the front of the keys at the current cursor position in uppercase. Pressing the alphabetic keys in non-shift state displays the characters in lowercase. All alphabetic keys are repeat-action keys.
		If the cursor is not in an input field, pressing these keys cause ✕←→ to appear. Press the Reset key to remove this symbol and to unlock the keyboard.
Backspace		This repeat-action key moves the cursor one position at a time to the left. When the cursor is at the left most position, use of the backspace key will cause the cursor to wrap the line and reappears one line higher on the right side of the screen.

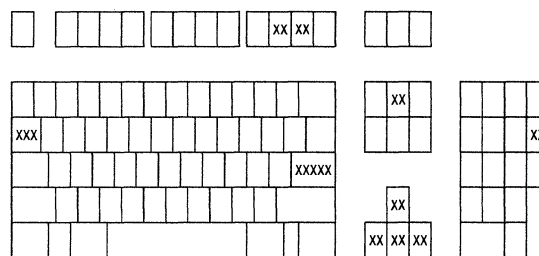
Typewriter keyboard	Enhanced keyboard	Description
Diacritical Mark		
		<p>Diacritical-mark keys are available only on keyboards with the Canadian-Bilingual, French AZERTY, Spanish, Swiss-German, or Swiss-French language feature, unless enabled during the keyboard definition. The keys allow you to enter accented characters.</p> <p>When you press a diacritical-mark key, the accent character appears on the screen but the cursor does not move. Pressing the key that forms the correct accent character combination replaces the existing accent character with the accented character. The Space Bar key forms a correct combination with any diacritical-mark key to produce the accent as a stand-alone character. After you enter the second character of a diacritical-mark key and character key input, the cursor moves one position forward as in normal character entry.</p> <p>You can use the following keys during the diacritical-mark key and character-key input: Alt, AltCr, CrBnk, Quit, and Shift (⇧) or Shift Lock (⏏). Pressing the Reset key after entering a diacritical-mark key (accent symbol) cancels the diacritical-mark key and character-key input and produces a stand-alone accent at the cursor position. The cursor does not move.</p> <p>If you try to enter an invalid combination, the accent is displayed as a stand-alone character, and one of the following symbols appears in the operator information area.</p> <ul style="list-style-type: none"> • ✕ ʼ +? • ✕ ˆ +? • ✕ ˘ +? • ✕ ˙ +? • ✕ ˚ +? • ✕ ˛ +? • ✕ ˜ +? • ✕ ˝ +? <p>Note: The accent in the invalid combination appears as a part of the symbol.</p> <p>Pressing the Reset key removes this symbol and unlocks the keyboard. To correct the error, type again both the accent and the character. When you receive any data from the host computer during your diacritical-mark key and character key input, the keyboard will lock with ✕ ?+ displayed and will exit from the diacritical-mark key mode.</p>
		
		
		
		

Typewriter keyboard	Enhanced keyboard	Description
Numeric, Symbol, and Punctuation Mark		<p>The numeric, symbol, and punctuation mark keys are repeat-action keys.</p> <p>If the cursor is not in an input field, pressing the key causes ✕→ to appear. Press the Reset key to remove this symbol and to unlock the keyboard.</p>
		
		
Shift Lock		<p>When you press this key:</p> <ul style="list-style-type: none"> • The keyboard locks in upper shift • The alphabetic characters (A through Z) are entered as uppercase letters • The symbols on the top of the numeric keys and the punctuation marks on the upper half of the other keys are entered. <p>To return the keyboard to lower shift, press the  key.</p>
		
Space and Space Bar		<p>In an input field, pressing the Space Bar or Space key causes a space to be entered at the current cursor position. The cursor moves to the next cursor position. The Space Bar and the Space keys are repeat-action keys.</p> <p>If the cursor is not in an input field, pressing the key causes ✕→ to appear. Pressing the Reset key removes this symbol and unlocks the keyboard.</p>
		
Upper Shift		<p>When you either press or hold down this key:</p> <ul style="list-style-type: none"> • The alphabetic characters (A through Z) are entered as uppercase letters • The symbols on the top of the numeric keys and the punctuation marks on the upper half of the other keys are entered. <p>The symbol  appears in the operator information area when you press the  key.</p>
		

Cursor Control Keys

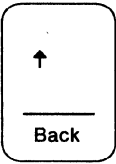
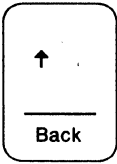
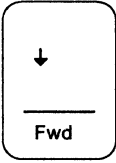
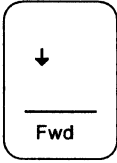
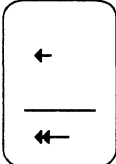
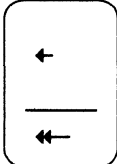
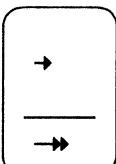
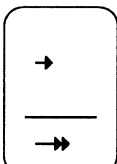
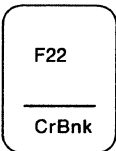
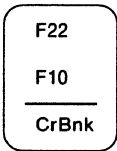
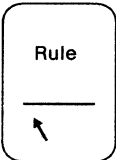
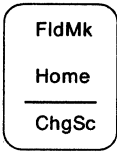


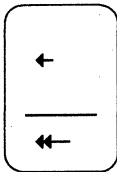
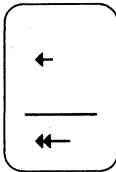
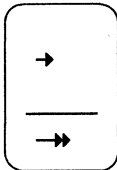
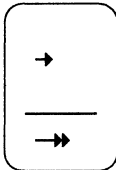
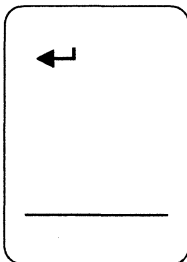
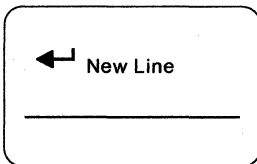
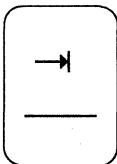
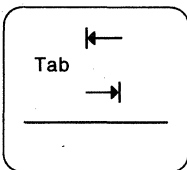
104/122/124-key keyboard



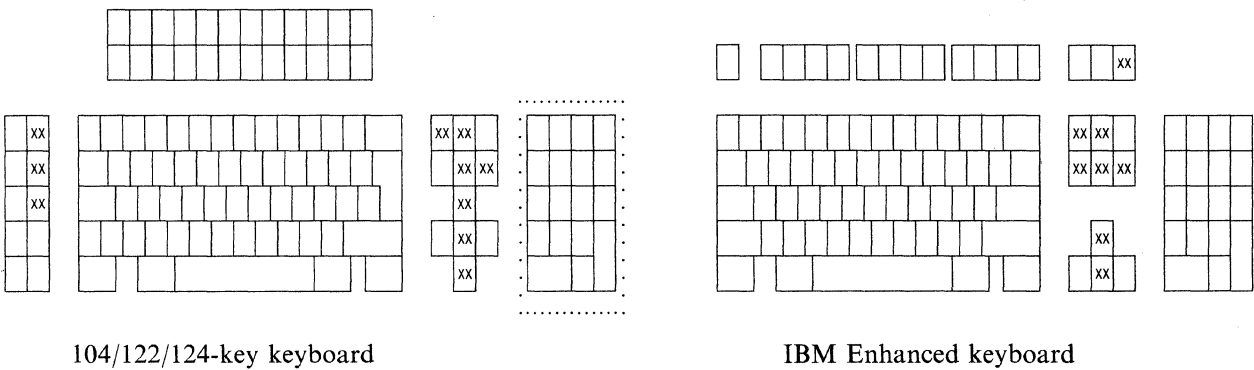
IBM Enhanced keyboard


Typewriter keyboard	Enhanced keyboard	Description
Alternate Cursor		
		<p>Pressing the Alternate Cursor (AltCr) key while holding the Alt key changes from the shape of the cursor. The cursor changes the underbar cursor _ to the block cursor █ or vice versa.</p>
Back Tab		
		<p>This key moves the cursor back to the first position of an input field.</p> <p>If the cursor is in an input field, but is not at the first position in that field, press the Back Tab (←) key to move the cursor back to the first character position in the field.</p> <p>When the cursor is not in an input field, or in the first position of an input field, and if you press the Back Tab key, the cursor moves to the first position of the previous input field.</p> <p>If the screen is unformatted, or does not contain input fields, pressing the Back Tab key moves the cursor to row 1, column 1 of the screen.</p> <p>The Back Tab key is a repeat-action key.</p>

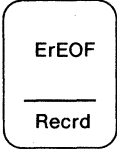
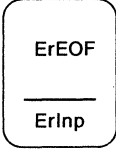
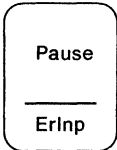
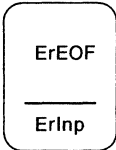
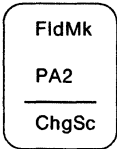
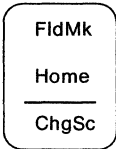


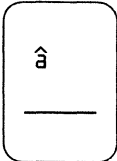
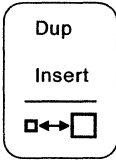

Typewriter keyboard	Enhanced keyboard	Description
Cursor		Moves the cursor in the direction of the arrow.
		The cursor up and down keys are used to move the cursor one position at a time in the direction of the arrow.
		These keys move the cursor to any position on the screen. When either key is held down and the cursor moves off the screen edge, it reappears in the same column, on the opposite side of the screen.
		The cursor left and right keys are used to move the cursor to any position on the screen. When you hold down the cursor right key and the cursor reaches the right edge of the screen, it reappears one line lower on the left side; that is, the cursor wraps. The cursor also wraps when you hold down the cursor left key at the left edge of the screen. It reappears one line higher on the right side of the screen.
		These keys are repeat-action keys.
Cursor Blink		Pressing the Cursor Blink (CrBnk) key while holding down the Alt key turns on and off the blinking of the cursor.
		
Cursor Home		Pressing the Cursor Home (↶) key (while holding down the Alt key for the 104/122/124-key keyboard only) causes the cursor to move to the first input position of the screen.
		The cursor moves to row 1, column 1 of the screen if the screen is unformatted or has no input fields.

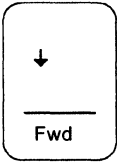
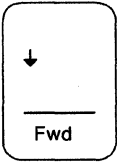
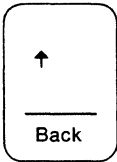
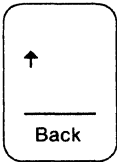
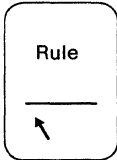
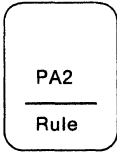
Typewriter keyboard	Enhanced keyboard	Description
Double-speed Cursor		Pressing these keys while holding down the Alt key moves the cursor two positions at a time in the direction of the arrow. These keys are repeat-action keys.
		
		
New Line		
		This key moves the cursor to the first input position in the next line. If there are no input positions, the cursor moves to row 1, column 1 of the screen. If the screen is unformatted, the cursor moves to the first character position of the next line. The New Line key wraps the cursor from the end of the screen to the beginning of the screen. This key is a repeat-action key.
Tab		The Tab key is a repeat-action key that allows you to move the cursor from the current position to the first position of the next input field. If there are no input fields after the current cursor position, the cursor moves to the first character position of the first input field in the screen. If the screen is not formatted or does not contain input fields, pressing this key moves the cursor to row 1, column 1 of the screen.
		

Screen Control Keys

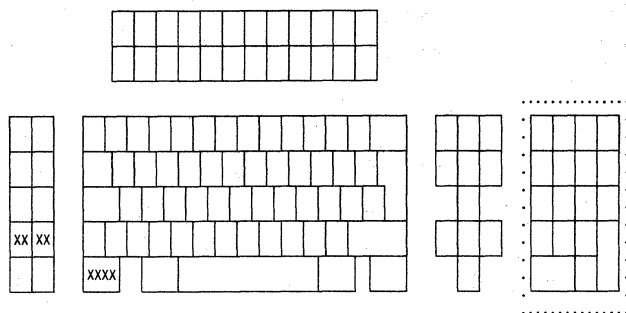


Typewriter keyboard	Enhanced keyboard	Description
Clear		This key blanks the current screen except for the cursor, the separator line, and the operator information area.
<div>Clear</div>	<div>Pause Clear</div>	
Delete Character		Pressing the Delete Character key deletes data from an input field. When you press this key, the character at the cursor location is deleted, and all characters to the right of the cursor (in the same input field) shift one position to the left. Null characters are inserted into the right end of the field as the characters in the field are shifted left.
<div>↵</div>	<div>Delete DelWd</div>	If you press the Delete Character key when the cursor is not located in an input field, ↵ appears. Press the Reset key to remove the symbol and to unlock the keyboard. The Delete Character key is a repeat-action key.
Duplicate		Pressing the Dup key while holding down the  key places the symbol ↵ on the screen. The cursor moves to the first position of the next input field. Handling of the symbol is dependant on the application program.
<div>Dup PA1</div>	<div>Dup Insert</div>	Pressing this key when the cursor is not in an input field will cause ↵ to appear in the operator information area. To remove the symbol and to unlock the keyboard, press the Reset key.

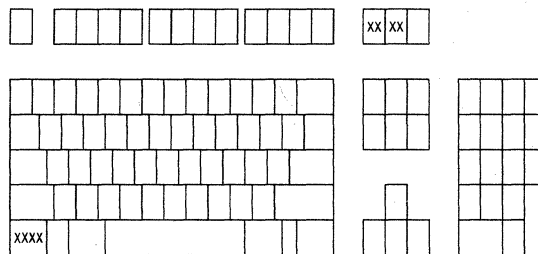
Typewriter keyboard	Enhanced keyboard	Description
Erase End-of-field		
		<p>This key erases all characters from the cursor position to the end of the field while the cursor is in an input field. The cursor does not move.</p> <p>On the unformatted screen, pressing this key erases all characters from the cursor position to the end of the screen.</p> <p>Pressing this key when the cursor is not in an input field will cause ✕←→ to appear in the operator information area. To remove this symbol and to unlock the keyboard, press the Reset key.</p>
Erase Input		
		<p>Pressing this key while holding down the Alt key erases the contents of all input fields in the screen and moves the cursor to the beginning of the first input field. If the screen has no input field, the cursor moves to row 1, column 1 of the screen; no data is erased.</p> <p>If the screen is unformatted, this key clears the screen and moves the cursor to row 1, column 1 of the screen.</p>
Field Mark		
		<p>Pressing this key while holding down the  key places the symbol  on the screen. The cursor moves to the next input position. Handling of the symbol is dependant on the application program.</p> <p>Pressing this key when the cursor is not in an input field will cause ✕←→ to appear in the operator information area. To remove this symbol and to unlock the keyboard, press the Reset key.</p>
Insert Mode		
		<p>This key places the keyboard in insert mode. The Insert symbol  appears in the operator information area. Pressing this key allows you to insert a character into an existing input field without writing over existing data. Null characters, displayed as blanks, must be in the rightmost positions of the field where the insert will be performed.</p> <p>When a new character is inserted at the cursor location, characters to the right of the cursor will shift one position to the right.</p> <p>If you attempt to insert more characters than there are nulls, ✕→ appears in the operator information area, and the keyboard locks. Pressing the Reset key removes the symbol and unlocks the keyboard. To turn off insert mode, press the Reset key.</p> <p>The following keys also turn off insert mode.</p> <p>Attn, Clear, Test, Enter, SysRq, PA1 - PA3, and F1 - F24</p>

Typewriter keyboard	Enhanced keyboard	Description
<p>Forward</p> 		<p>If the contents that were sent from the host system are larger than the display screen, the screen scrolls up.</p>
<p>Backward</p> 		<p>If the contents that were sent from the host system are larger than the display screen, the screen scrolls down.</p>
<p>Rule</p> 		<p>Pressing this key (while pressing and holding down the Alt key for the IBM Enhanced keyboard) turns on and off the rule line on the screen.</p>

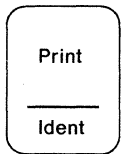
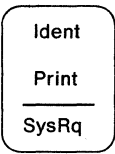







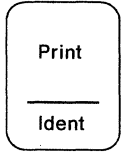
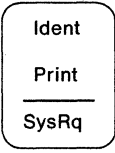

Local Function Keys






104/122/124-key keyboard

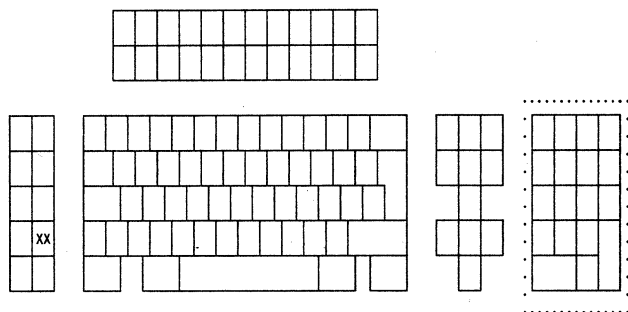


IBM Enhanced keyboard

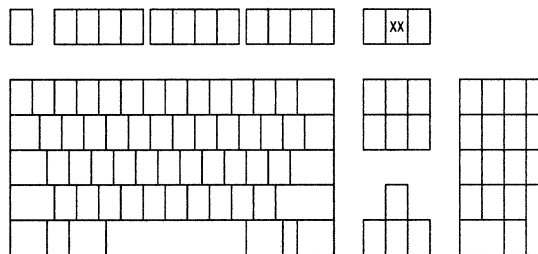
Typewriter keyboard	Enhanced keyboard	Description
<p>Print</p> 		<p>Pressing the Print key places the display station in print mode or sends the screen data to the printer that is assigned to your display station. The number   nn in the operator information area indicates to which printer the screen data is sent.</p> <p>✕  ✕ appears, if any of the following conditions occurs:</p> <ul style="list-style-type: none"> • No printer status indicator is present •   ?? is present •   nn is present and nn identifies a printer that is actually a display station or not defined to accept your print data. <p>Press the Reset key to remove this symbol and to unlock the keyboard.</p>
<p>Print ID</p> 		<p>Pressing this key while holding down the Alt () key, requests a change to either your printer number (ID) or printer class, or causes the existing printer number to appear. The printer-status indicator displayed in the operator information area tells which action occurred.</p> <p>The printer number is the address that the control unit recognizes as the printer.</p>

Typewriter keyboard	Enhanced keyboard	Description
<div>Quit</div> <div> <div>Reset</div> <hr/> <div>Quit</div> </div>	<div> <div>Reset/ Ctrl</div> <hr/> <div>Quit</div> </div>	<p>Pressing this key while holding down the Alt key cancels the printing and unlocks the keyboard when either of  or  appears in the operator information area.</p> <p>Note: The Quit key cancels the printing of data that has not been sent to the printer. For this reason, some or all data may be printed even if you press the Quit key.</p> <p>The Quit key may also be used to remove  appearing in the operator information area.</p> <p>The Quit key does not affect the printing requested from a host system.</p>

Test Keys



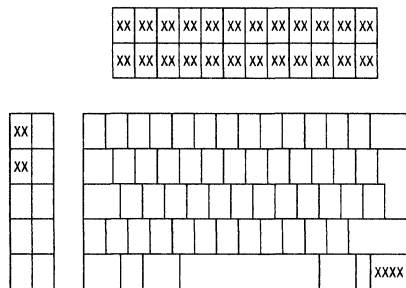
104/122/124-key keyboard



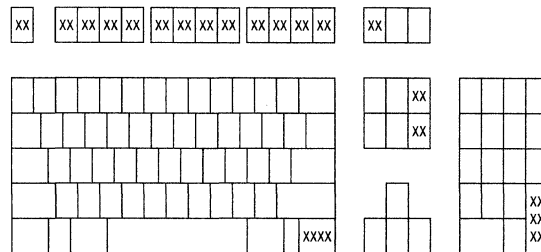
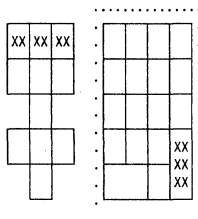
IBM Enhanced keyboard

Typewriter keyboard	Enhanced keyboard	Description
Test		
<div>Copy</div> <div>Play</div> <div>Test</div>	<div>Help</div> <div>Test</div>	<p>Pressing this key while holding down the Alt key places the display station in online test mode. Pressing the Test key while holding down the Alt key again causes the display station to exit from online test mode. Refer to page 3-6 for details.</p> <p>Warning: Pressing the Test key may detach the display station from the host application program and cause a loss of data.</p>

Host Function Keys



104/122/124-key keyboard

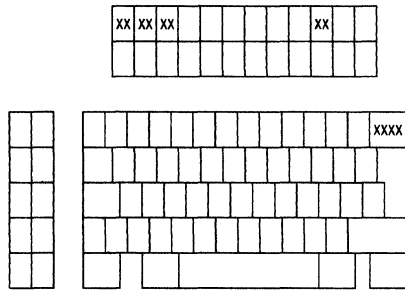


IBM Enhanced keyboard

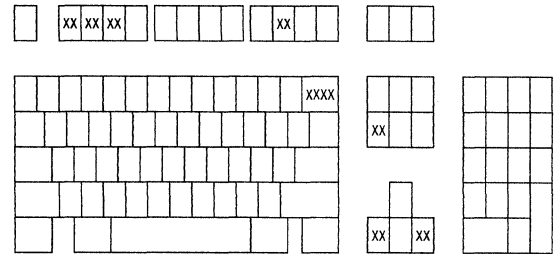
Typewriter keyboard	Enhanced keyboard	Description
Attention		
		<p>This key is used to interrupt the application program. The Attention key works only when <u>E</u> appears in the operator information area. If you press the Attention (Attn) key when <u>E</u> is not present, X - f appears in the operator information area.</p>
Cursor Select		
		<p>This key is used in place of a selector light pen. There are two types of detectable fields: (1) selection fields and (2) attention fields. Use the Cursor Select (CrSel) key to select items in selection fields or to notify the program of your choice by selecting an attention field.</p> <p>If you press the Cursor Select key in a field not defined as selectable, X ← f → appears. Press the Reset key to remove this symbol and to unlock the keyboard.</p>
Enter		
		<p>When ■ or □ is present, this key transmits data from the screen to an application program. If neither symbol is present, X - f appears. Press the Reset key to remove this symbol and to unlock the keyboard.</p> <p>This key does not change the keyboard shift status of the display station, but it does cancel insert mode.</p>
Function		
		<p>The function keys (F1 - F24) provide a means of communicating with the application program. Each Function key sends a particular signal to the application program.</p> <p>If ■ is not present, pressing a function key causes X - f to appear. Press the Reset key to remove this symbol and to unlock the keyboard.</p> <p>When <u>E</u> is displayed in the operator information area, pressing a function key while sending data to the host computer causes X ?+ to appear. Press the Reset key to remove this symbol and to unlock the keyboard.</p>

Typewriter keyboard	Enhanced keyboard	Description						
Program Access								
<div><div>Dup</div><div>PA1</div><div></div></div>	<div><div>PA3</div><div>PA1</div><div>Jump</div></div>	<p>The program access keys provide a means of communicating with the application program. The application program defines their use.</p> <p>When E is displayed and ■ is not present in the operator information area, pressing a PA key causes ✕ - f to appear. Press the Reset key to remove this symbol and to unlock the keyboard. Pressing a PA key while sending data to the host computer causes ✕ ?+ to appear. Press the Reset key to remove this symbol and to unlock the keyboard.</p> <p>Note: The PA3 key can be used only when the display station is attached to a control unit that supports this key.</p>						
System Request								
<div><div>Attn</div><div>SysRq</div></div>	<div><div>Ident</div><div>Print</div><div>SysRq</div></div>	<p>When E is displayed in the operator information area, pressing this key while holding down the Alt key switches ownership of the screen between the application program and the System Services Control Point (SSCP).</p> <p>When ■ or ? appears, pressing the SysRq key while holding down the Alt key:</p> <ul style="list-style-type: none">• Erases the screen• Moves the cursor to row 1 and column 1 on the screen• Replaces ■ or ? with Ⓢ. <p>Pressing the SysRq key while holding down the Alt key again replaces Ⓢ with ■ or ?.</p> <p>Note: When either A or E is displayed in the operator information area, pressing the SysRq key while holding down the Alt key causes ✕ - f to appear, if none of the following symbols are present:</p> <table><tr><td>System Operator</td><td>Ⓢ</td></tr><tr><td>My Job</td><td>■</td></tr><tr><td>Unowned</td><td>?</td></tr></table> <p>Press the Reset key to remove ✕ - f and to unlock the keyboard.</p>	System Operator	Ⓢ	My Job	■	Unowned	?
System Operator	Ⓢ							
My Job	■							
Unowned	?							

Entry Assist Function Keys

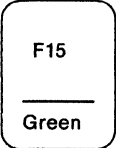
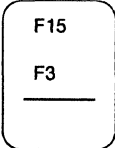

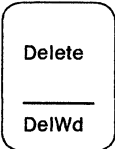



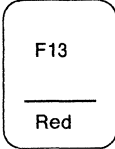
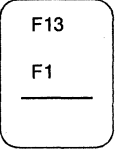
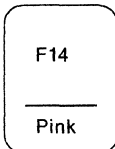
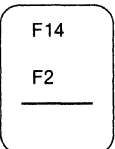
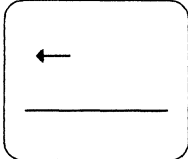
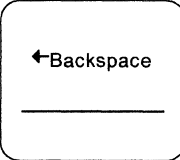
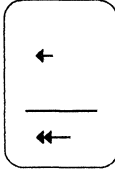
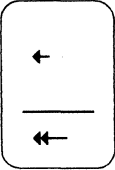
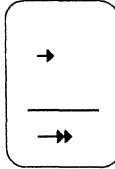
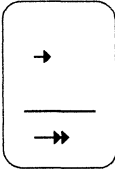
104/122/124-key keyboard



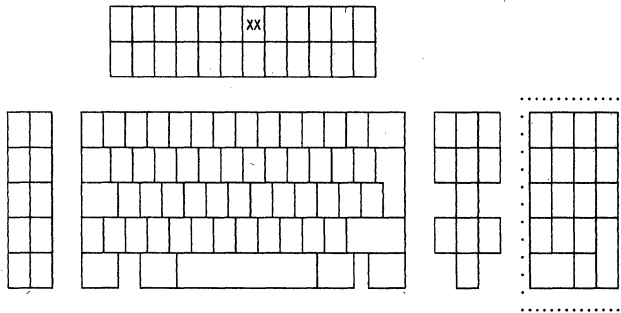
IBM Enhanced keyboard

Note: When “Keyboard layout” is set to “78EMU” in the setup mode, the entry assist functions keys are defined differently. Refer to *IBM 3270 Information Display System Entry Assist User's Guide* for details.

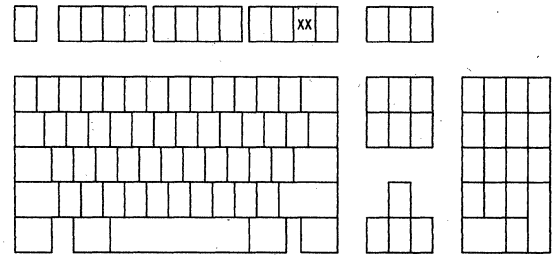
Typewriter keyboard	Enhanced keyboard	Description
<p>Change Format</p> 		<p>When you press the ExSel key, then press this key while in document mode, the display station enters change-format mode and a scale line appears in the operator information area. In change-format mode, you can change the format control settings, such as screen margins and end-of-line signal. Note that in this mode, no operator messages are displayed in the operator information area. When pressed again, the display station exits from change-format mode.</p>
<p>Delete Word</p> 		<p>This key is operative only in document mode.</p> <p>The Delete Word key, while holding down the Alt key, deletes the word the cursor is positioned under and the following space or null in an input field. If the cursor is in the middle of a word (not a first character), pressing this key deletes the characters from the current cursor position to the end of the word. All the words to the right of the deleted word (on the same line and in the same field) shift to the left.</p> <p>When you press the Delete Word key and the cursor is not in an input field,  appears in the operator information area and the keyboard is locked.</p> <p>If the cursor is under a blank character, the Delete Word key deletes the blank character. This key is a repeat-action key.</p>

Typewriter keyboard	Enhanced keyboard	Description
Document On/Off		
		When you press the ExSel key, then press the Document On/Off key, as indicated on the keyboard overlay, the display station enters into document mode and the DOC symbol appears in the operator information area. The document mode symbol means that the display station is in document mode; The word wrap symbol (↵) means that the display station turns on the word-wrap function. Pressing this key again causes the display station to exit from document mode. However, the display station retains all other settings (screen margins, the audible end-of-line signal, tab sets, home position and word-wrap mode). Entering document mode restores the settings.
Word Wrap On/Off		
		When you press the ExSel key, then press this key while the display station is in document mode, the word wrap symbol (↵) disappears from the operator information area and word-wrap is turned off. Pressing this key again, turns on word-wrap. Word-wrap moves the last word on a row to the next row, if the word would otherwise overrun the right margin. If you press this key while the display station is not in document mode, the keyboard locks and ✕ - f appears in the operator information area.
Error-correcting Backspace		
		This key is defined as the Error-correcting Backspace key when the display station is in document mode and the word-wrap is turned on. Using this key moves the cursor one position at a time to the left and a character on the cursor position is deleted.
Next/Previous Word		
		These keys are defined as the Next/Previous keys when the display station is in document mode. Pressing the → key while holding down the Alt key moves the cursor to the first position of the next word. Pressing the ← key while holding down the Alt key moves the cursor to the first position of the previous word.
		

Response Time Monitor Key



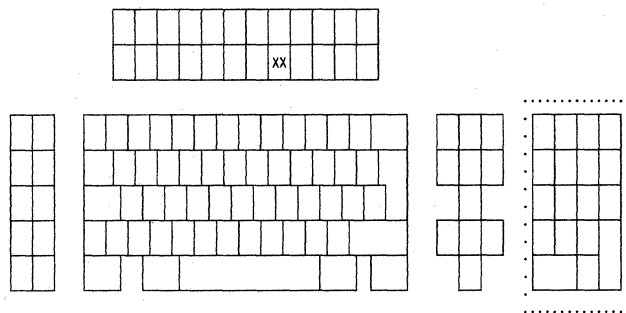
104/122/124-key keyboard

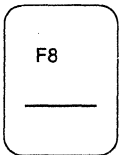


IBM Enhanced keyboard

Typewriter keyboard	Enhanced keyboard	Description
Response time monitor		<p>If the control unit enables the response time monitor function, using this key in extended select mode (with the ExSel key) allows you to check the response time of the host computer. The time appears in columns 19 through 26 in the operator information area.</p> <p>To check the response time of your host system; press the ExSel key, and then press the RTM key. One of the following symbols appears:</p> <p>✕ ? + The control unit does not allow the display station to display the response time</p> <p>⌚ : The display station is not allowed to display the response time</p> <p>⌚ :ss.t ss for seconds and t for tenths of seconds</p> <p>⌚ mm:ss mm for minutes and ss for seconds</p> <p>⌚ :??.? response time monitoring is cancelled.</p> <p>To cancel the response time monitor, press the ExSel key, and then press the RTM key again.</p> <p>For additional information about the response-time-monitor function, refer to the <i>IBM 3174 Subsystem Control Unit Help Desk Reference</i> or the <i>IBM 3274 Control Unit Description and Programmer's Guide</i>.</p>

APL On/Off Key



Typewriter keyboard	Enhanced keyboard	Description
<p>APL On/Off</p> 		<p>Pressing this key after you pressed the ExSel key, turns on or off the APL mode of the display station. The control unit has to be correctly customized for APL for this operation. The appropriate control unit customization and keyboard layout ID setting is required.</p>

Chapter 5. Problem Solving

This section helps you when you have a problem during display station operation. If you see symbols in the operator information area, check the meaning of the symbols first. Refer to Chapter 3, “Operator Messages” on page 3-1.

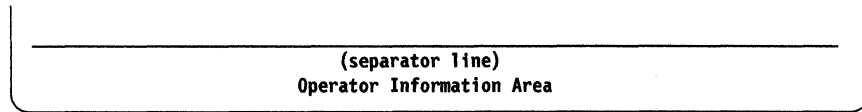


Figure 5-1. Operator Information Area and Separator Line

Requests for service should be directed to the IBM service center by dialing the appropriate number. Refer to “Request for Service” on page 5-33 for details.

Problem Solving Initial Checks

This section guides you in isolating the failing part of your display station as well as in identifying operational errors.

1. Does the alarm sound continuously?

Yes, go to “Alarm sounds continuously” on page 5-7.

No, go to step 2.

2. Does any operator message appear in the operator information area?




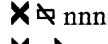
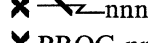
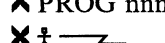

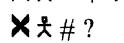



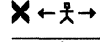



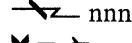
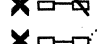
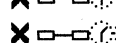
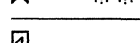




Yes, go to “Operator Messages” on page 5-2, then find your symbol from the chart, and perform the appropriate action.

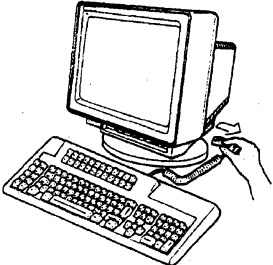

No, go to “Problem Symptom” on page 5-5, then find your symptom from the chart, and perform the appropriate action.

Operator Messages




Note: If you would like to know more detailed meanings of the following symbols, see Chapter 3, "Operator Messages" on page 3-1.

Symbol	Action
	You must wait for the function to complete.
	Wait or press the Reset key.
	Press the Reset key and retry the operation. If the symptom still appears, contact your supervisor. (n: 0-9)
	
	
	
	
	
	
	Press the Reset key and retry the operation.
	
	Press the Reset key and move the cursor or take another action.
	Press the Reset key. Correct the entry.
	Press the Reset key and enter a number.
	Press the Reset key to restore the keyboard.
	Contact your supervisor. (n: 0-9)
	
	
	
	Do you see another symbol at the next column of this symbol?
I or i	Yes, these indicators mean that the control unit or the host system is in ready state. Look for the other problem symptoms. No, contact your supervisor.
S	
N	
4700	
3814	
T	
C	
L	The logic element is failing. Go to "Request for Service" on page 5-33.
2%%	The keyboard layout ID in the setup panel may not match the one defined during the control unit customization. Contact your supervisor.
	Go to "Printer Problem" on page 5-25.

Continued on the next page

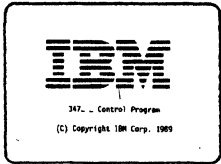
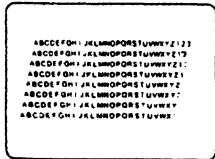
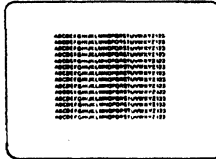
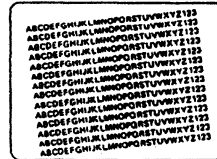

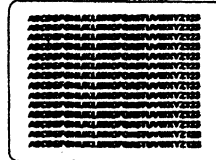

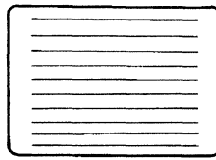
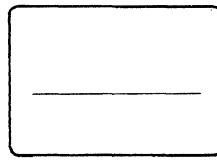
Symbol	Action
LK	<ol style="list-style-type: none"> 1. Set the power switch to Off; then wait for a few seconds. 2. Set the power switch to On. 3. Does "LK" still appear? Yes, go to step 4. No, continue the operation. 4. Set the power switch to Off. 5. Disconnect the keyboard cable from the logic element.  <ol style="list-style-type: none"> 6. Set the power switch to On. 7. Does "LK" still appear? Yes, the logic element is failing. Go to "Request for Service" on page 5-33. No, the keyboard is failing. Go to "Request for Service" on page 5-33.
K	<ol style="list-style-type: none"> 1. Set the power switch to Off. 2. Make sure the keyboard cable is tightly connected.  <ol style="list-style-type: none"> 3. Set the power switch to On. 4. Wait ten seconds. 5. Does "K" still appear? Yes, the keyboard is failing. Go to "Request for Service" on page 5-33. No, continue the operation.
M1	<ol style="list-style-type: none"> 1. You can continue the operation by pressing the Reset key. 2. If you continue, however, the alarm and clicker volumes and other setup values may need to be set again. See Appendix A, "Display Station Controls and Adjustments" on page A-1. 3. If this error occurs frequently, the logic element is failing. Go to "Request for Service" on page 5-33.

Continued on the next page

Symbol	Action
M2	<ol style="list-style-type: none"> 1. You can continue the operation by pressing the Reset key. 2. Your serial number is invalid. See "Serial Number" on page A-5 to enter a correct serial number. 3. If this error occurs frequently, the logic element is failing. Go to "Request for Service" on page 5-33.
M3	<ol style="list-style-type: none"> 1. You can continue the operation by pressing the Reset key or any valid key. 2. If you continue, however, the Record/Play keystroke sequences may have to be entered again. 3. If this error occurs frequently, the logic element is failing. Go to "Request for Service" on page 5-33.
M12	<ol style="list-style-type: none"> 1. You can continue the operation by pressing the Reset key. 2. If you continue, however, the alarm and clicker volumes and other controls may need to be set again. 3. Your serial number is invalid. See "Serial Number" on page A-5 to enter a correct serial number. 4. If this error occurs frequently, the logic element is failing. Go to "Request for Service" on page 5-33.
	<ol style="list-style-type: none"> 1. Turn the security key counterclockwise. <div data-bbox="467 871 678 1092" data-label="Image"> </div> <ol style="list-style-type: none"> 2. Turn the security key clockwise. 3. Does " " still appear? Yes, go to step 4 on page 5-4. No, continue the operation. 4. Set the power switch to Off; then wait for a few seconds. 5. Set the power switch to On. 6. Does " " still appear? Yes, the security keylock of the logic element is failing. Go to "Request for Service" on page 5-33. No, continue the operation.

Problem Symptom

Find your symptom from the following symptoms and perform the appropriate action.

Problem Category	Symptom	Page
Alarm	Alarm sounds continuously	5-7
	Alarm does not sound	5-7
Display	Screen is completely blank	5-9
	Only a horizontal line and a cursor are displayed	5-11
	IBM logo is displayed	5-11
		
	An unexpected cursor appears on the screen	5-12
	Screen Problem	5-13
	<div>Distorted</div>  <div>Shrunk</div>  <div>Tilted</div> 	
	<div>Expanded</div>  <div>Out of Focus</div> 	
	Screen is too dark	5-13
	Brightness knob does not work	5-13
	Contrast knob does not work (for monochrome models)	5-13
	Screen is wavy	5-13
	  	
	The color is not correct	5-15
	Characters or symbols on the screen have extra or missing dots	5-18

Problem Category	Symptom	Page
	Characters or symbols on the screen are moving vertically or horizontally	5-18
	"Offline Setup" panel is displayed every time the power switch is set to On	5-18
	<div> Offline Setup </div> <div> Move cursor to desired selection and press ENTER. </div> <div> <div>Customize display station</div> <div>Update serial number</div> <div>Test display station</div> </div>	
Keyboard	Characters are typed, but are not displayed on the screen	5-19
	Keyboard clicker does not sound	5-19
	A single character is typed, but multiple characters are displayed on the screen	5-21
	An unexpected character (a character different from what should appear) is displayed on the screen	5-21
	Typematic keys do not work	5-21
	Characters are displayed on the screen without typing	5-21
Power-on Light	The power-on light does not stay on	5-22
Printer	Printer does not work	5-25
Mechanical	The security key does not work	5-27
	The cover is damaged	5-27
	The stand or the lift-stand is damaged	5-27

Alarm Problems

Symptom

Alarm sounds continuously.

1. Does the power-on light stay on?
Yes, go to step 2.
No, go to "Power-on Light Problem" on page 5-22.
2. Set the power switch to Off; then wait for a few seconds.
3. Set the power switch to On.
4. Does the alarm still sound continuously?
Yes, go to step 5.
No, continue the operation.
5. Does the alarm sound repeatedly?
Yes, your display element may not be the correct one for this display station.
Install a correct display element.
No, the logic element is failing. Go to "Request for Service" on page 5-33.

Symptom

Alarm does not sound.

1. While pressing and holding down the Alt key (Shift key for the IBM Enhanced Keyboard), press the Setup key.
2. Is the screen completely blank?
Yes, go to "Screen is completely blank" on page 5-9.
No, go to step 3.
3. Does the "Online Setup" panel appear?

Online Setup

Move cursor to desired selection and press ENTER.

Setup display

Setup printer

Go to offline setup

- Yes**, go to step 4.
No, the keyboard is failing. Go to "Request for Service" on page 5-33.
4. Press the Enter key to select "Setup display".

5. The "Display Setup" panel should appear.

Display Setup		
Move cursor to desired choice, then press SPACE BA		
Rule Line		
Style	Horizontal	Vertical
Color	White	Green
Follows cursor	Yes	No
Row/column indicator . .	On	Off
Cursor		
Style	Underline	Block
Blink	Yes	No

6. Press the F8 key to go to the next screen.
7. Move the cursor to select "High" in the Alarm Volume field and press the Space Bar.

Display Setup			
Move cursor to desired choice, then press SPACE BAR to select.			
Typematic			
Rate	Normal	Fast	
Delay	Short	Normal	Long
Clicker			
Click	Yes	No	
Volume	Off	1	2
	3	4	High
Alarm volume	Off	1	2
	3	4	High

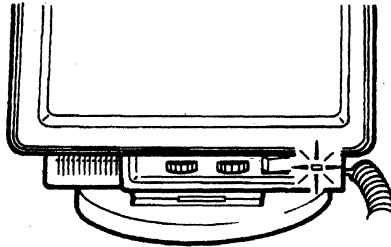
8. The display attribute of the word "High" should change to highlight (yellow for color models).
9. Move the cursor to "1" in the Alarm Volume field and press the Space Bar. Listen to the sound level.
10. Move the cursor to "4" in the Alarm Volume field and press the Space Bar. Listen to the sound level.
11. Does the alarm sound change?
Yes, go to step 12.
No, the logic element is failing. Go to "Request for Service" on page 5-33.
12. Move the cursor to select a comfortable sound level and press the Space Bar.
13. While pressing and holding down the Alt key (Shift key for the IBM Enhanced Keyboard), press the Setup key; then continue the operation.

Display Problems

Symptom

Screen is completely blank.

1. Set the power switch to Off.
2. Make sure the power cord is tightly connected at both ends (electrical outlet and display element).
3. Wait approximately one minute.
4. Set the power switch to On.
5. Does the power-on light stay on?

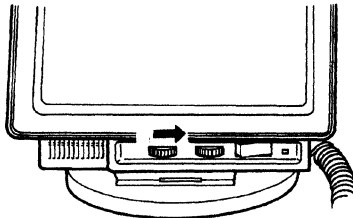


Yes, go to step 6.

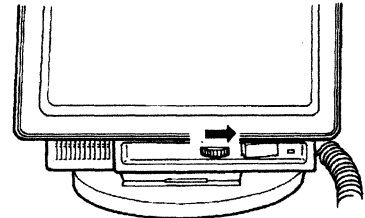
No, go to "Power-on Light Problem" on page 5-22.

6. Turn the brightness knob all the way to the right.

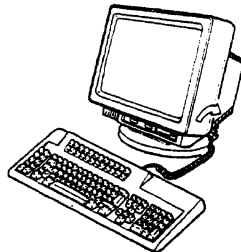
Monochrome Model



Color Model



7. Turn the security key clockwise and wait ten seconds.



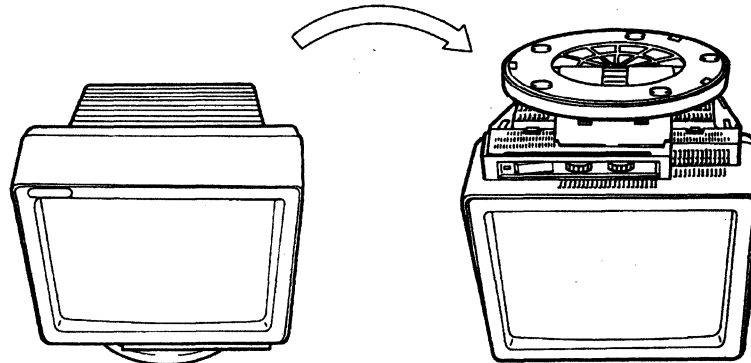
8. Does the problem still exist?

Yes, go to step 9.

No, continue the operation.

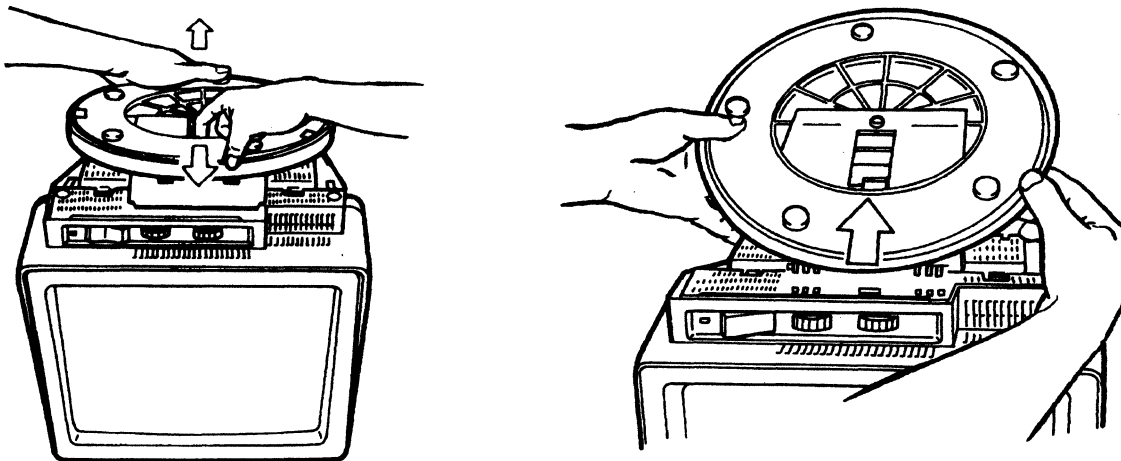
9. Set the power switch to Off.
10. Unplug the power cord from the electrical outlet.

11. Turn the display station upside down so that the screen faces you.

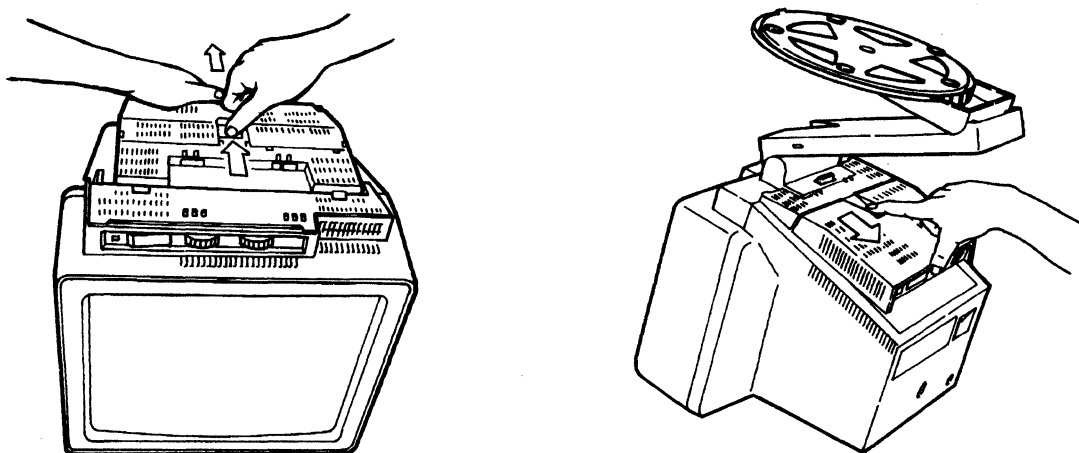


12. If the lift-stand is attached to your display element, go to step 14.

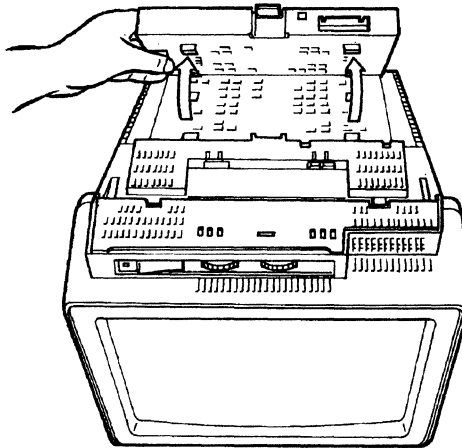
13. Pinch the blue latch and pull up the edge of the stand to remove the stand from the display element.



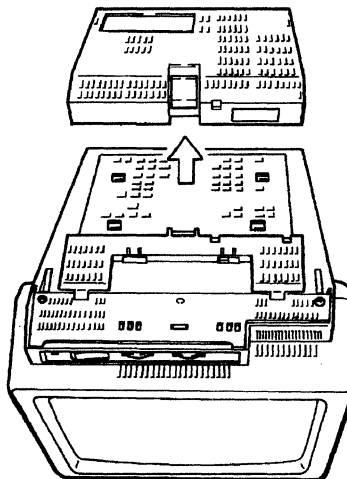
14. Pinch the latch of the logic element and push the logic element to unlock it from the display element.



15. Pull up the edge of the logic element to remove the logic element from the display element.



16. Remove the logic element from the display element.



17. Plug in the power cord into the electrical outlet.
18. Set the power switch to On.
19. Is the screen completely blank?
 Yes, the display element is failing. Go to "Request for Service" on page 5-33.
 No, the logic element is failing. Go to "Request for Service" on page 5-33.

Symptom

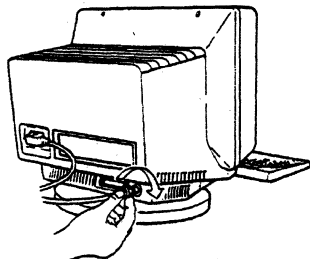
- Only a horizontal line and a cursor are displayed.
- IBM logo is displayed.

1. Press the Space Bar.
2. Do any characters appear?
 Yes, continue the operation.
 No, go to step 3.
3. Set the power switch to Off.
4. Unplug the power cord from the electrical outlet.

DANGER

Do not touch the communication cable during an electrical storm. Communication cables can conduct lethal charges of electricity.

5. Make sure the communication cable is tightly connected.



6. Plug the power cord into the electrical outlet.
7. Set the power switch to On and wait ten seconds.
8. Does the problem still exist?
Yes, go to "Logic Element Check Procedure" on page 5-31.
No, continue the operation.

Symptom

- An unexpected cursor appears on the screen.

1. While pressing and holding down the Alt key (Shift key for the IBM Enhanced Keyboard), press the Setup key.
2. The "Online Setup" panel should appear.

```
Online Setup
-----
Move cursor to desired selection and press ENTER.

Setup display
Setup printer
Go to offline setup
```

3. Press the Enter key to select "Setup display".
4. The "Display Setup" panel should appear.

```
Display Setup
-----
Move cursor to desired choice, then press SPACE BAR

Rule Line
Style . . . . . Horizontal Vertical
Color . . . . . White Green
Follows cursor . . . . Yes No

Row/column indicator . . On Off

Cursor
Style . . . . . Underline Block
Blink . . . . . Yes No
```

5. Move the cursor to select your desired cursor style and press the Space Bar.

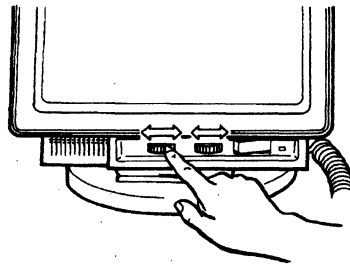
6. Press the F3 key twice.
7. Does the problem still exist?
Yes, the logic element is failing. Go to "Request for Service" on page 5-33.
No, continue the operation.

Symptom

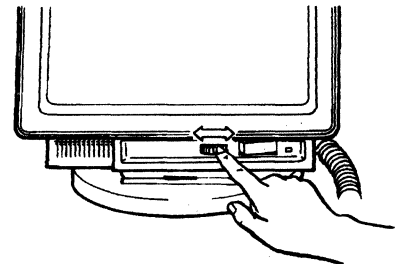
- Screen Problem (distorted, shrunk, tilted, expanded, out of focus, or too dark).
- Brightness control knob does not work.
- Contrast control knob does not work (for monochrome models).

1. Does the alarm sound?
Yes, go to step 2.
No, go to step 4.
2. Does the short alarm sound repeatedly?
Yes, go to step 3.
No, the logic element is failing. Go to "Request for Service" on page 5-33.
3. Your display element may not be the correct one for the display station. Install a correct display element. Does the problem still exist with the correct display element?
Yes, go to step 4.
No, the logic element is failing. Go to "Request for Service" on page 5-33.
4. Turn the brightness (and contrast for monochrome models) control knobs to a comfortable viewing level.

Monochrome Model



Color Model



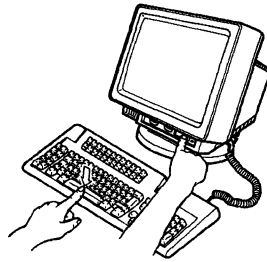
5. Does the problem still exist?
Yes, the display element is failing. Go to "Request for Service" on page 5-33.
No, continue the operation.

Symptom

Screen is wavy.

1. Are there other display stations, motors, or fluorescent lamps that are turned on near your display station?
Yes, go to step 2.
No, go to step 4 on page 5-14.
2. Relocate the electrical appliances (other display stations, motors, or fluorescent lamps) or turn off the power switches of the electrical appliances.
3. Does the problem still exist?
Yes, go to step 4 on page 5-14.

- No**, move your display station or the appliances away from each other. Continue the operation.
4. Set the power switch to Off.
 5. Press and hold down the Space Bar; then set the power switch to On.



6. Hold the Space Bar down and wait for approximately ten seconds.
7. Does the "Offline Setup" panel appear?

Offline Setup

Move cursor to desired selection and press ENTER.

Customize display station

Update serial number

Test display station

Yes, go to step 8.

No, the keyboard is failing. Go to "Request for Service" on page 5-33.

8. Move the cursor to select "Test display station" and press the Enter key.
9. The Offline Test Entry Panel appears on the screen as follows.

Color Model

3472	0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ					
AA0012345						
0151	09F4600	AAAAAAA	AAAAAAA	AAAAAAA		
0000	09F4601	AAAAAAA	AAAAAAA	AAAAAAA		
10111111	10111111	AAAAAAA	AAAAAAA	AAAAAAA		

Monochrome Model

3472	0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ					
AA0012345						
0151	09F4600	AAAAAAA	AAAAAAA	AAAAAAA		
0000	09F4601	AAAAAAA	AAAAAAA	AAAAAAA		
10111111	10111111	AAAAAAA	AAAAAAA	AAAAAAA		

10. Press and hold down the Alt key; then press the F4 key. Make sure the "T 4" with **A** or **B** appears in the operator information area.

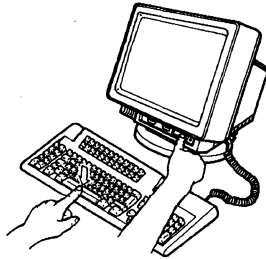
T 4 **A**

11. Does **A** appear?
 - Yes**, go to step 12.
 - No**, go to step 14.
12. Press the F4 key and make sure **A** is replaced by **B**.
13. Go to step 15.
14. Press the F4 key and make sure **B** is replaced by **A**.
15. Does the problem still exist on the screen?
 - Yes**, the display element is failing. Go to "Request for Service" on page 5-33.
 - No**, Press the Reset key twice and continue the operation.

Symptom

The color is not correct.

1. Set the power switch to Off.
2. Press and hold down the Space Bar; then set the power switch to On.



3. Hold the Space Bar down and wait for approximately ten seconds. The "Offline Setup" panel should appear.

Offline Setup

Move cursor to desired selection and press ENTER.

Customize display station

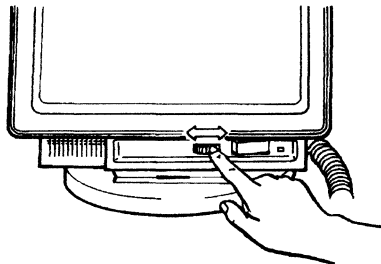
Update serial number

Test display station

4. Move the cursor to select "Test display station" and press the Enter key.
5. The Offline Test Entry panel appears on the screen.

3472	0123456789ABCDEFGHIJKLMNQRSTUWXYZ			
AA0012345				
0151	09F4600	AAAAAAA	AAAAAAA	AAAAAAA
0000	09F4601	AAAAAAA	AAAAAAA	AAAAAAA
10111111	10111111	AAAAAAA	AAAAAAA	AAAAAAA

6. Turn the brightness control knob to a comfortable viewing level.



7. Observe the attribute test pattern.

AAAAAAA	AAAAAAA	AAAAAAA
AAAAAAA	AAAAAAA	AAAAAAA
AAAAAAA	AAAAAAA	AAAAAAA

8. Is the attribute test pattern displayed correctly?

AAAAAAA (blue+normal)	AAAAAAA (red+blink)	AAAAAAA (pink+reverse)
AAAAAAA (green+underscore)	AAAAAAA (turquoise+normal)	AAAAAAA (yellow+normal)
AAAAAAA (white+normal)	AAAAAAA (white+normal)	AAAAAAA (white+normal)

Yes, your display station does not have a problem. Contact your supervisor.

No, go to step 9.

9. Set the power switch to Off; then wait for approximately 15 minutes.

10. Repeat step 2 on page 5-15 through 7; then go to step 11.

11. Is the attribute test pattern displayed correctly?

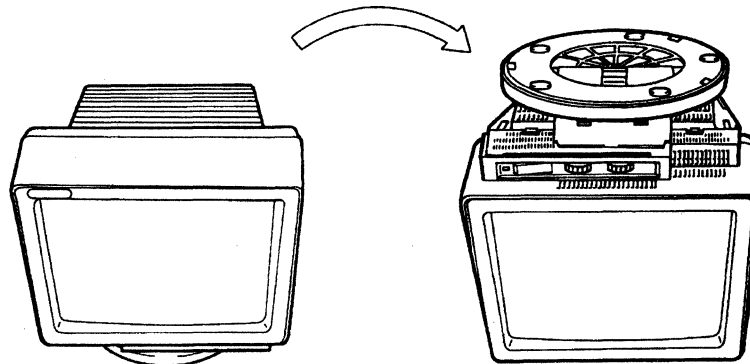
Yes, continue the operation.

No, go to step 12.

12. Set the power switch to Off.

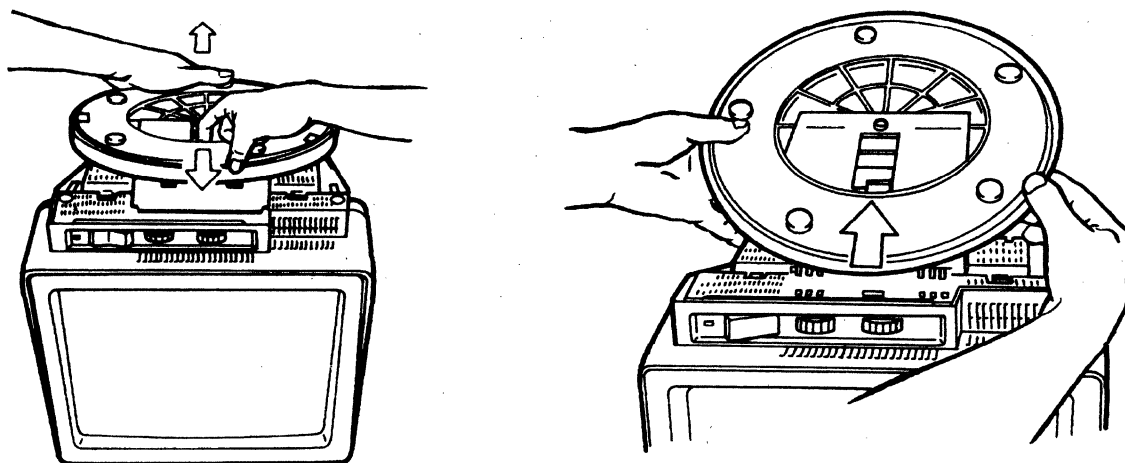
13. Unplug the power cord from the electrical outlet.

14. Turn the display station upside down so that the screen faces you.

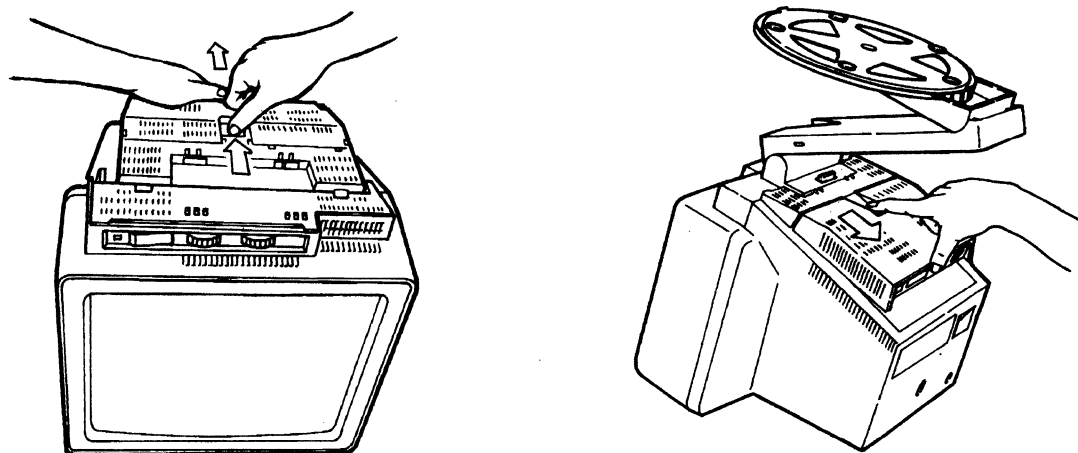


15. If the lift-stand is attached to your display element, go to step 17 on page 5-17.

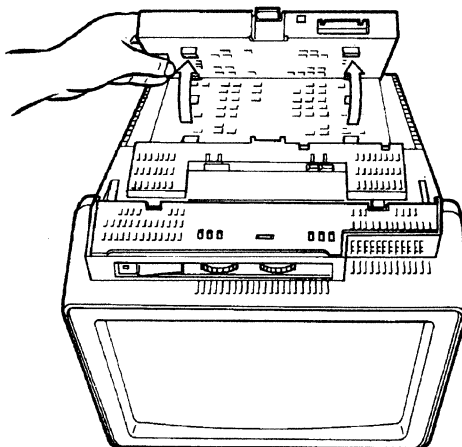
16. Pinch the blue latch and pull up the edge of the stand to remove the stand from the display element.



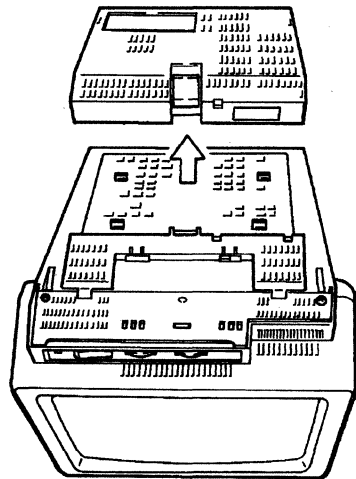
17. Pinch the latch of the logic element and push the logic element to unlock it from the display element.



18. Pull up the edge of the logic element to remove the logic element from the display element.



19. Remove the logic element from the display element.



20. Plug in the power cord into the electrical outlet.
21. Set the power switch to On.
22. Is the screen white?
 Yes, the logic element is failing. Go to "Request for Service" on page 5-33.
 No, the display element is failing. Go to "Request for Service" on page 5-33.

Symptom

Characters or symbols on the screen have extra or missing dots.

The logic element is failing. Go to "Request for Service" on page 5-33.

Symptom

"Offline Setup" panel is displayed every time the power switch is set to On.

1. Set the power switch to Off; then wait for a few seconds.
2. Make sure there is nothing laying on the keyboard.
3. Set the power switch to On.
4. Does the "Offline Setup" panel still appear?
 Yes, go to "Keyboard Test" on page 5-28.
 No, continue the operation.

Symptom

Characters or symbols on the screen are moving vertically or horizontally.

1. Set the power switch to Off; then wait for a few seconds.
2. Set the power switch to On.
3. Does the alarm sound continuously?
 Yes, the logic element is failing. Go to "Request for Service" on page 5-33.
 No, the display element is failing. Go to "Request for Service" on page 5-33.

Keyboard Problems

Symptom

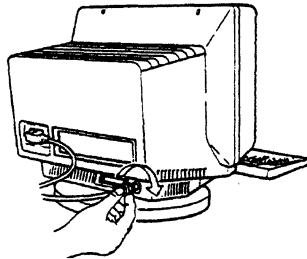
Characters are typed, but are not displayed on the screen.


1. Does the power-on light stay on?
Yes, go to step 2.
No, go to "Power-on Light Problem" on page 5-22.
2. Set the power switch to Off.
3. Unplug the power cord from the electrical outlet.

DANGER

Do not touch the communication cable during an electrical storm. Communication cables can conduct lethal charges of electricity.

4. Make sure the communication cable is tightly connected.



5. Plug in the power cord into the electrical outlet.
6. Set the power switch to On.
7. Does the system indicator (such as , N, I, i, 4700, 3814, T, C, or S) appear in the operator information area?
Yes, go to step 8.
No, go to "Logic Element Check Procedure" on page 5-31.
8. Does the problem still appear?
Yes, go to "Keyboard Test" on page 5-28.
No, continue the operation.

Symptom

Keyboard clicker does not sound.

1. While pressing and holding down the Alt key (Shift key for the IBM Enhanced Keyboard), press the Setup key.
2. Does the "Online Setup" panel appear?

Online Setup
Move cursor to desired selection and press ENTER.
Setup display
Setup printer
Go to offline setup

Yes, go to step 3.

No, the keyboard is failing. Go to "Request for Service" on page 5-33.

- Press the Enter key to select "Setup display".
- The "Display Setup" panel will appear on the display.

Display Setup
Move cursor to desired choice, then press SPACE BA
Rule Line
Style Horizontal Vertical
Color White Green
Follows cursor Yes No
Row/column indicator . . On Off
Cursor
Style Underline Block
Blink Yes No

- Press the F8 key once to go to the next screen.
- Move the cursor to select "Yes" in the "Clicker" field and press the Space Bar.

Display Setup
Move cursor to desired choice, then press SPACE BAR to select.
Typematic
Rate Normal Fast
Delay Short Normal Long
Clicker
Click Yes No
Volume Off 1 2
3 4 High
Alarm volume Off 1 2
3 4 High

- Move the cursor to select "High" in the "Volume" of the "Clicker" field and press the Space Bar.
 - The display attribute of the word "**High**" should change to highlight (yellow for color models).
 - Does the alarm sound change when cursor is moved from 1 to 4 and the Space Bar is pressed?
- Yes, go to step 10.
- No, the display element is failing. Go to "Request for Service" on page 5-33.
- Move the cursor to select a comfortable sound level and press the Space Bar.
 - While pressing and holding down the Alt key (Shift key for the IBM Enhanced Keyboard), press the Setup key; then continue the operation.

Symptom

- A single character is typed, but multiple characters are displayed on the screen.
- An unexpected character (a character different from what should appear) is displayed on the screen.
- Typematic keys do not work.

Go to “Keyboard Test” on page 5-28.

Symptom

Characters are displayed on the screen without typing.

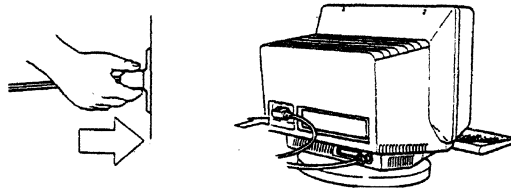
The keyboard is failing. Go to “Request for Service” on page 5-33.

Power-on Light Problem

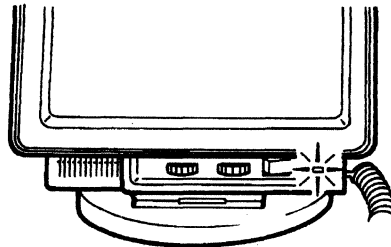
Symptom

The power-on light does not stay on.

1. Set the power switch to Off.
2. Make sure the power cord is tightly connected at both ends (electrical outlet and display element).



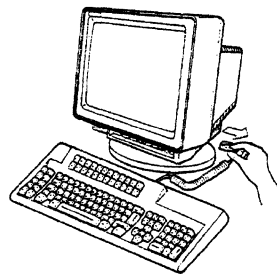
3. Wait approximately one minute.
4. Set the power switch to On.
5. Does the power-on light stay on?



Yes, continue the operation.

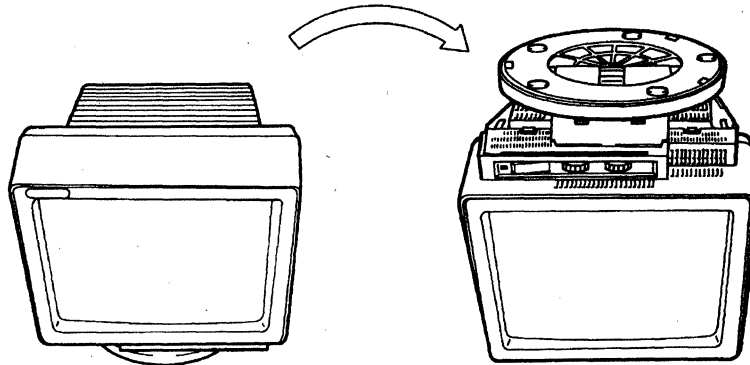
No, go to step 6.

6. Set the power switch to Off.
7. Unplug the power cord from the electrical outlet.
8. Disconnect the keyboard cable from the logic element.



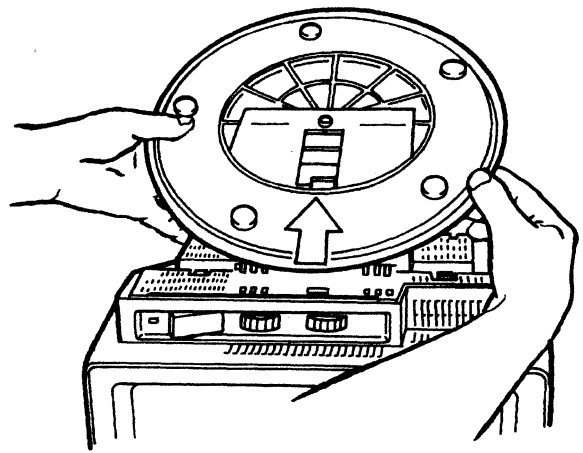
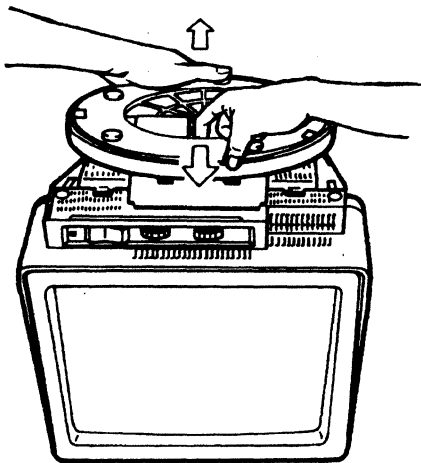
9. Plug in the power cord into the electrical outlet.
10. Wait for approximately 30 seconds.
11. Set the power switch to On.
12. Does the power-on light stay on?
Yes, the keyboard is failing. Go to "Request for Service" on page 5-33.
No, go to step 13.
13. Set the power switch to Off.
14. Unplug the power cord from the electrical outlet.

15. Turn the display station upside down so that the screen faces you.

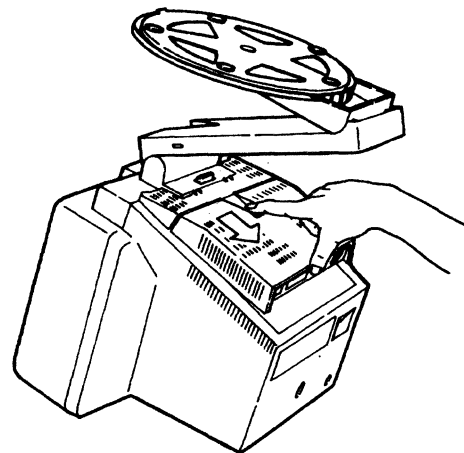
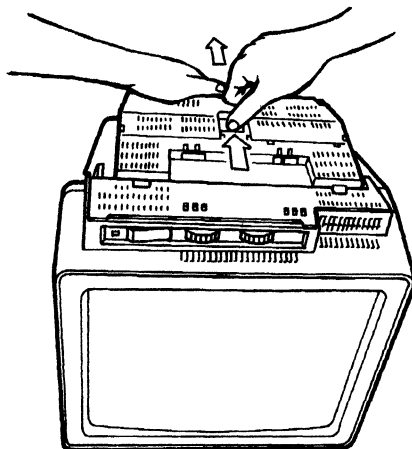


16. If the lift-stand is attached to your display element, go to step 18.

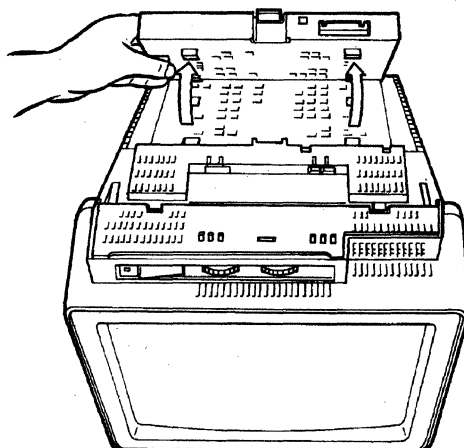
17. Pinch the blue latch and pull up the edge of the stand to remove the stand from the display element.



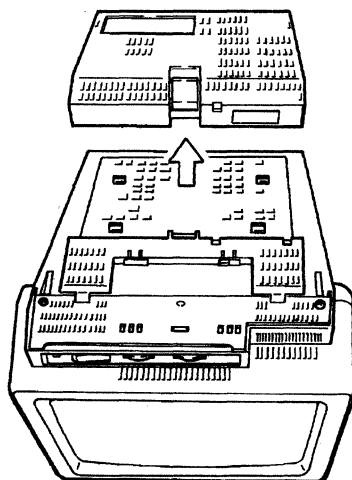
18. Pinch the latch of the logic element and push the logic element to unlock it from the display element.



19. Pull up the edge of the logic element to remove the logic element from the display element.



20. Remove the logic element from the display element.



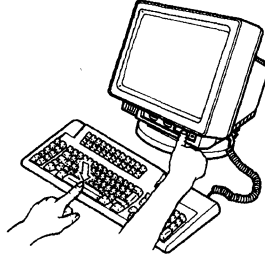
21. Plug in the power cord into the electrical outlet.
22. Wait for approximately 30 seconds.
23. Set the power switch to On.
24. Does the power-on light stay on?
 Yes, the logic element is failing. Go to "Request for Service" on page 5-33.
 No, go to step 25.
25. Set the power switch to Off.
26. Unplug the power cord from the electrical outlet.
27. Do you have another IBM InfoWindow 3472?
 Yes, replace the power cord with the one from the other IBM InfoWindow 3472. Go to step 28.
 No, the display element is failing. Go to "Request for Service" on page 5-33.
28. Wait for approximately 30 seconds.
29. Set the power switch to On.
30. Does the power-on light stay on?
 Yes, the original power cord is failing. Set the power switch to Off and replace the power cord.
 No, the display element is failing. Go to "Request for Service" on page 5-33.

Printer Problem

Symptom

Printer does not work.

1. Make sure the power switch of your printer is set to On.
2. Make sure the printer is ready to print.
3. Set the power switch of the IBM InfoWindow 3472 to Off.
4. Press and hold down the Space Bar; set the power switch to On.



5. Hold the Space Bar down and wait for approximately ten seconds.
6. Does the "Offline Setup" panel appear?
Yes, go to step 7.
No, the keyboard is failing. Go to "Request for Service" on page 5-33.

Offline Setup

Move cursor to desired selection and press ENTER.

Customize display station

Update serial number

Test display station

7. Move the cursor to select "Test display station" and press the Enter key.
8. Press and hold down the Alt key; then press the F3 key.
9. "T 3" appears in the operator information area.

("T 3" appears in the operator information area on the screen and blinks for a few intervals.)

0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ

T 3

10. Did "T 3" stop blinking?
Yes, go to step 11 on page 5-26.

No, the printer or the printer cable is probably failing. Contact your supervisor.

11. Does the print-out have the same pattern that is displayed on the screen?

Yes, the problem is not in your display station. One of the following items is probably failing:

- Host system
- Customization (Model ID)
- Communication cable.

Contact your supervisor.

No, the printer or the printer cable is probably failing. Contact your supervisor.

Mechanical Problems

In each case, you should request for service if it prevents normal operation of your display station.

Symptom

The security key does not work.

The security keylock of the logic element is failing. Go to “Request for Service” on page 5-33.

Symptom

The cover is damaged.

Go to “Request for Service” on page 5-33.

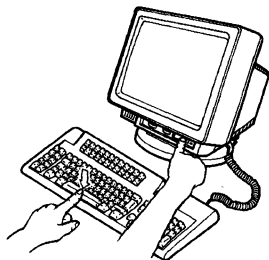
Symptom

The stand or the lift-stand is damaged.

Go to “Request for Service” on page 5-33.

Keyboard Test

- 1. Set the power switch to Off.
- 2. Press and hold down the Space Bar; then set the power switch to On.



- 3. Hold the Space Bar down and wait for approximately ten seconds.
- 4. Does the “Offline Setup” panel appear?

Offline Setup

Move cursor to desired selection and press ENTER.

Customize display station

Update serial number

Test display station

- Yes, go to step 5.
- No, the keyboard is failing. Go to “Request for Service” on page 5-33.
- 5. Move the cursor to select “Test display station” and press the Enter key.
 - 6. Does the Offline Test Entry panel appear on the screen?

Color Model

3472	0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ				
AA0012345					
0151	09F4600	AAAAAAA	AAAAAAA	AAAAAAA	
0000	09F4601	AAAAAAA	AAAAAAA	AAAAAAA	
10111111	10111111	AAAAAAA	AAAAAAA	AAAAAAA	

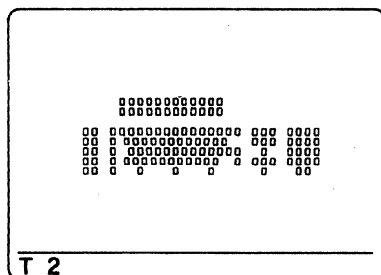
Monochrome Model

3472	0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ				
AA0012345					
0151	09F4600	AAAAAAA	AAAAAAA	AAAAAAA	
0000	09F4601	AAAAAAA	AAAAAAA	AAAAAAA	
10111111	10111111				

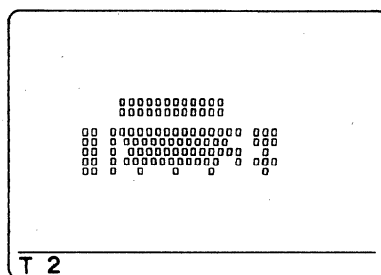
- Yes, go to step 7.
- No, the keyboard is failing. Go to “Request for Service” on page 5-33.
- 7. Press and hold down the Alt key; then press the F2 key.

8. Does your keyboard layout figure appear at the center part of the screen?

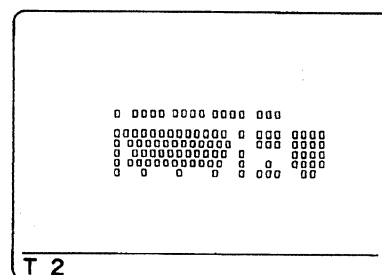
122/124-key Keyboard



104-key Keyboard



IBM Enhanced Keyboard



Yes, go to step 9.

No, the keyboard is failing. Go to “Request for Service” on page 5-33.

9. Press the key that has a problem, several times. Does the equivalent key shown on the screen change from □ to ■, or vice versa?

Yes, go to step 10.

No, the keyboard is failing. Go to “Request for Service” on page 5-33.

10. Press, one at a time, all of the keys on the keyboard.

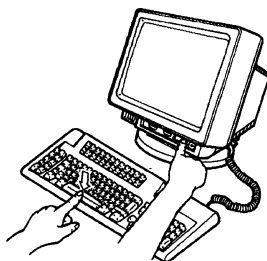
Does the equivalent key shown on the screen change from □ to ■, or vice versa?

Yes, go to step 11.

No, the keyboard is failing. Go to “Request for Service” on page 5-33.

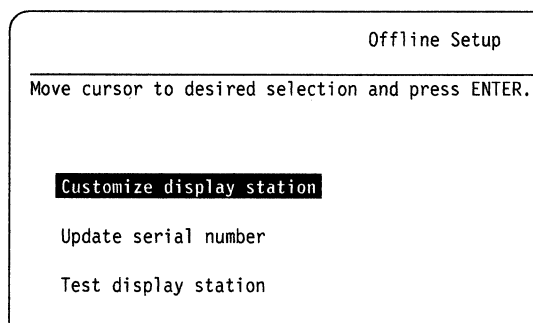
11. Set the power switch to Off; then wait for a few seconds.

12. Press and hold down the Space Bar; then set the power switch to On.



13. Hold the Space Bar down and wait for approximately ten seconds.

14. Does the “Offline Setup” panel appear?



Yes, go to step 15.

No, the keyboard is failing. Go to “Request for Service” on page 5-33.

15. Press the Enter key to select “Customize display station”.

16. Does the “Customization” panel appear on the screen?

Customization		
Move cursor to desired choice, then press SPACE BA		
Screen rows x columns	24 x 80	32 x
Keyboard type	Standard	APL
	User1	User2
Numeric lock	Yes	No
Underscore style	---	---

Yes, go to step 17.

No, the keyboard is failing. Go to “Request for Service” on page 5-33.

17. Compare the keyboard type on the screen with the type specified on page 1-23.
(If the keyboard type is not shown on page 1-23, contact your supervisor.)
18. Are both keyboard types the same?
Yes, contact your supervisor.
No, go to step 19.
19. Move the cursor to select the keyboard type that matches with the one on page 1-23 in the Keyboard type field.
20. While pressing and holding down the Alt key (Shift key for the IBM Enhanced Keyboard), press the Setup key. Continue the operation.

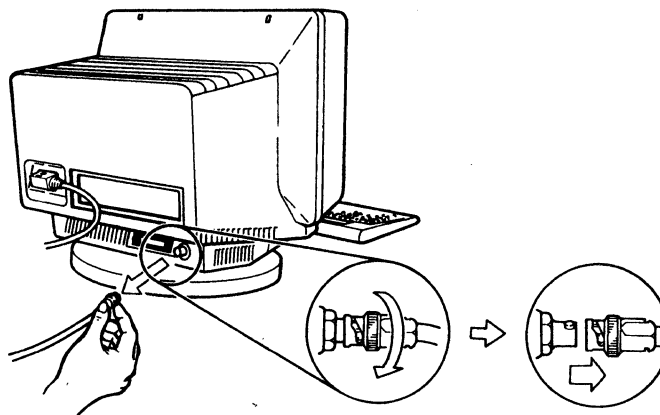
Logic Element Check Procedure

1. Set the power switch to Off.
2. Unplug the power cord from the electrical outlet.

DANGER

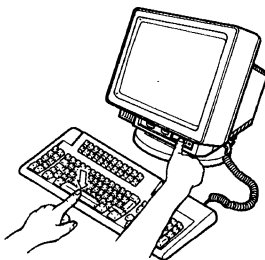
Do not touch the communication cable during an electrical storm. Communication cables can conduct lethal charges of electricity.

3. Disconnect the communication cable.



Note: If you do not disconnect this cable, the test will fail.

4. Plug in the power cord into the electrical outlet.
5. Press and hold down the Space Bar, then set the power switch to On.



6. Hold the Space Bar down and wait for approximately ten seconds.
7. Does the "Offline Setup" panel appear?

Offline Setup

Move cursor to desired selection and press ENTER.

Customize display station

Update serial number

Test display station

Yes, go to step 8.

No, the keyboard is failing. Go to "Request for Service" on page 5-33.

8. Move the cursor to select "Test display station" and press the Enter key.

9. Does the Offline Test Entry panel appear on the screen?

Color Model

3472	0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ					
AA0012345						
0151	09F4600	AAAAAAA	AAAAAAA	AAAAAAA		
0000	09F4601	AAAAAAA	AAAAAAA	AAAAAAA		
10111111	10111111	AAAAAAA	AAAAAAA	AAAAAAA		

Monochrome Model

3472	0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ					
AA0012345						
0151	09F4600	AAAAAAAA	AAAAAAAA	AAAAAAAA		
0000	09F4601	AAAAAAAA	AAAAAAAA	AAAAAAAA		
10111111 10111111						

Yes, go to step 10.

No, the keyboard is failing. Go to "Request for Service" on page 5-33.

10. Press and hold down the Alt key; then press the F1 key. "T 1" appears in the operator information area and blinks a few times.

11. Does "LL" appear in the operator information area on the screen?

Yes, the logic element is failing. Go to "Request for Service" on page 5-33.

No, one of the following items is probably failing.

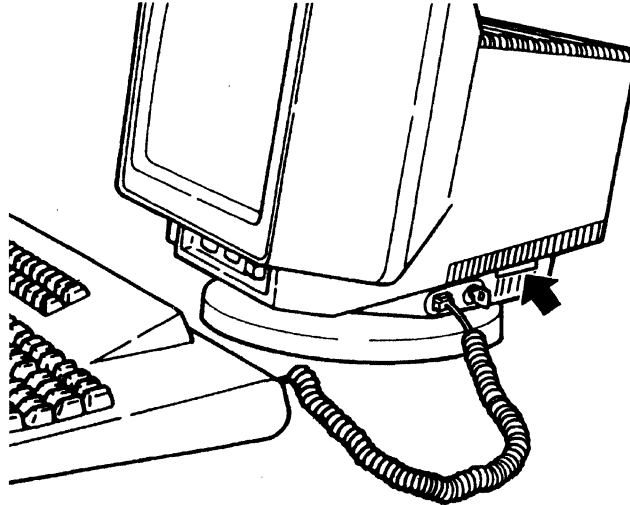
- Host system
- Control unit
- Communication cable
- Logic element
- Customization

Contact your supervisor.

Request for Service

When your display station requires service, perform the following steps.

1. Set the power switch to Off.
2. Be prepared to give the following:
 - Your machine type and serial number



- Symptom
 - Your telephone number, address, and zip code (U.S. only).
3. Call the toll-free number 1-800-IBM-SERV (for U.S. only) or contact your IBM Service Center (for other countries).

The IBM Service Center will verify your warranty and maintenance agreement status, and will provide you with information on the action to be taken.

4. When you need to remove a failing element, or pack it for shipment, go to "Removal and Packing" on page 5-35.
5. When you exchange an element, see Chapter 1, "Setup Instructions" on page 1-1.

ECCO (for the U.S. only)

The following parts list is used when you request service through the ECCO (Electronic Customer Communications Option) system. The ECCO system is available only in the U.S. If the logic element is failing, use the part number of the logic card. If the color display element is failing, use the part number of the analog/video card.

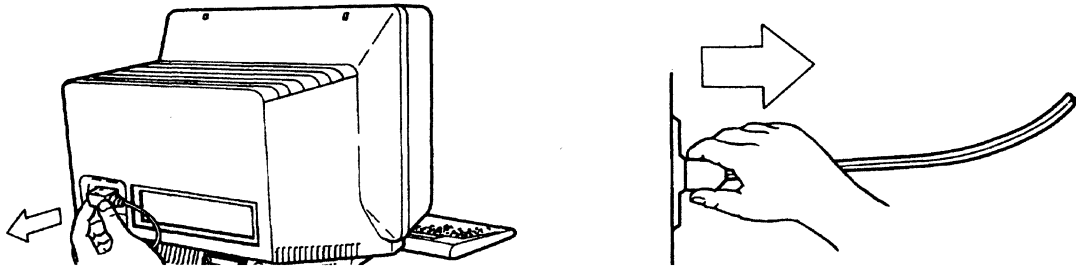
Description	Part Number
Display Element 14 inch, Green, U.S.	69X8052
Display Element 14 inch, Amber-gold, U.S.	69X8053
Display Element 15 inch, Green, U.S.	39F7426
Display Element 14 inch, Color, U.S.	16F1200
Display Element 14 inch, Color, U.S., Analog/video card	39F9225
Display Element 14 inch, Color, U.S., Front cover	39F9315
Display Element 14 inch, Color, U.S., Rear cover	39F9316
Display Element 14 inch, Color, U.S., CRT and Yoke assembly	39F7590
Logic Element, U.S., Logic element (14-inch monitor)	09F4190
Logic Element, U.S., Logic element (15-inch monitor)	23F1820
Logic Element, U.S., Logic card (14-inch monitor)	09F4622
Logic Element, U.S., Logic card (15-inch monitor)	23F1190
Logic Element, U.S., Cover group	09F4191
Logic Element, U.S., I/O plate	09F4194
122-key Keyboard, U.S. English typewriter	1394801
104-key Keyboard, U.S. English	09F4230
IBM Enhanced Keyboard, U.S. English	1394802
122-key Keyboard, U.S. English APL2	1394806
Display Stand	09F4221
Power Cord, 2.8 m (9 ft), U.S.	6952297
Power Cord, 1.8 m (6 ft), U.S. (Chicago)	6952298

Removal and Packing

This section describes how to remove the display element, logic element, keyboard, and stand. Refer to Chapter 1, "Setup Instructions" on page 1-1 when replacing the display station elements.

Display Station Element Removal

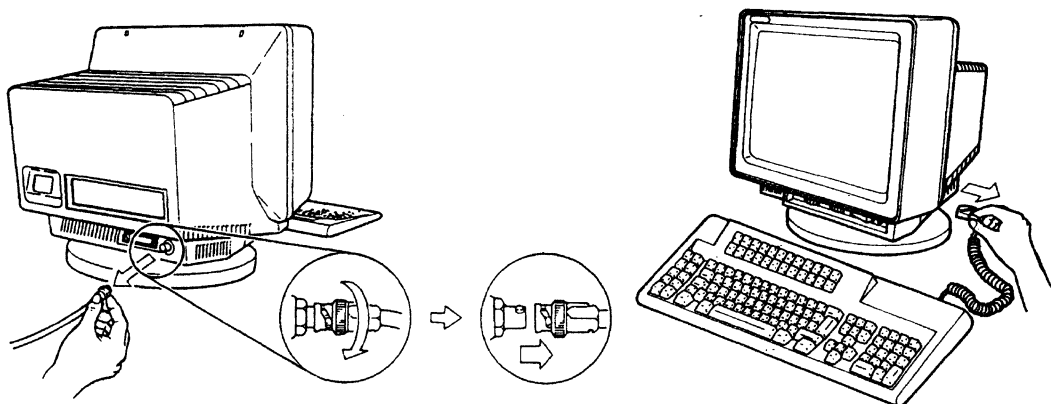
- 1 Set the power switch to Off.
- 2 Unplug the power cord at both ends (electrical outlet and display element).



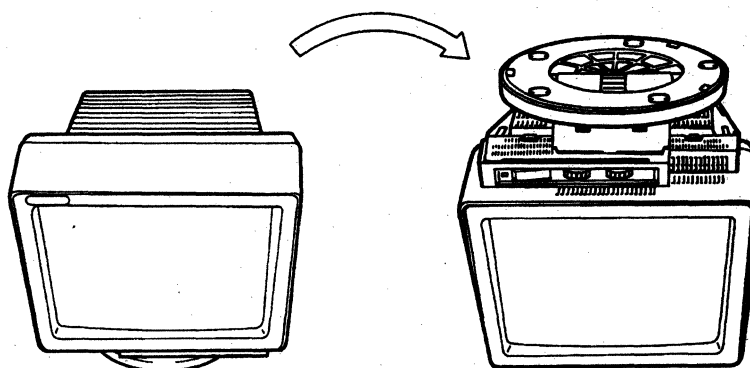
DANGER

Do not touch the communication cable during an electrical storm. Communication cables can conduct lethal charges of electricity.

- 3 Unscrew and pull out all cables from the display element and logic element.

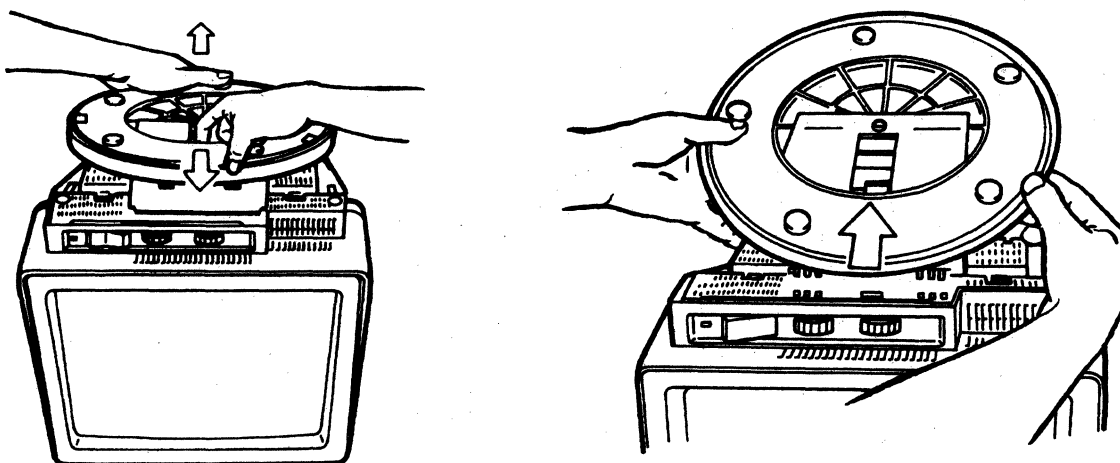


- 4 Turn the display station upside down so that the screen faces you.



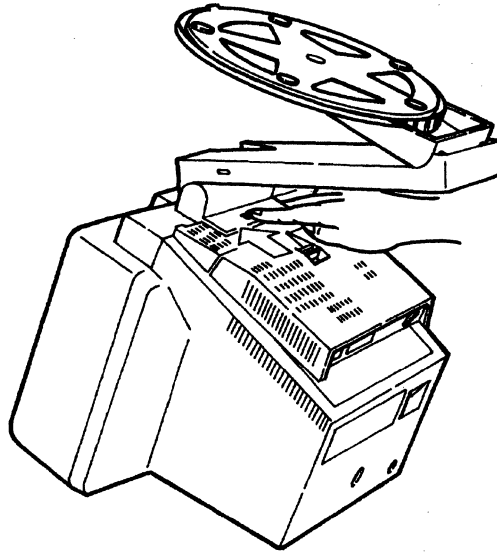
- 5 If the lift-stand is attached to your display element, go to 8 on page 5-37.

- 6 Pinch the blue latch and pull up the edge of the stand to remove the stand from the display element.

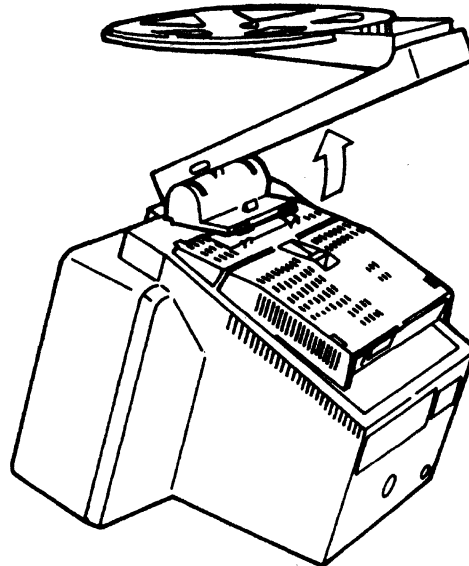


- 7 Go to step 11 on page 5-38.

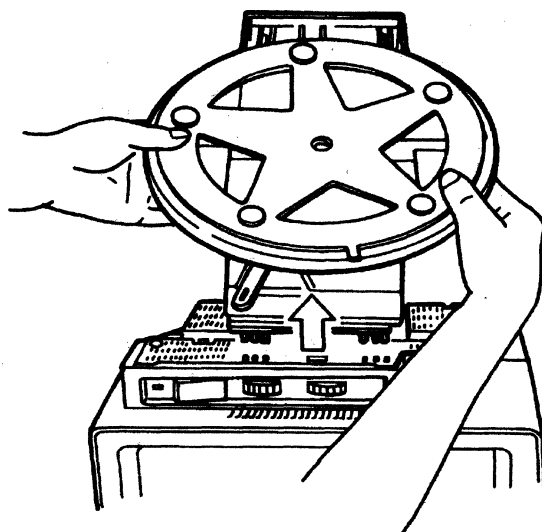
- 8 Push and hold the blue latch to unlock the lift-stand from the display element.



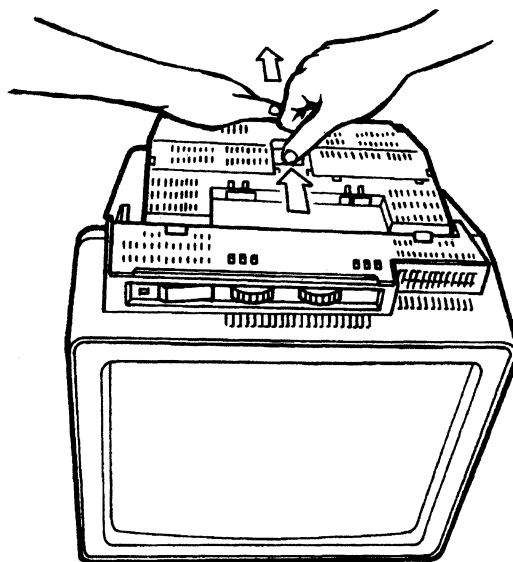
- 9 Pull up the edge of the lift-stand to remove the stand from the display element.



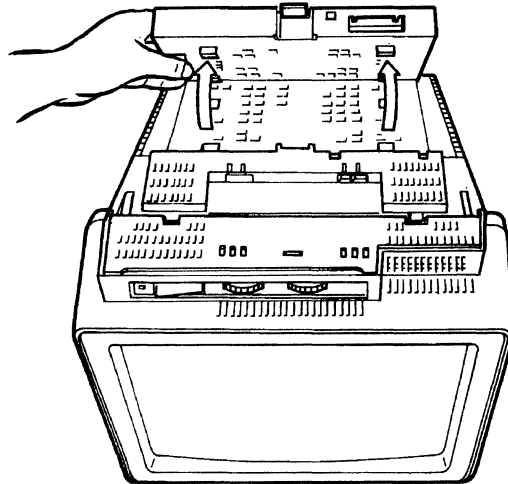
- 10 Remove the lift-stand from the display element.



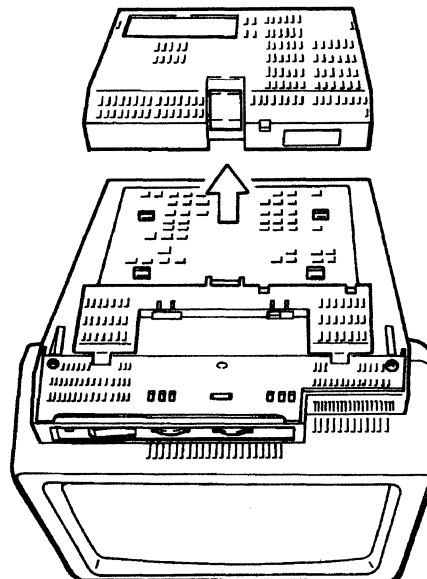
- 11 Pinch the latch of the logic element and push the logic element to unlock it from the display element.



- 12 Pull up the edge of the logic element to remove the logic element from the display element.



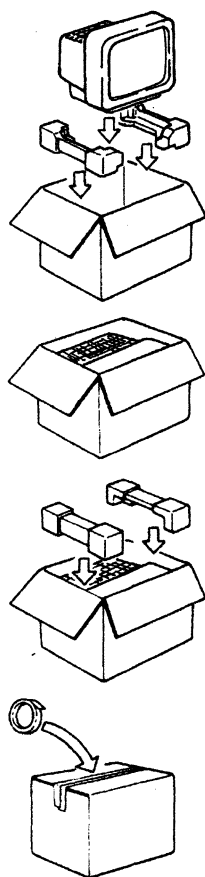
- 13 Remove the logic element from the display element.



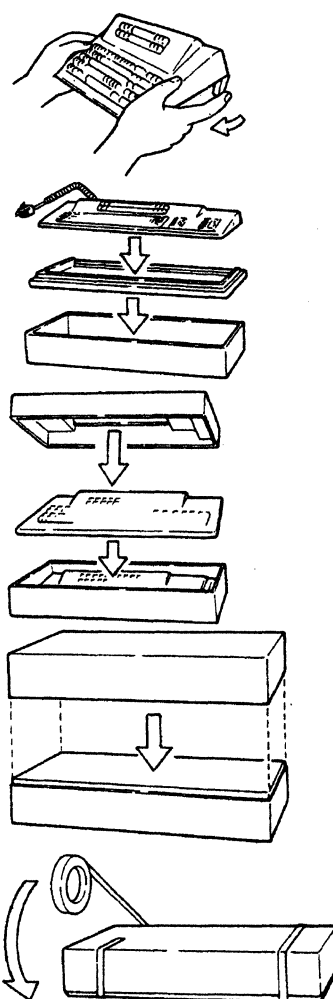
- 14 Go to "Packing Display Station Element" on page 5-40 for instructions on returning the failing element to IBM.

Packing Display Station Element

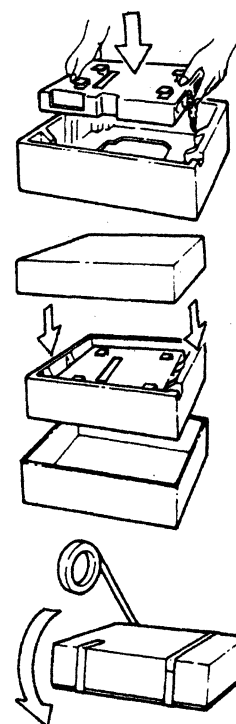
Display Element



Keyboard



Logic Element



Note:

- Keep the power cord.
- Remove and keep all special key caps (if any) and overlay, and reinstall the standard key caps.
- Send the two security keys with the logic element.

Appendix A. Display Station Controls and Adjustments

The following chart shows the items that you can change for your operational environment. Refer to *IBM InfoWindow 3471 and 3472 Introduction and Installation Planning Guide* for details of the function of each selection item.

Table A-1 (Page 1 of 2). Display Station Controls and Adjustments			
Selection Item	Panel Title	Page	Description
Alarm volume	Display Setup	A-8	You can change the alarm volume (sound loudness) including value 0 (off).
Auto dim	Display Setup	A-8	The screen becomes blank if you do not press a key or the display station does not receive any data from the host in the minutes specified by the item "Delay".
Clicker	Display Setup	A-8	You can turn on/off and change the volume (sound loudness) of the audible clicker.
Colors ²	Display Setup	A-8	You can change the field colors of input, intensified input, protected, and intensified protected.
Cursor	Display Setup	A-8	You can change the style and blinking state of the cursor.
Keyboard layout	Customization ¹	A-3	When changing this item, consult your system personnel. This value is dependant on the control unit customization.
Machine serial	Serial Number ¹	A-5	This number is used for the network control. The original setting of this value is the serial number of the display station.
Mono case ⁴	Display Setup	A-8	When "Yes" is selected, lowercase alphabets will appear in uppercase.
Numeric lock	Customization ¹	A-3	When "Yes" is selected, you cannot enter alphabetic characters in the numeric field that is defined by the host application program.
Record/Play options	Test display station	A-11	You can change the record/play function to prohibit recording of the non-display field input (like a password input) or the record/play function can be totally disabled. Once the record/play function is changed, the original function will not be recovered.
Screen background ³	Display Setup	A-8	When "Black" is selected, the display contents will be displayed in white on a black background. When "White-1" is selected, the background (white) intensity changes for highlighting. When "White-2" is selected, the character (black) intensity changes for highlighting.
Row/column indicator	Display Setup	A-8	When turned on, the current row and column numbers are displayed in the operator information area.

¹ Before you go into the panels ("Customization" and "Serial Number") for changing these items, you should complete your host session (job with the host application program). These panels will detach the host session from your display station.

² Available for the color models only.

³ Available for the black-on-white models only.

⁴ Available for the U.S. only.

Table A-1 (Page 2 of 2). Display Station Controls and Adjustments			
Selection Item	Panel Title	Page	Description
Rule line	Display Setup	A-8	You can change the attributes of the rule line: style, color or intensified, and follows-cursor.
Screen rows x columns	Customization ¹	A-3	You can select one of four screens for the data area size (number of rows and columns).
Typematic	Display Setup	A-8	You can change the rate and delay time of the keyboard typing speed.
Underscore style	Customization ¹	A-3	The style of the underscore can be selected as either broken or continuous bar.

Panel Operation Rules

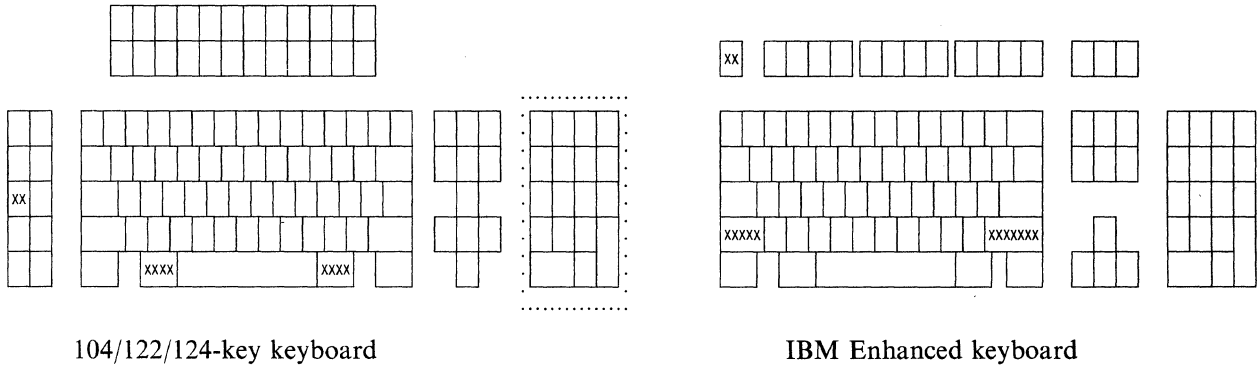
The selections that you make or you have made are shown in reverse video on the screen. As you use the cursor move keys: ←, →, ↓, and ↑; the reverse video image moves from item to item. To complete the selection panel, press the Space Bar. To complete the selection and proceed to the next step, press the F7 key (for the previous screen) or F8 key (for the next screen). To exit from the panel, press the F3 key.

Customization

If a host session is in process (working with the host application program), you have to complete the session before going into the “Customization” panel.

Note: You can go to the “Offline Setup” panel by powering on the display station while holding down the Space Bar.

1. When the display station is operational, press the SetUp key while holding down the Shift (Alt for the 104/122/124-key keyboard) key.



You will see the “Online Setup” panel.

Online Setup

Move cursor to desired selection and press ENTER.

Setup display

Setup printer

Go to offline setup

F3=Exit

SETUP

2. In the panel, select “Go to offline setup” by using the cursor move keys and by pressing the Enter key. You should see a warning message for host session disconnection.
3. Press the Enter key to continue. The “Offline Setup” panel should appear.

Offline Setup

Move cursor to desired selection and press ENTER.

Customize display station

Update serial number

Test display station

F3=Exit

SETUP

4. In the panel, select “Customize display station” by using the cursor move keys and by pressing the Enter key. You will see the “Customization” panel.

Customization More: +

Move cursor to desired choice, then press SPACE BAR to select.

Screen rows x columns	24 x 80	32 x 80	43 x 80	27 x 132
Keyboard layout	Standard	APL	DataEntry	78EMU
	User1	User2	User3	User4
Numeric lock	Yes	No		
Underscore style	---	---		
Printer				
Model/type	Subsystem	4201	4202	4207
	4208	5202	5204	
Continuous form	Yes	No		
Code page	437	850		
Host addressable print . . .	Yes	No		

F3=Exit F8=Forward

SETUP

5. Complete your selection by using the cursor move keys and the Space Bar in the panel, and by pressing the F3 key to return to “Offline Setup” panel.
6. In the “Offline Setup” panel, press the F3 key to exit for starting the display station operation.

Notes:

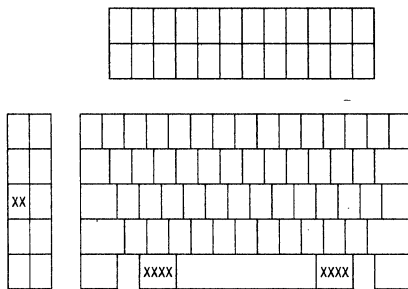
1. When “Host addressable print” is selected “No”, the subsequent panel for the host addressable print options is not available.
2. IBM recommends the use of keyboard layout ID other than “78EMU”. When “78EMU” is selected, the ExSel, Fwd, and Back keys do not function and the ExSel key related functions (such as the Response Time Monitor function) are not available.

Serial Number

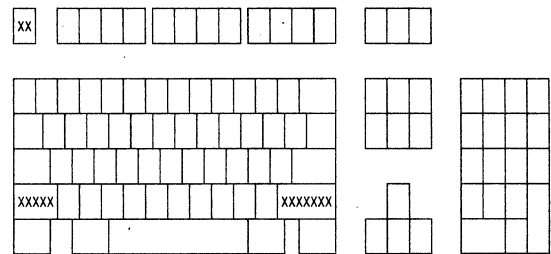
When manufactured, the machine serial number is stored in memory. It can be used by the communication controllers for detecting and logging errors. When you need to change the serial number due to replacement of the logic element, or if the serial number was re-initialized because of a machine failure, you can set or change it by performing the following actions (see page 5-33 for serial-number location).

If a host session is in process (working with the host application program), you have to complete the session before going into the “Customization” panel.

1. When the display station is operational, press the SetUp key while holding down the Shift (Alt for the 104/122/124-key keyboard) key.



104/122/124-key keyboard



IBM Enhanced keyboard

You will see the “Online Setup” panel.

Online Setup

Move cursor to desired selection and press ENTER.

Setup display

Setup printer

Go to offline setup

F3=Exit

SETUP

2. In the panel, select “Go to offline setup” by using the cursor move keys and by pressing the Enter key. You should see a warning message for host session disconnection.
3. Press the Enter key to continue. The “Offline Setup” panel should appear.

Offline Setup

Move cursor to desired selection and press ENTER.

Customize display station

Update serial number

Test display station

F3=Exit

SETUP

Note: You can go to the “Offline Setup” panel by powering on the display station while holding down the Space Bar.

4. In the panel, select “Update serial number” by using the cursor move keys and by pressing the Enter key. The “Serial Number” panel should appear.

Serial Number

Move cursor to desired choice, then press SPACE BAR to select.

Machine Serial █ _ _ _ _ _

█ 0123456789ABCDEFGHIJKLMNPOQRSTUVWXYZ

F3=Exit

SETUP

Note: If you are reentering the IBM machine serial number, insert “00” in the third and forth digits. For example, the IBM machine serial number “1234567” should be entered as “120034567”.

Relation between serial number on the label and panel

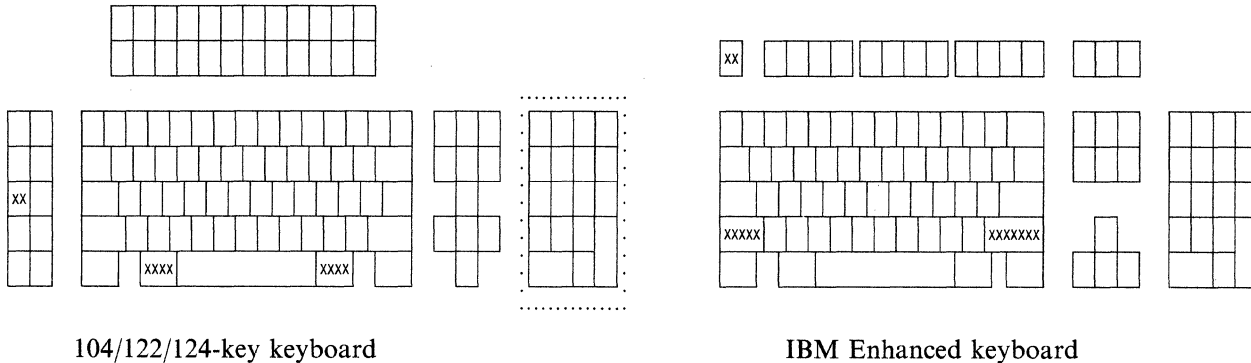
Serial number on the label	<div style="border: 1px solid black; padding: 5px; margin: 5px;"> TYPE 3472 S/N XX-XXXX 12 34567 </div>
Machine serial on the serial number panel	<div style="border: 1px solid black; padding: 5px; margin: 5px;"> MACHINE SERIAL X X 0 0 X X X X 1 2 3 4 5 6 7 </div>

5. Complete your selection by using the cursor move keys and the Space Bar in the panel, and by pressing the F3 key to return to “Offline Setup” panel.
6. In the “Offline Setup” panel, press the F3 key to exit for starting the display station operation.

Display Setup

You can change the items in the “Display Setup” panel without detaching the host session (job with the host application program).

1. When the display station is operational, press the **SetUp** key while holding down the Shift (Alt for the 104/122/124-key keyboard) key.



104/122/124-key keyboard

IBM Enhanced keyboard

You will see the “Online Setup” panel.

Online Setup

Move cursor to desired selection and press ENTER.

Setup display

Setup printer

Go to offline setup

F3=Exit

SETUP

2. In the panel, select “Setup display” by using the cursor move keys and by pressing the Enter key. The “Display Setup” panel should appear.

Color Models

Display Setup		More: +	
Move cursor to desired choice, then press SPACE BAR to select.			
Rule line			
Style	Horizontal	Vertical	Cross
Color	White	Green	
Follows cursor	Yes	No	
Row/column indicator . .		On	Off
Cursor			
Style	Underline	Block	
Blink	Yes	No	
Auto dim	Yes	No	
Delay (minutes) . . .	5	10	20
Mono case		Yes	No
F3=Exit		F8=Forward	
SETUP			

Monochrome Models

Display Setup		More: +	
Move cursor to desired choice, then press SPACE BAR to select.			
Rule line			
Style	Horizontal	Vertical	Cross
Intensified	Yes	No	
Follows cursor	Yes	No	
Row/column indicator . .		On	Off
Cursor			
Style	Underline	Block	
Blink	Yes	No	
Auto dim	Yes	No	
Delay (minutes) . . .	5	10	20
Mono case		Yes	No
Screen background . . .		White-1	White-2 Black
F3=Exit		F8=Forward	
SETUP			

Notes:

- a. When the control unit is using CECP (Country Extended Code Page), the mono case function is not valid. The lowercase alphabetic characters do not appear in uppercase even when "Mono case" is set to "Yes". "Mono case" appears on the panel for the U.S. only.
- b. "Screen background" appears for the black-on-white screen models only.
3. If necessary, move to the appropriate panel using the F8 key (for the next panel) and F7 key (for the previous panel).

Display Setup More: -+

Move cursor to desired choice, then press SPACE BAR to select.

Typematic			
Rate	Normal	Fast	
Delay	Short	Normal	Long
Clicker			
Click	Yes	No	
Volume	Off	1	2
	3	4	High
Alarm volume	Off	1	2
	3	4	High

F3=Exit
F7=Backward
F8=Forward

SETUP

Note: The following panel appears only for color models.

Display Setup More: -

Move cursor to desired choice, then press SPACE BAR to select.

Four base color mapping

Input	Red	Pink	Green	Yellow
	Blue	Turquoise	White	
Intensified input . . .	Red	Pink	Green	Yellow
	Blue	Turquoise	White	
Protected	Red	Pink	Green	Yellow
	Blue	Turquoise	White	
Intensified protected .	Red	Pink	Green	Yellow
	Blue	Turquoise	White	

F3=Exit
F7=Backward

SETUP

4. Complete your selection by using the cursor move keys and the Space Bar in the panel, and by pressing the F3 key to return to "Online Setup" panel.
5. In the "Online Setup" panel, press the F3 key to exit to normal display station operation.

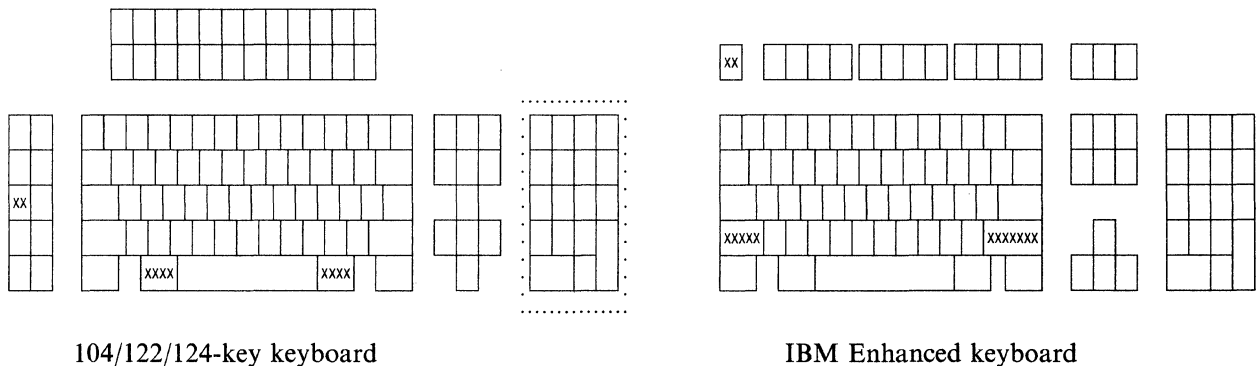
Test Display Station (Record/Play Options)

IMPORTANT: Once the function is changed, the original record/play function will not be resumed without IBM service representative's support.

You can change the record/play function to prohibit the non-display field input (like a password input) or the record/play function can be totally disabled.

If a host session is in process (working with the host application program), you have to complete the session before going into the "Customization" panel.

1. When the display station is operational, press the **SetUp** key while holding down the **Shift** (Alt for the 104/122/124-key keyboard) key.



You will see the "Online Setup" panel.

Online Setup

Move cursor to desired selection and press ENTER.

Setup display

Setup printer

Go to offline setup

F3=Exit

SETUP

2. In the panel, select "Go to offline setup" by using the cursor move keys and by pressing the Enter key. You should see a warning message for host session disconnection.
3. Press the Enter key to continue. The "Offline Setup" panel should appear.

Offline Setup

Move cursor to desired selection and press ENTER.

Customize display station

Update serial number

Test display station

F3=Exit

SETUP

Note: You can go to the “Offline Setup” panel by powering on the display station while holding down the Space Bar.

4. In the panel, select “Test display station” by using the cursor move keys and by pressing the Enter key. You will see the following panel.

3472
0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ

AA0012345

0151	09F4600	AAAAAAA	AAAAAAA	AAAAAAA
0000	09F4601	AAAAAAA	AAAAAAA	AAAAAAA
10111111	10111111	AAAAAAA	AAAAAAA	AAAAAAA

-

TEST

5. Press and hold down the Alt and Shift keys, and then press the Record key. You should see one of the following symbols appear in the operator information area.

- R0**

 The full (original) Record/Play function is available.
- R1**

 Non-display field input is prohibited.
- R2**

 The record/play function is disabled.

Note: Once the **Rn** number is incremented, the number cannot be decremented such as changing from **R1** to **R0**.

- If you wish to prohibit the non-display field input, press the F1 key. The blinking R1 should appear.
 - To cancel the change, press the Reset key.
 - To accept the change, press the Enter key. The blinking R1 changes to **R1**. After a few seconds, **R1** disappears.
- If you wish to disable the record/play function, press the F2 key. The blinking R2 should appear.

- To cancel the change, press the **Reset** key.
 - To accept the change, press the **Enter** key. The blinking **R2** changes to **R2**. After a few seconds, **R2** disappears.
6. Press the **Reset** key to exit to normal display station operation.

Appendix B. Printer Controls and Adjustments

The following chart shows the items that you can change for your operational environment.

Table B-1. Printer Controls and Adjustments			
Selection Item	Panel Title	Page	Description
Cancel print	Printer Control	B-7	When you select this item, you can cancel the printing job from the host system.
Characters per inch	Printer Setup	B-5	You can select the number of characters printed per inch.
Form Feed	Printer Control	B-7	When you select this item, the printer advances the paper one page.
Form feeds after print	Printer Setup	B-5	You can turn on or off a form-feed after each screen print.
Host addressable print options	Customization ¹	B-2	If “Yes” is selected for the host addressable print, you can select the options for the host addressable print operation. Refer to “Host Addressable Print Options” on page B-8 for details of each item.
Line Feed	Printer Control	B-7	When you select this item, the printer advances the paper one line.
Lines per inch	Printer Setup	B-5	You can select the number of lines printed per inch.
Lines per page	Printer Setup	B-5	You can select the number of lines printed per page.
PA1	Printer Control	B-7	When you select this item, you can send the PA1 signal to the host system.
PA2	Printer Control	B-7	When you select this item, you can send the PA2 signal to the host system.
Printer	Customization ¹	B-2	For a printer, you can select or change attributes of the model/type, continuous form, code page, and host addressable print.
Print position	Printer Setup	B-5	You can align the print image to left, right, or center.
Print quality	Printer Setup	B-5	You can change the print quality in three degrees.
Trim border	Printer Setup	B-5	You can select the color of the trimming rectangle to either white or green.
Wide paper	Printer Setup	B-5	You can select if wide paper is used for the printer.

¹ Before you go into the panels “Customization” for changing these items, you should complete your host session (job with the host application program). The panel will terminate your host session.

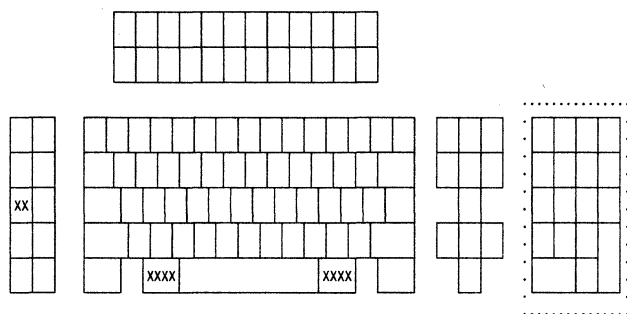
Panel Operation Rules

The selection that you are making or you have made is shown in reverse video on the screen. As you use the cursor move keys: ←, →, ↓, and ↑; the reverse video image moves from item to item. To complete the selection panel, press the Space Bar. To complete the selection and proceed to the next step, press the F7 key (for the previous screen) or F8 key (for the next screen). To exit from the panel, press the F3 key.

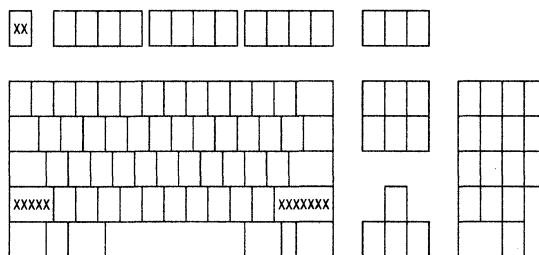
Customization

If a host session is in process (working with the host application program), you have to complete the session before going into the “Customization” panel. Do the following:

1. When the display station is operational, press the SetUp key while holding down the Shift (Alt for the 104/122/124-key keyboard) key.



104/122/124-key keyboard



IBM Enhanced keyboard

You will see the “Online Setup” panel.

Online Setup

Move cursor to desired selection and press ENTER.

Setup display

Setup printer

Go to offline setup

F3=Exit

SETUP

2. In the panel, select “Go to offline setup” by using the cursor move keys and by pressing the Enter key. You should see a warning message for host session disconnection.
3. Press the Enter key to continue. The “Offline Setup” panel should appear.

Offline Setup

Move cursor to desired selection and press ENTER.

Customize display station

Update serial number

Test display station

F3=Exit

SETUP

Note: You can go to the “Offline Setup” panel by powering on the display station while holding down the Space Bar.

- In the panel, select “Customize display station” by using the cursor move keys and by pressing the Enter key. The “Customization” panel should appear.

Customization More: +

Move cursor to desired choice, then press SPACE BAR to select.

Screen rows x columns	24 x 80	32 x 80	43 x 80	27 x 132
Keyboard type	Standard	APL	DataEntry	78EMU
	User1	User2	User3	User4
Numeric lock	Yes	No		
Underscore style	---	---		
Printer				
Model/type	Subsystem	4201	4202	4207
	4208	5202	5204	
Continuous form	Yes	No		
Code page	437	850		
Host addressable print . .	Yes	No		

F3=Exit F8=Forward

SETUP

When you select “Yes” for “Host Addressable Print”, you can go to the following screen by pressing the F8 key.

Customization		More: -
Move cursor to desired choice, then press SPACE BAR to select.		
Host Addressable Print Options		
Suppress nulls	Yes	No
Suppress automatic new line when		
CR at maximum print position + 1	Yes	No
FF at print end	Yes	No
NL at maximum print position + 1	Yes	No
FF ignored when not in first print position . .	Yes	No
FF takes position if followed by data	Yes	No
FF at end of print	Yes	No
F3=Exit	F7=Backward	
SETUP		

5. Complete your selection by using the cursor move keys and the Space Bar in the panel, and by pressing the F3 key to return to "Offline Setup" panel.
6. In the "Offline Setup" panel, press the F3 key to exit for starting the display station operation.

Printer Setup

You can change the items in the “Printer Setup” panel without detaching the host session (job with the host application program). Do the following:

- 1. Press the **SetUp** key while holding down the **Alt** key. You will see the “Online Setup” panel.

Online Setup

Move cursor to desired selection and press ENTER.

Setup display

Setup printer

Go to offline setup

F3=Exit

SETUP

- 2. In the panel, select “Setup printer” by using the cursor move keys and by pressing the Enter key. The “Printer Setup” panel should appear.

Color Models

Printer Setup

Move cursor to desired choice, then press SPACE BAR to select.

Characters per inch	10	12	17.1	
Lines per inch	3	4	6	8
Lines per page	51	66	68	72
	88	96		
Wide paper	Yes	No		
Print quality	Draft	Letter	Enhanced	
Form feeds after print	Yes	No		
Print position	None	Left	Right	Center
Trim border	White	Green		

F3=Exit

SETUP

Monochrome Models

Printer Setup				
Move cursor to desired choice, then press SPACE BAR to select.				
Characters per inch	10	12	17.1	
Lines per inch	3	4	6	8
Lines per page	51	66	68	72
	88	96		
Wide paper	Yes	No		
Print quality	Draft	Letter	Enhanced	
Form feeds after print	Yes	No		
Print position	None	Left	Right	Center
Trim border	Intensify	Normal		
F3=Exit				
SETUP				

Note: “Wide paper” appears only for printers: IBM 4202, 4208, 5202, and 5204.

3. Complete your selection by using the cursor move keys and the Space Bar in the panel, and by pressing the F3 key to return to “Online Setup” panel.
4. In the “Online Setup” panel, press the F3 key to exit to normal display station operation.

Printer Control

If you selected the local printer (other than the “Subsystem” printer in the “Customization” panel) and pressed the Print key, “PRINT” appears in the operator information area and the display station is placed in print mode. If you press the F14 key in this mode, you will see the following screen.

Printer Control

Move cursor to desired selection and press ENTER.

Paper Control

Line feed

Form feed


Printer Session Control

Cancel print

PA1

PA2

F3=Exit

PRINT CTRL 

Note: The “Printer Session Control” items appear only when the “Host addressable print” is selected.

In this screen, you can:

- advance a line or a page of the paper
- cancel a print job from the host system
- send a PA1 or PA2 signal to the host system (depending on the communication method).

Press the F3 key to return to print mode. To exit from the print control panel or print mode, press the Print key.

Host Addressable Print Options

When “Subsystem” is not selected for the printer and the keyboard layout ID is set to the ID other than “78EMU”, the host addressable print can be enabled. When “Yes” is selected, the following options are available for the host addressable printing.

The host addressable print options are valid only for the printer-LT (logical terminal). Refer to *IBM 3274 Control Unit Description and Programmer's Guide* or *IBM 3174 Subsystem Control Unit Functional Description* for details of the printer-LT.

Print Controls

The following print controls can be redefined for the host addressable printing.

Automatic New Line: When the print data exceeds the maximum print column, the exceeded data is automatically moved to (printed on) the next line. In the following figure, the exceeded print data “AAAAAAA” is printed on the next line.

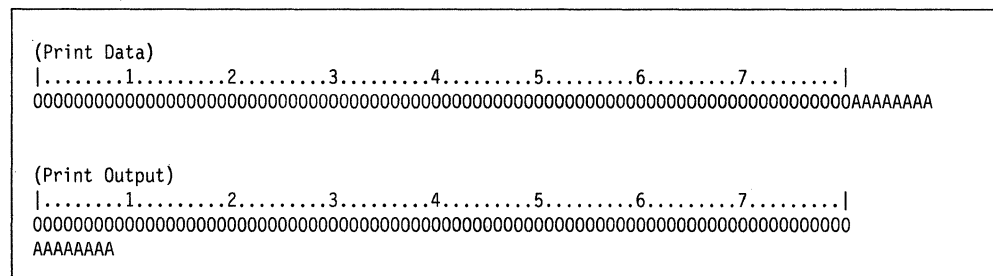


Figure B-1. Automatic New Line

Form Feed (FF): When the printer encounters the form feed (FF) character in the print data, a page ejection occurs and the subsequent print data is printed on the next page.

Carriage Return (CR): When the printer encounters the carriage return (CR) character in the print data, the print position is moved to the first position of the current line. The subsequent print data is printed on the first position of the current line.

New Line (NL): When the printer encounters the new line (NL) character in the print data, the print position is moved to the first position on the next line. The subsequent print data is printed on the first position of the next line.

Suppress Nulls

The print data line that contains only non-printable characters can be suppressed or printed as a blank line. This selection is valid only for formatted mode print of host addressable printing. The initial setting of this value is “Yes” (suppressed).

Suppress Automatic New Line when CR at Maximum Print Position + 1

The automatic new line can be suppressed when a carriage return character appears next to the maximum print position (column). The following figure shows that “Yes” is selected. The automatic new line is suppressed when a carriage return character appears next to the maximum print position; “X” overrides the first “O”.

Figure B-2. Automatic New Line Suppressed (CR at Max + 1)

Figure B-3. Automatic New Line Not Suppressed (CR at Max + 1)

[illegible]

Figure B-5. Automatic New Line Not Suppressed (NL at Max+1)

This selection is valid only for unformatted mode print of host addressable printing. The initial setting of this value is “No” (not suppressed).

FF Ignored when not in First Print Position

The form feed character can be ignored. When “Yes” is selected, a form feed character at the first position or next to the maximum print position in a print data line is executed. Form feed characters in other positions are printed as blank characters. When “No” is selected, all form feeds are executed. The initial setting of this value is “No” (all form feeds executed).

FF Takes Position if Followed by Data

When “Yes” is selected and the form feed character is not at the end of the print data, a form feed is executed and a blank character is printed at the first position of the next page. The subsequent print data starts from the second position of the first line on the next page. When “No” is selected, the form feed character is not printed as a blank character and the subsequent print starts from the first position on the next page. The initial setting of this value is “Yes” (FF printed as a blank).

FF at End of Print

When “Yes” is selected, a form feed occurs at print end. The subsequent print starts from the first position on the next page. When “No” is selected, an automatic new line is executed at print end. The initial setting of this value is “No” (no form feed).

Appendix C. Keyboard Layouts

This section shows the keyboard layouts for each country. The table shown below is a quick index for each keyboard layout.

Notes:

1. You can change the 122/124-key keyboard to the Data Entry keyboard by replacing the optional keycaps. The following keyboard layout for the Data Entry keyboard shows only the location of each data-entry keycap.
2. When you use the Data Entry keyboard, the upper shift key on the right hand side of the keyboard functions as the down shift key.
3. When you use the Finnish/Swedish Data Entry keyboard, the space bar functions as the 0 key.

Language	Page
Austrian/German	C-2
Belgian	C-3
Canadian-Bilingual	C-4
Danish	C-5
Dutch	C-6
Finnish/Swedish	C-7
French AZERTY	C-8
Italian	C-9
Japanese Katakana	C-11
Latin American Spanish	C-12
Norwegian	C-13
Portuguese	C-14
Spanish	C-15
Swiss-French	C-16
Swiss-German	C-17
U.K. English	C-18
U.S. English	C-20

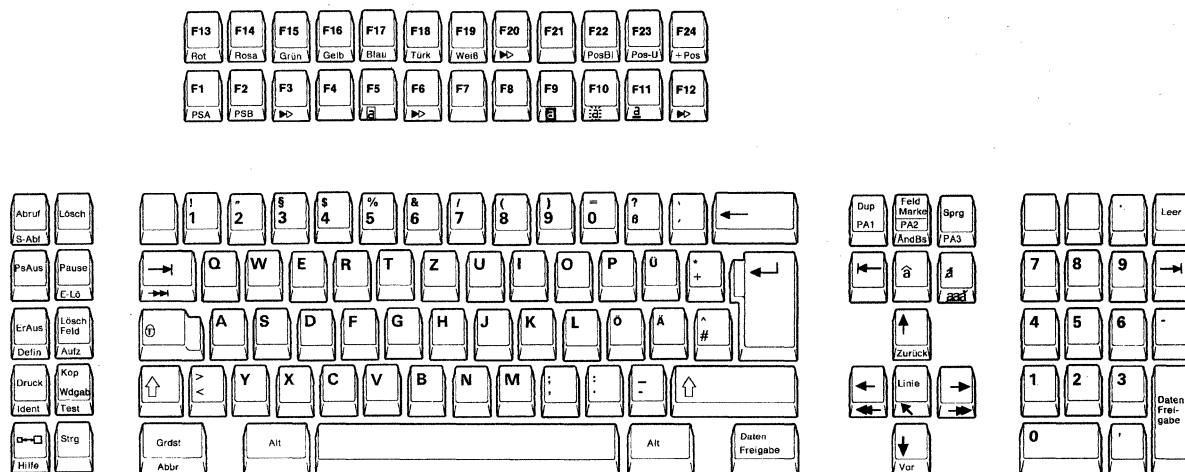


Figure C-1. Austrian/German 122-key Keyboard

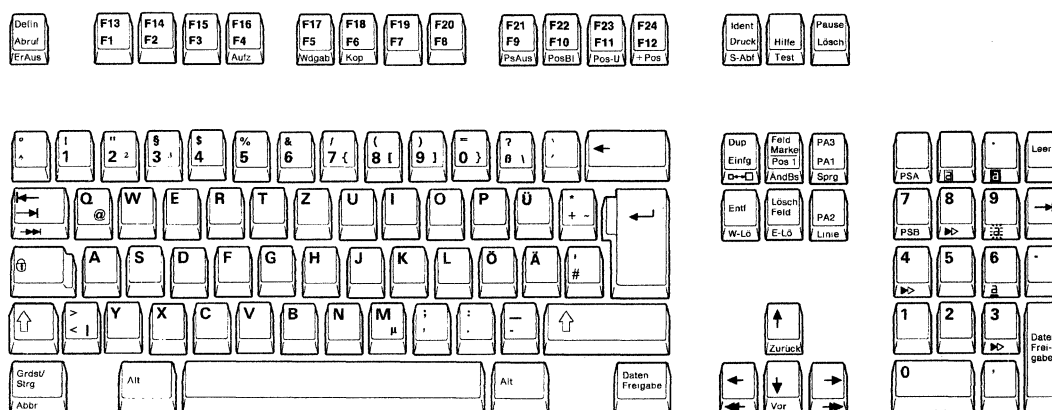


Figure C-2. Austrian/German IBM Enhanced Keyboard

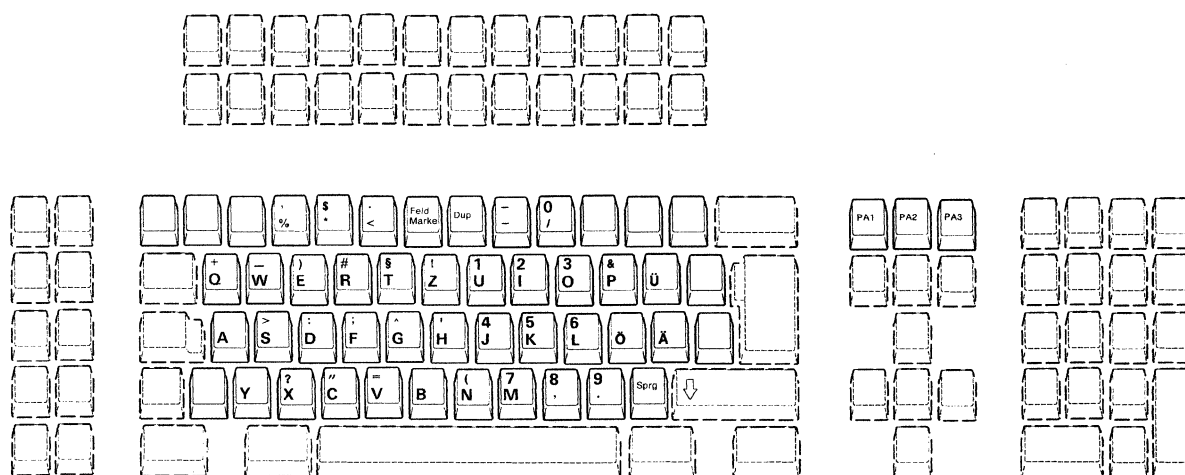


Figure C-3. Austrian/German Data Entry Keyboard

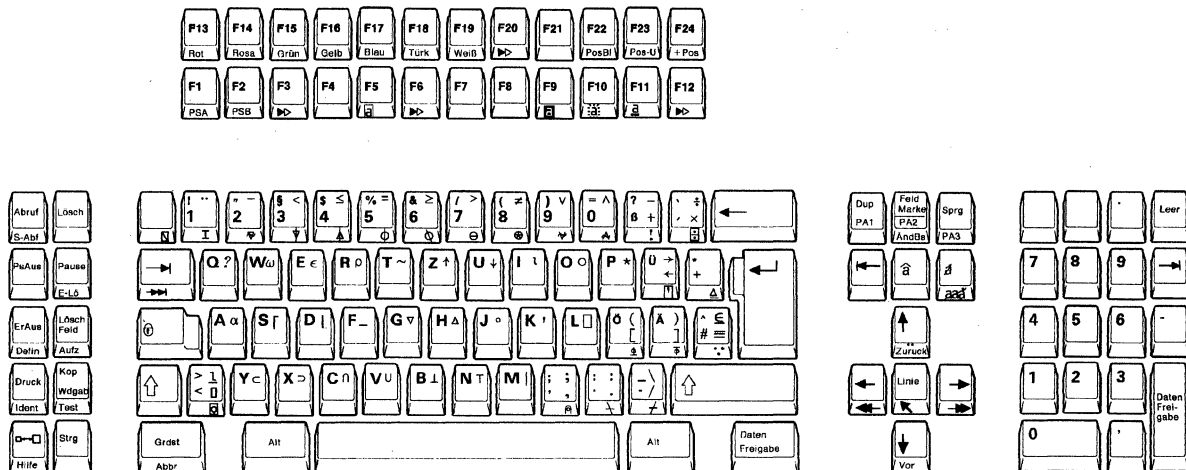


Figure C-4. Austrian/German APL Keyboard

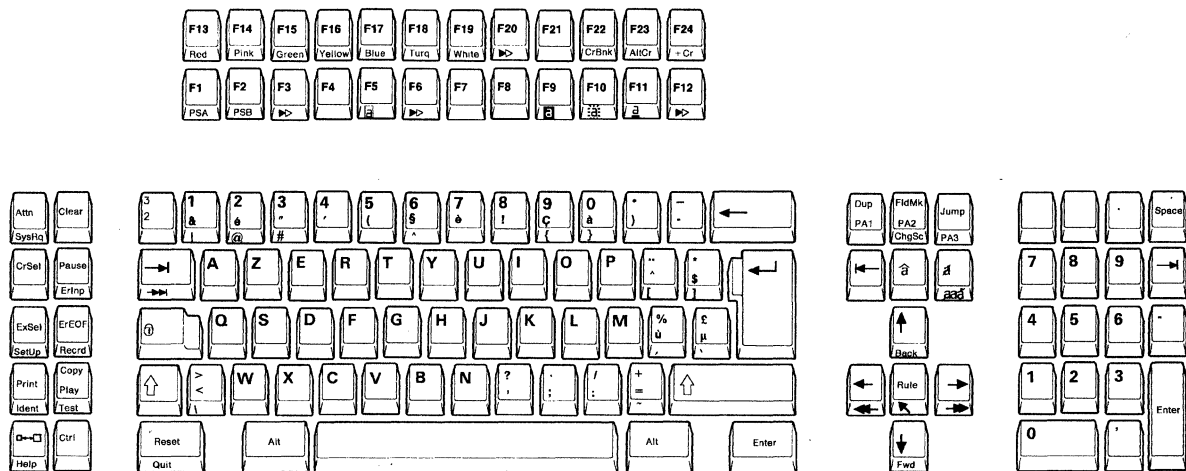


Figure C-5. Belgian 122-key Keyboard

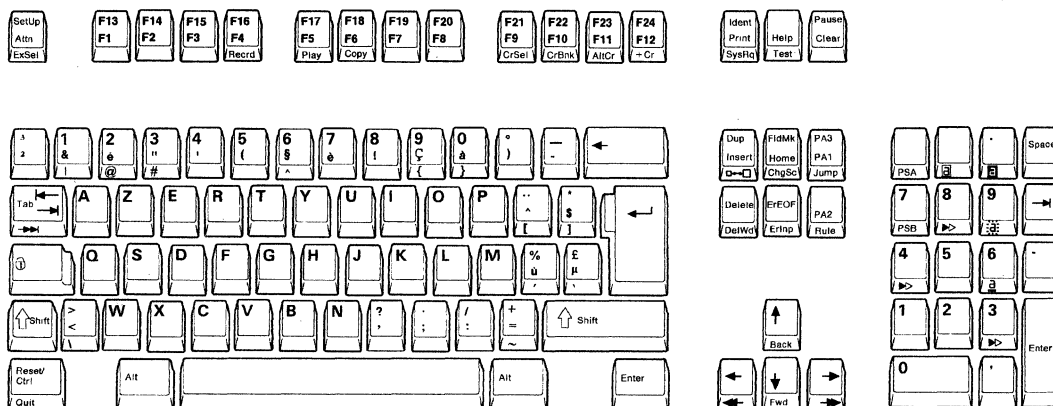


Figure C-6. Belgian IBM Enhanced Keyboard

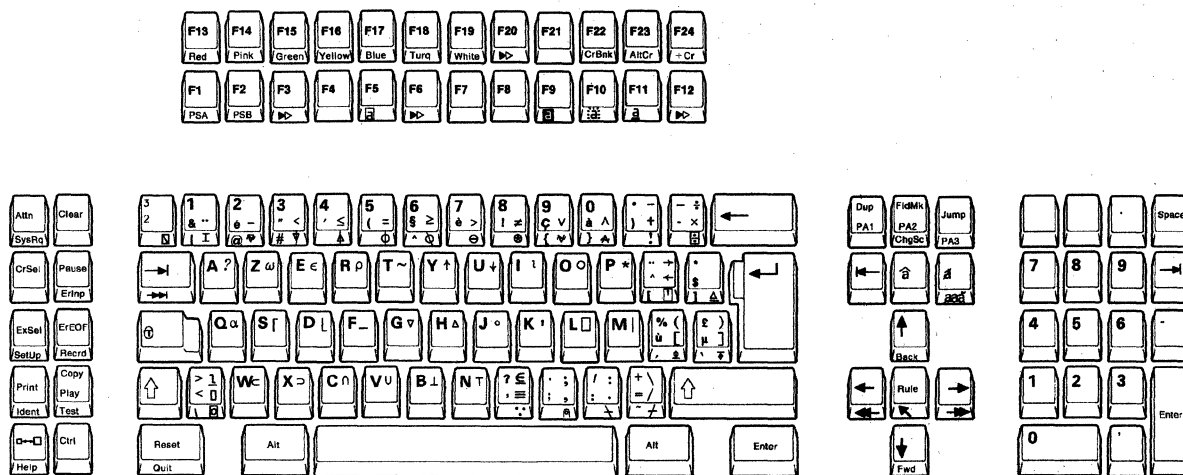


Figure C-7. Belgian APL Keyboard

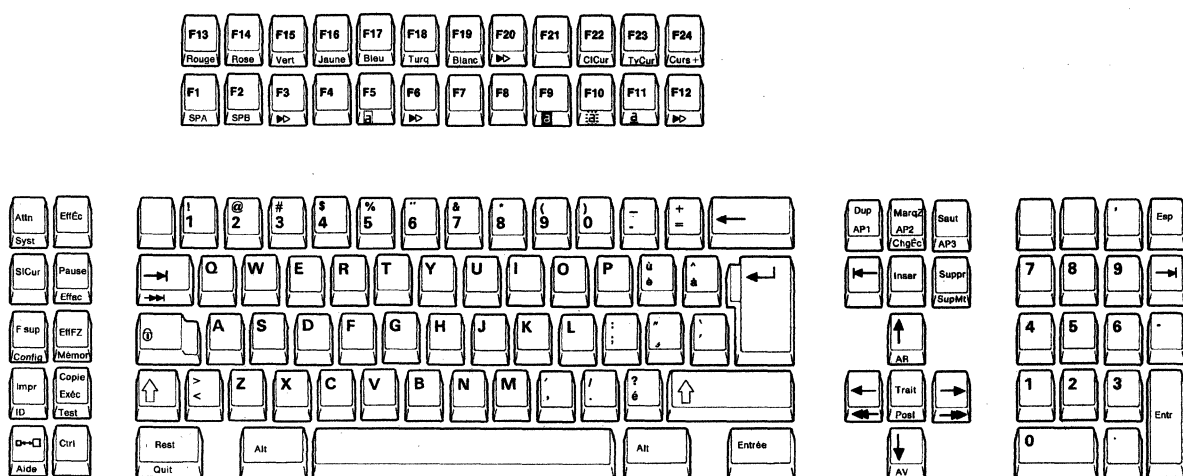


Figure C-8. Canadian-Bilingual 122-key Keyboard

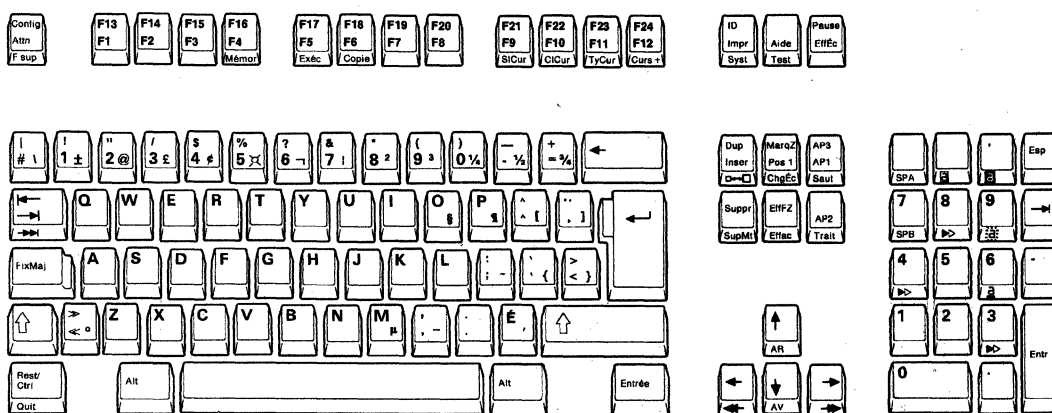


Figure C-9. Canadian-Bilingual IBM Enhanced Keyboard

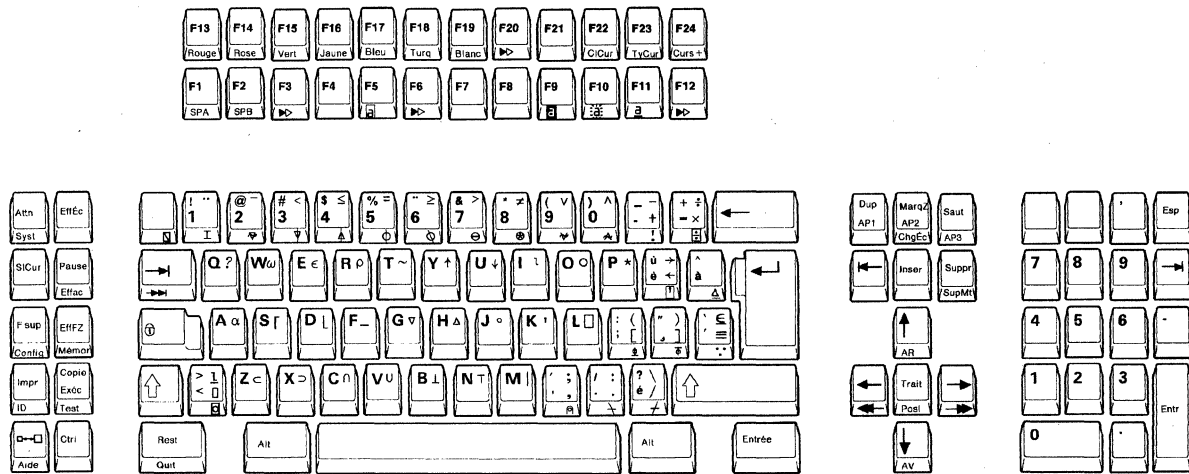


Figure C-10. Canadian-Bilingual APL Keyboard

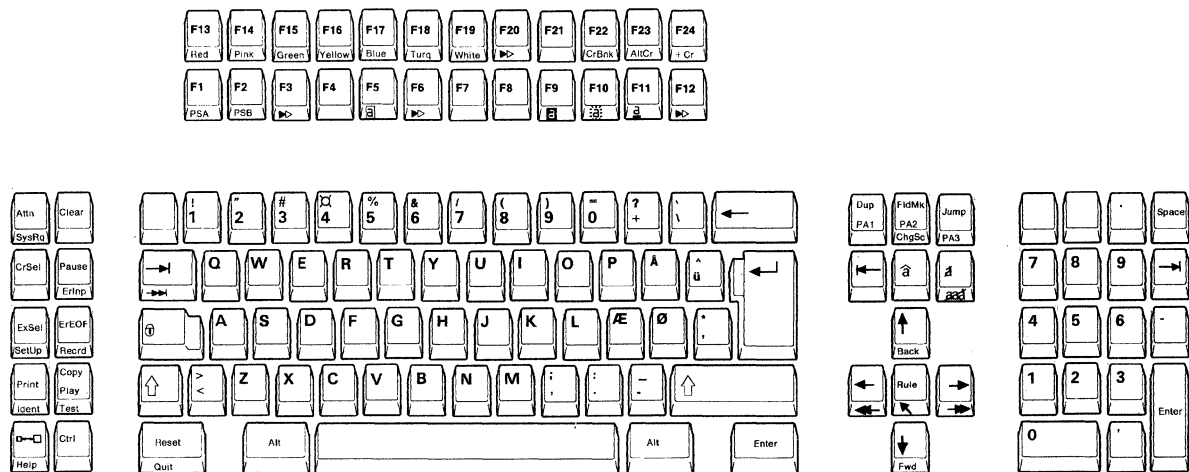


Figure C-11. Danish 122-key Keyboard

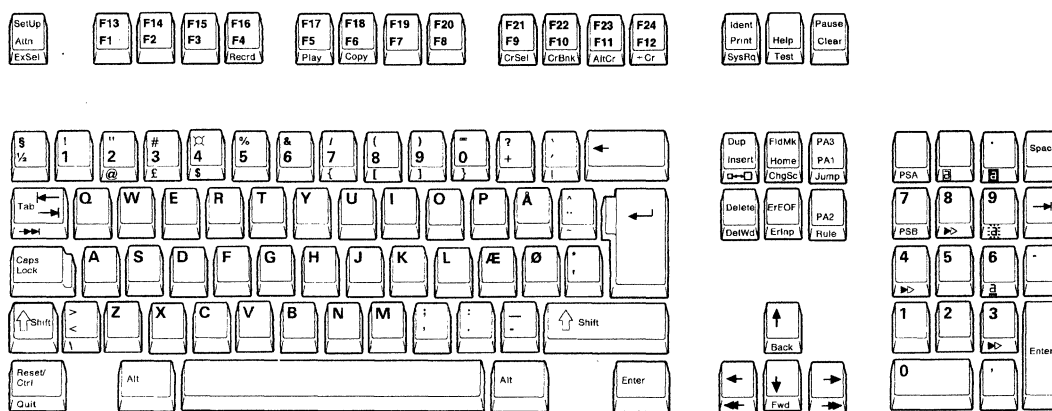


Figure C-12. Danish IBM Enhanced Keyboard

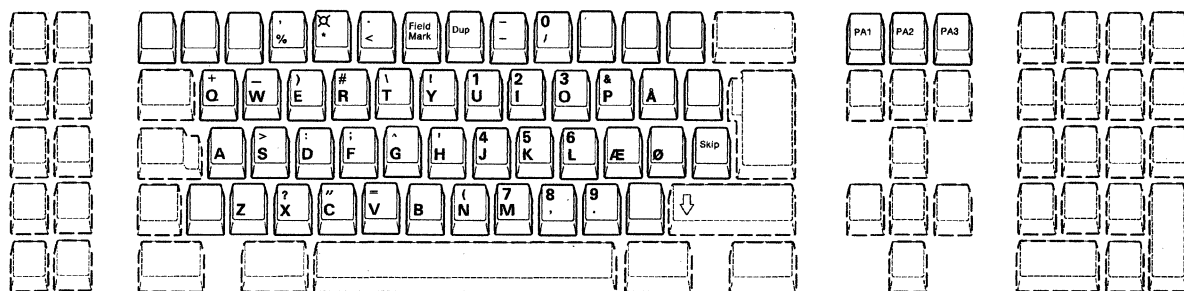


Figure C-13. Danish Data Entry Keyboard

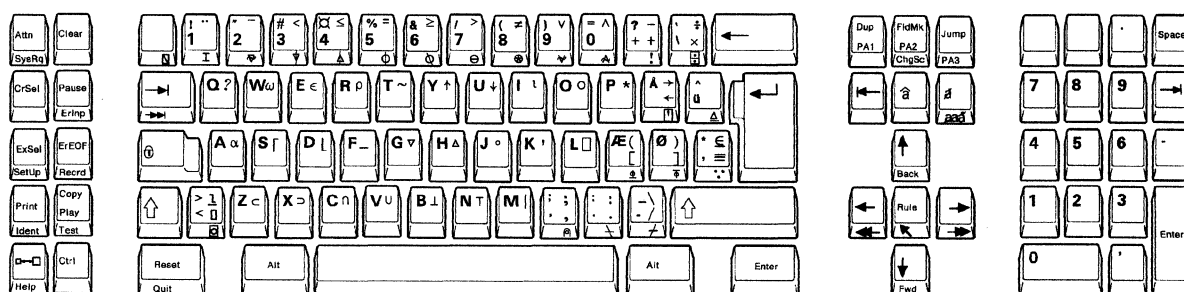
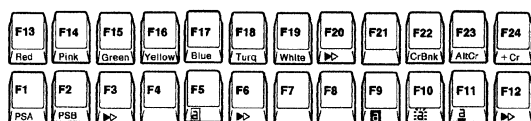


Figure C-14. Danish APL Keyboard

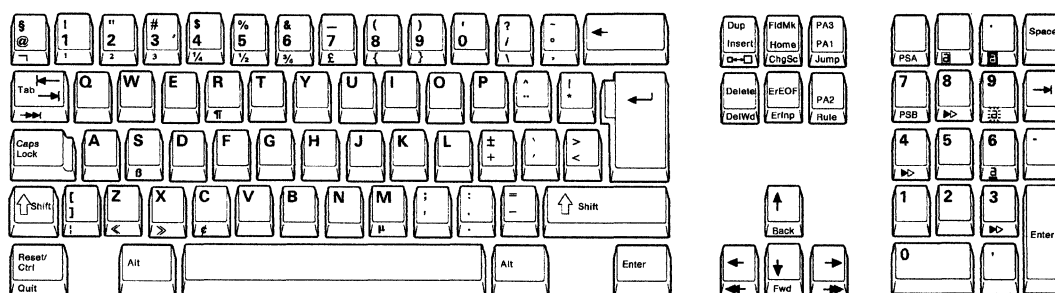
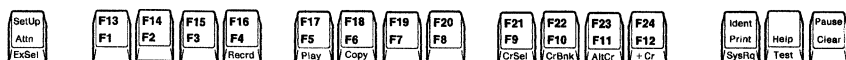


Figure C-15. Dutch IBM Enhanced Keyboard

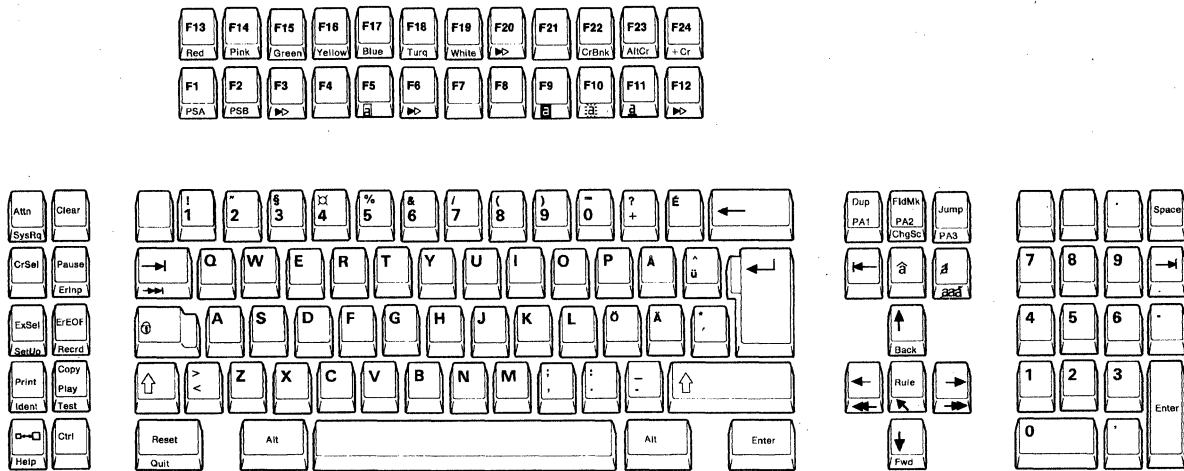


Figure C-16. Finnish/Swedish 122-key Keyboard

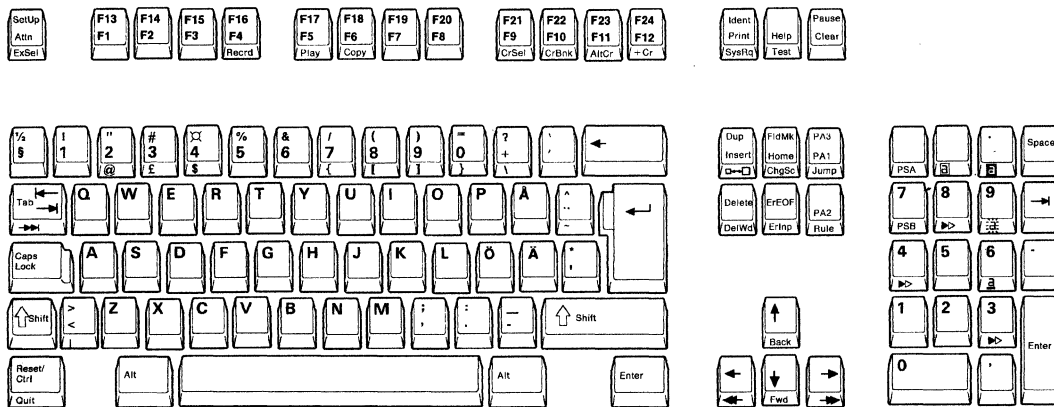


Figure C-17. Finnish/Swedish IBM Enhanced Keyboard

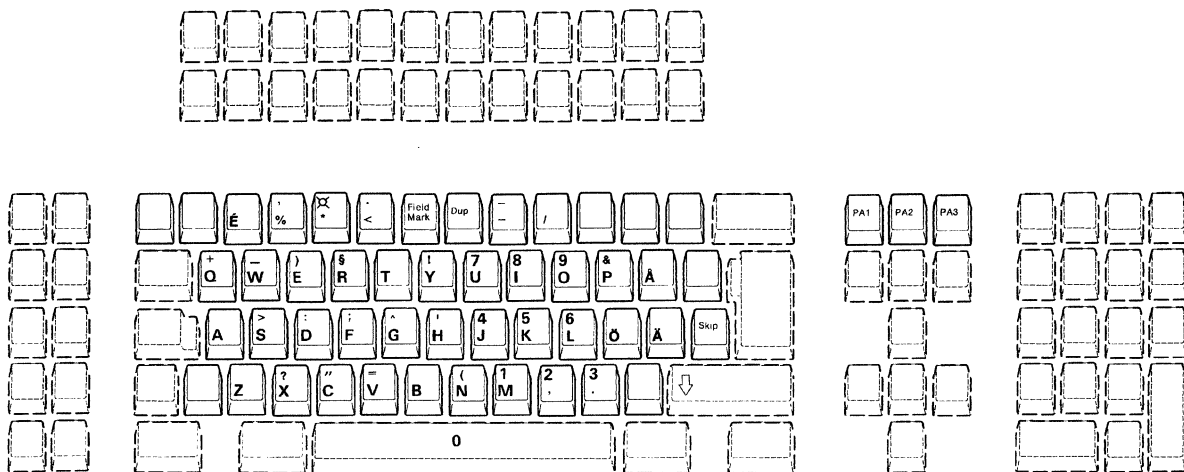


Figure C-18. Finnish/Swedish Data Entry Keyboard

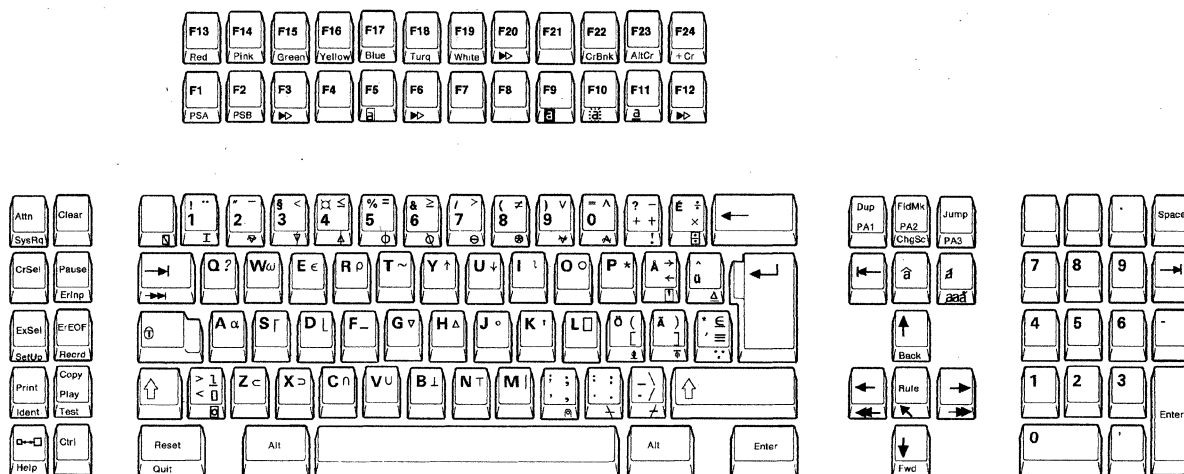


Figure C-19. Finnish/Swedish APL Keyboard

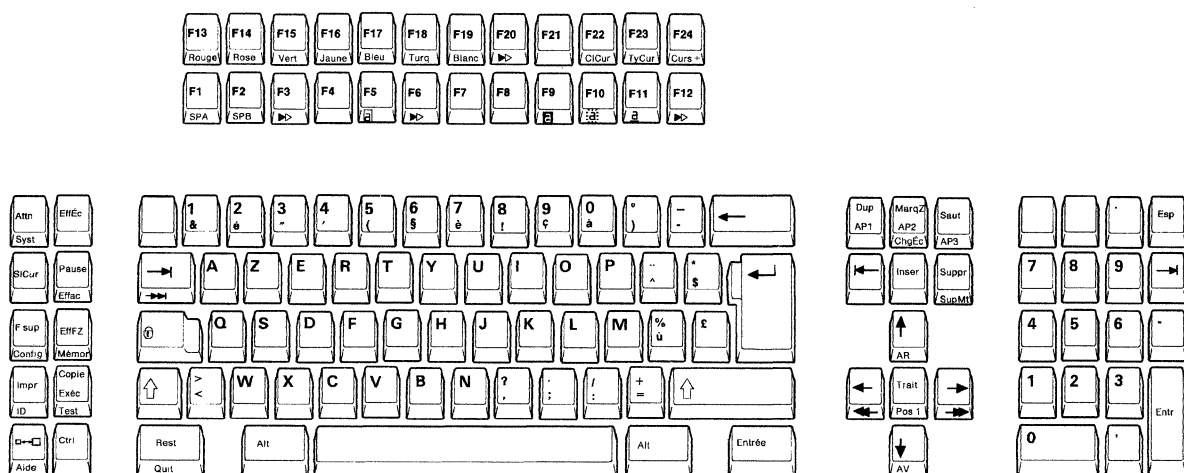


Figure C-20. French AZERTY 122-key Keyboard

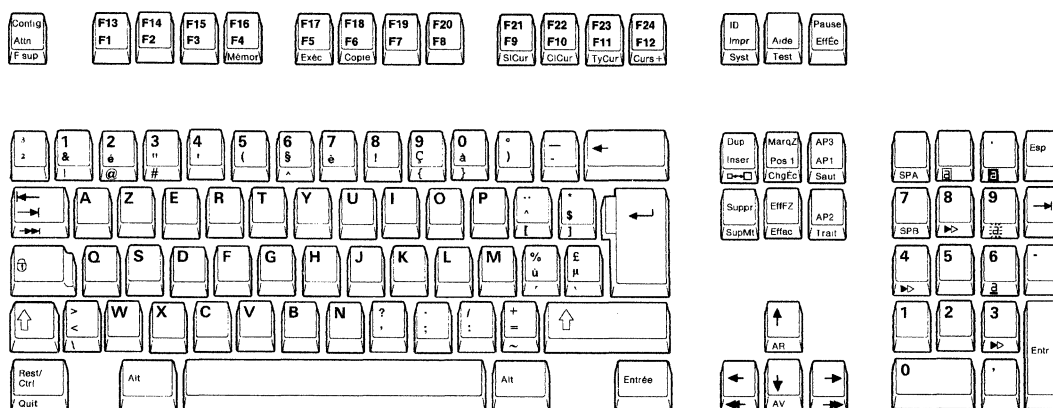


Figure C-21. French AZERTY IBM Enhanced Keyboard

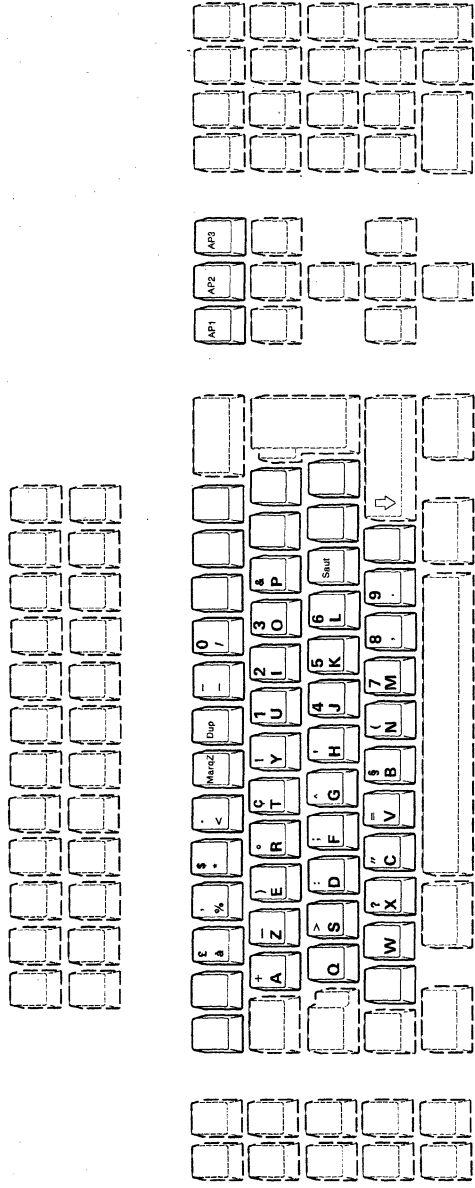


Figure C-22. French AZERTY Data Entry Keyboard

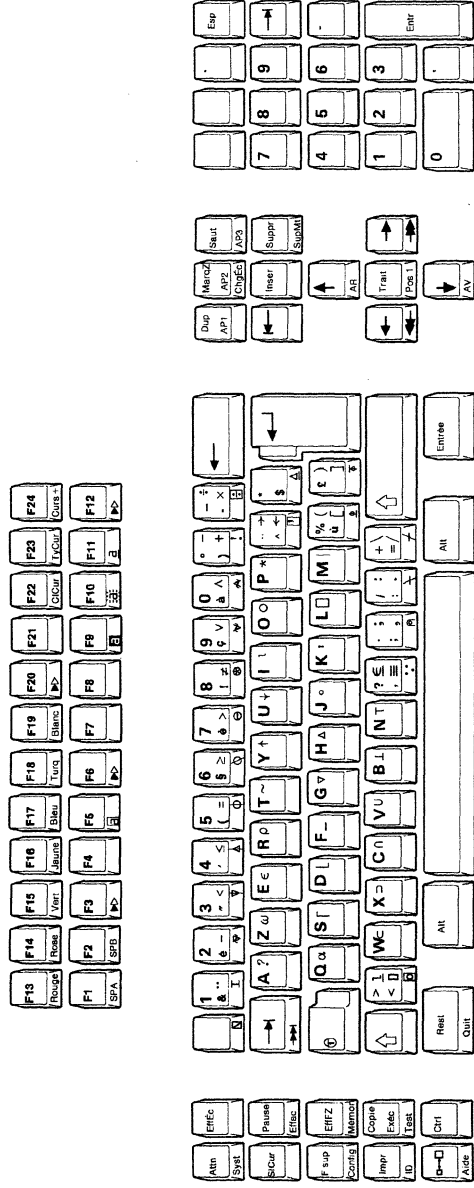


Figure C-23. French AZERTY APL Keyboard

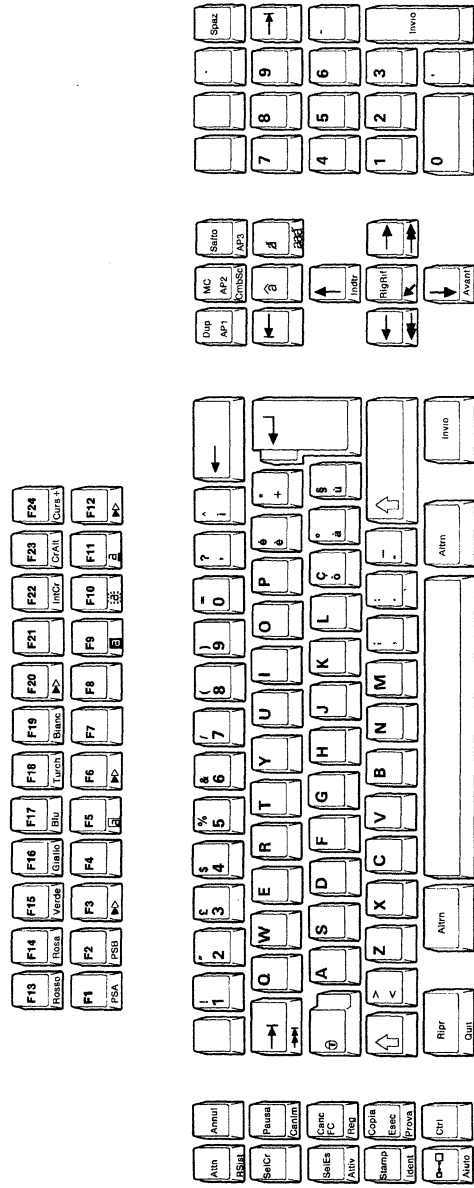


Figure C-24. Italian 122-key Keyboard

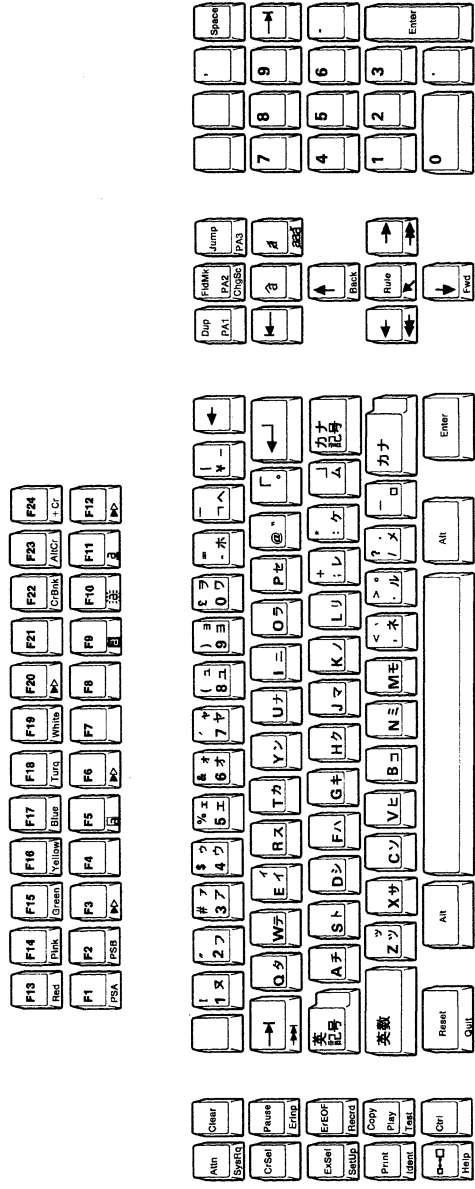


Figure C-28. Japanese Katakana 124-key Keyboard



Figure C-29. Japanese Katakana IBM Enhanced Keyboard

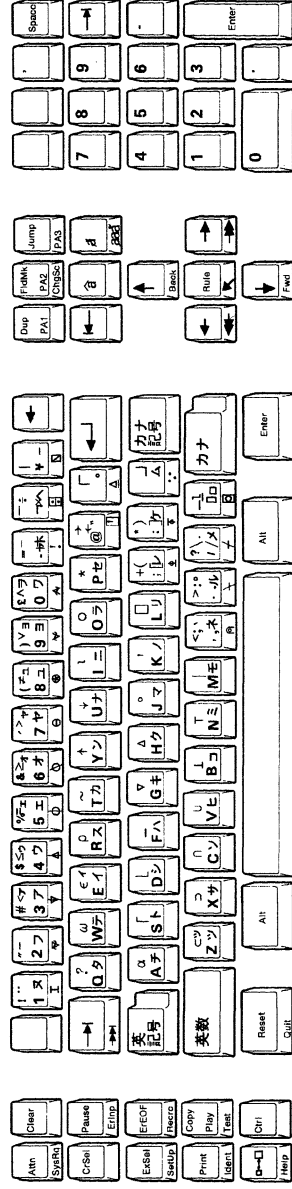


Figure C-30. Japanese Katakana APL Keyboard

Figure C-33. Latin American Spanish APL Keyboard

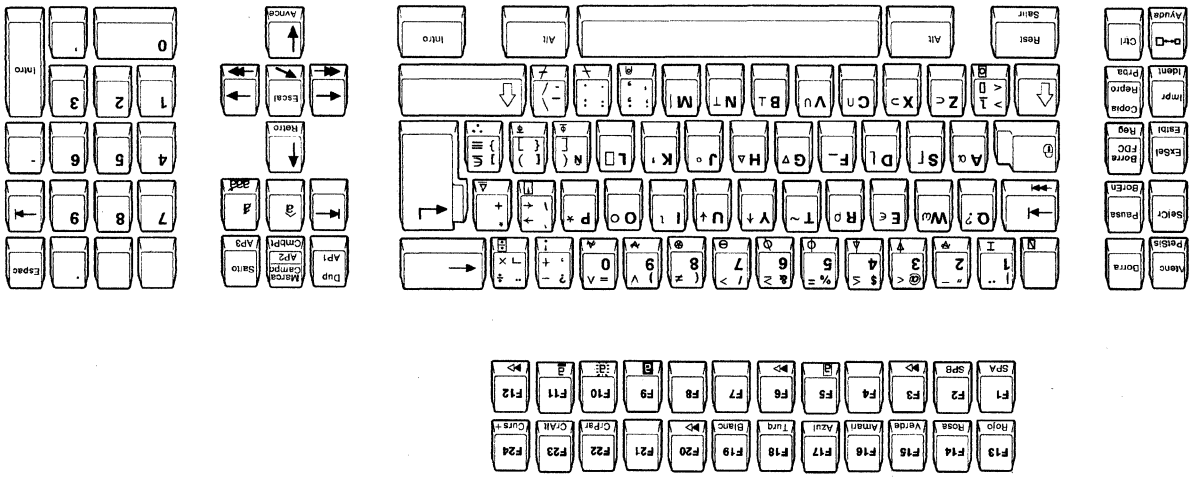


Figure C-32. Latin American Spanish IBM Enhanced Keyboard

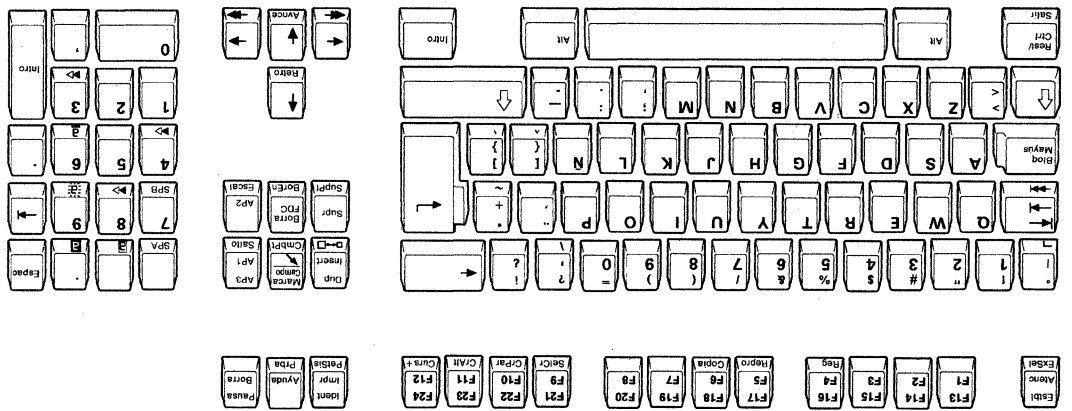
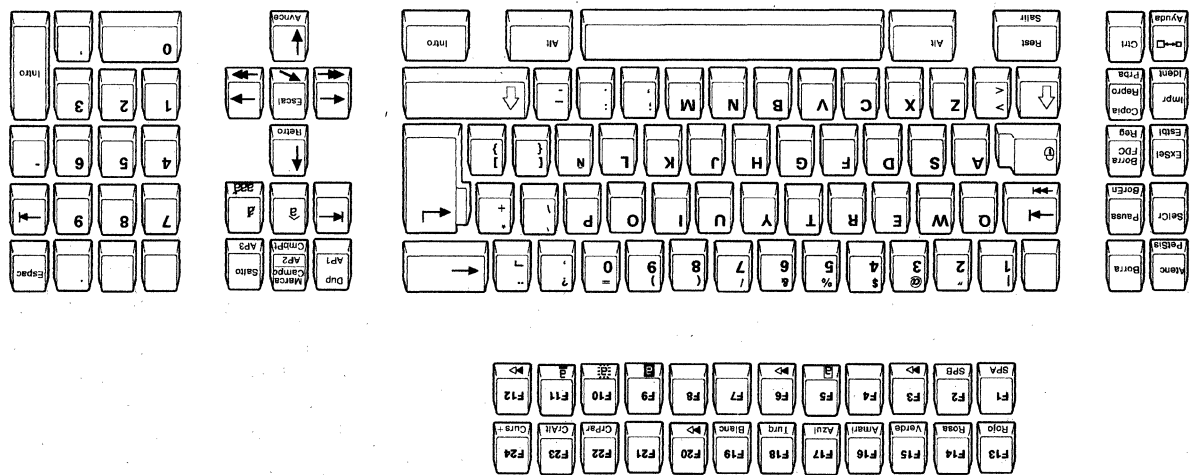


Figure C-31. Latin American Spanish 122-key Keyboard



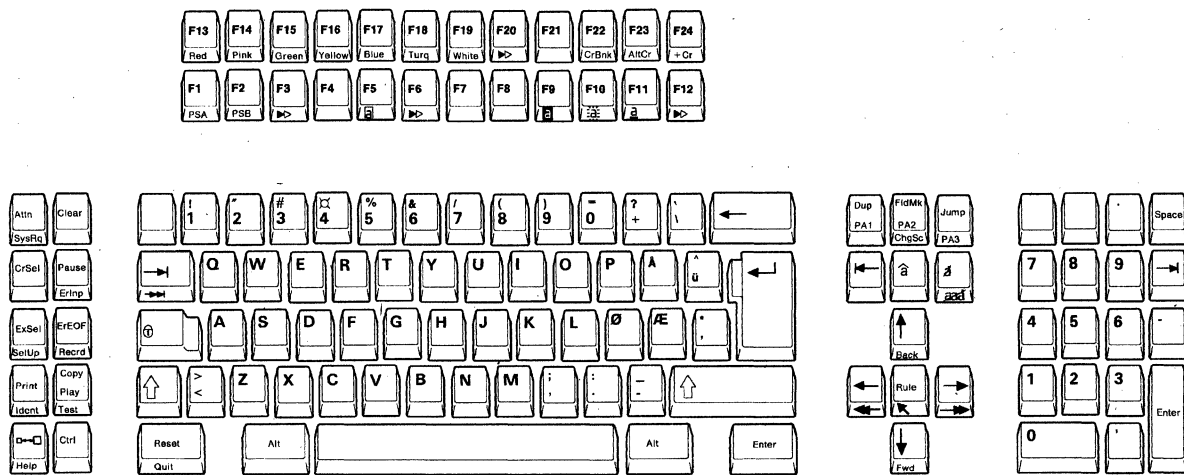


Figure C-34. Norwegian 122-key Keyboard

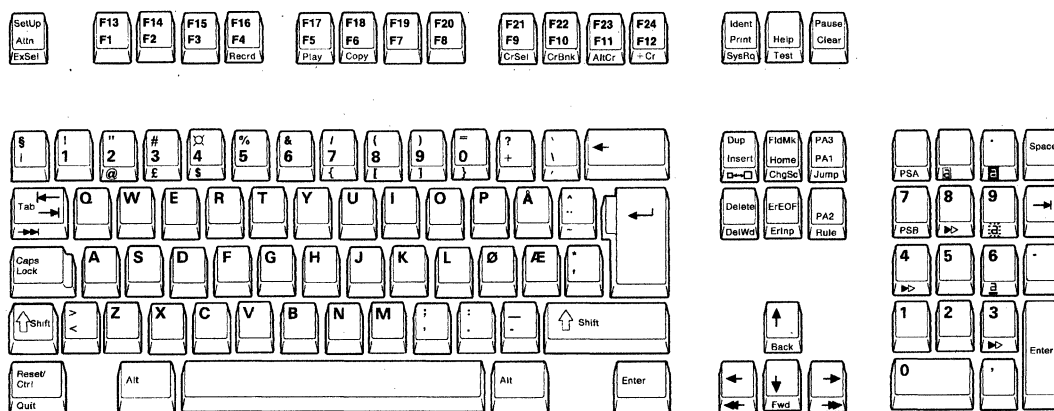


Figure C-35. Norwegian IBM Enhanced Keyboard

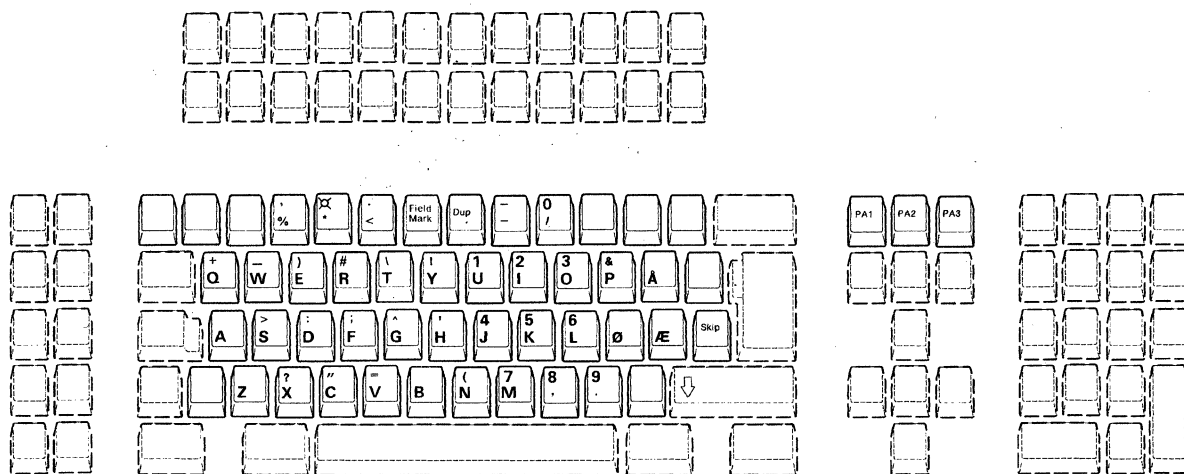


Figure C-36. Norwegian Data Entry Keyboard

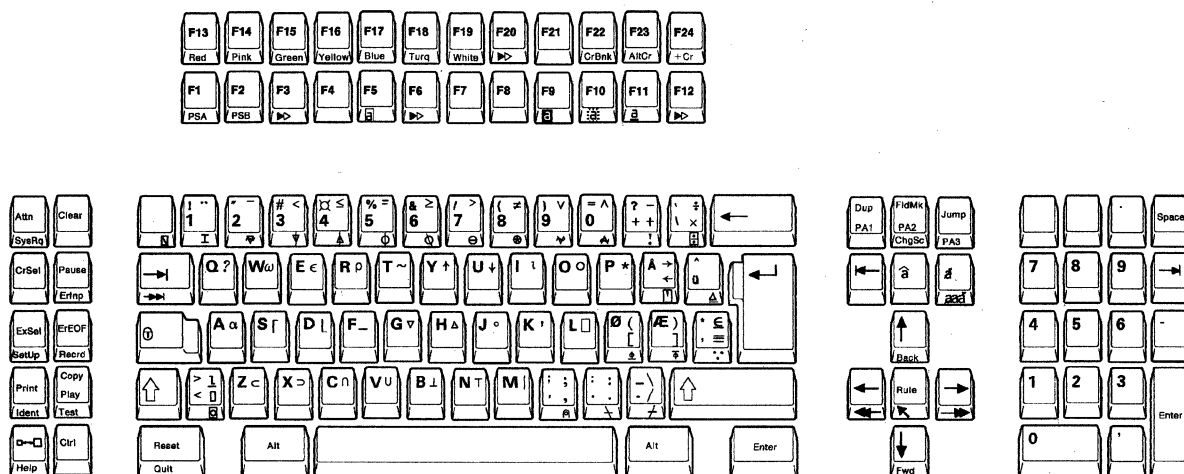


Figure C-37. Norwegian APL Keyboard

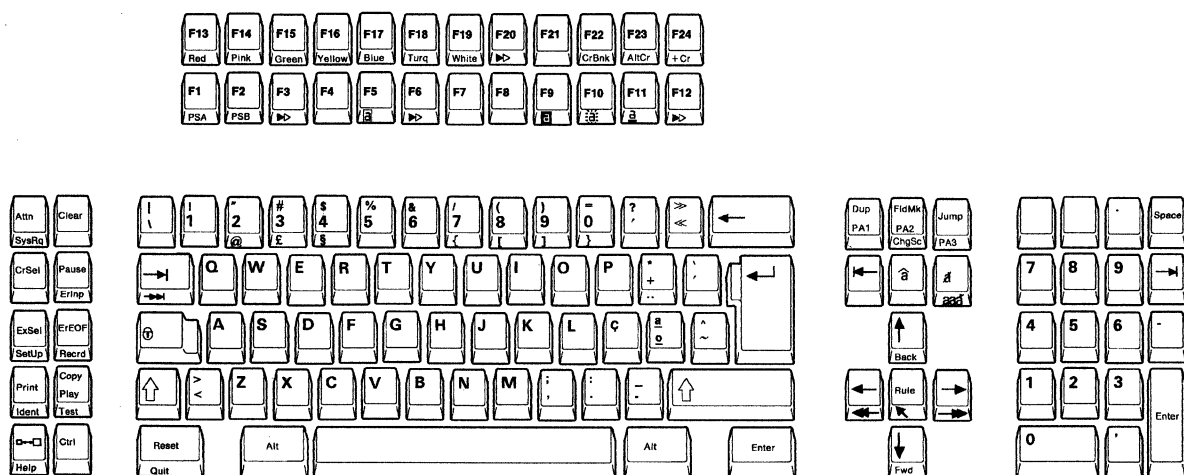


Figure C-38. Portuguese 122-key Keyboard

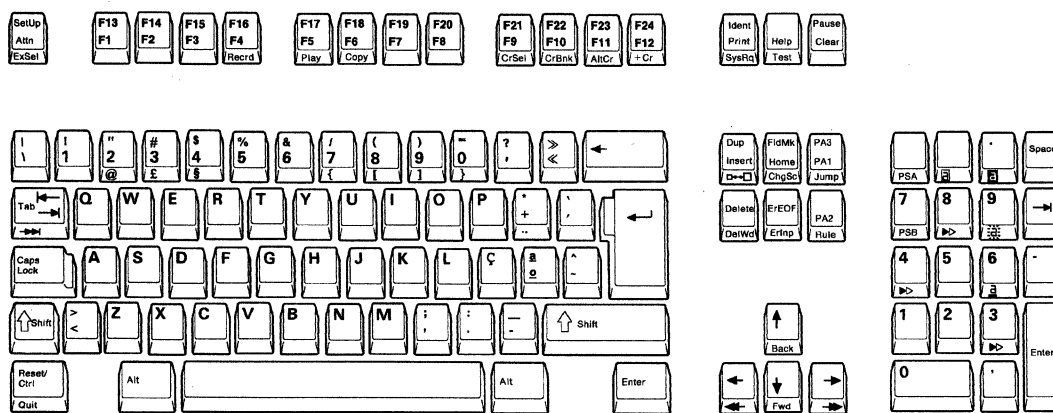


Figure C-39. Portuguese IBM Enhanced Keyboard

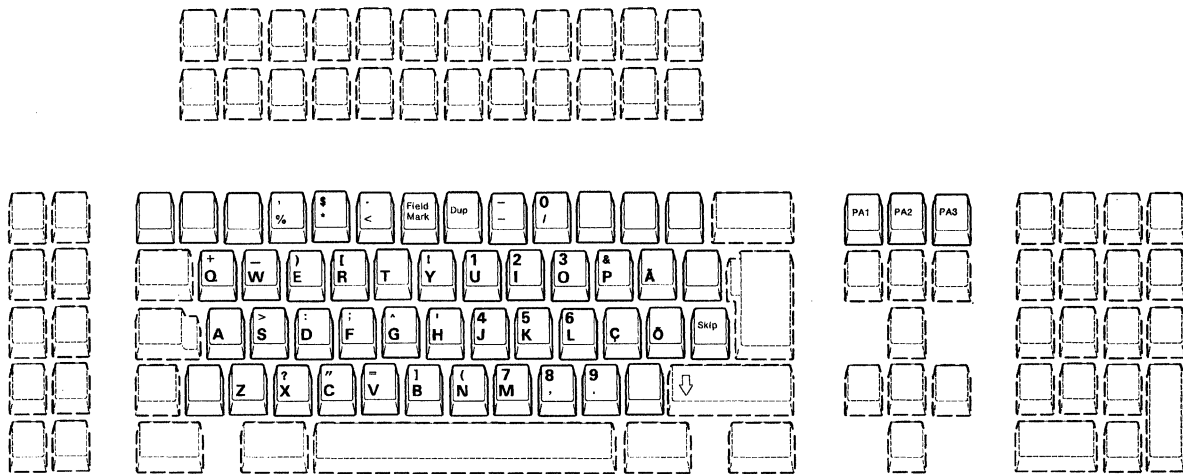


Figure C-40. Portuguese Data Entry Keyboard

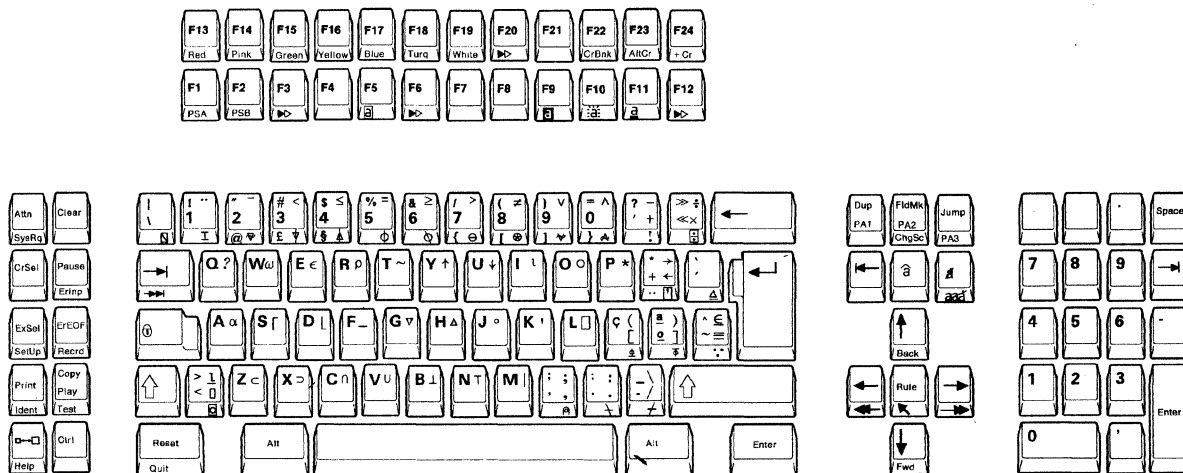


Figure C-41. Portuguese APL Keyboard

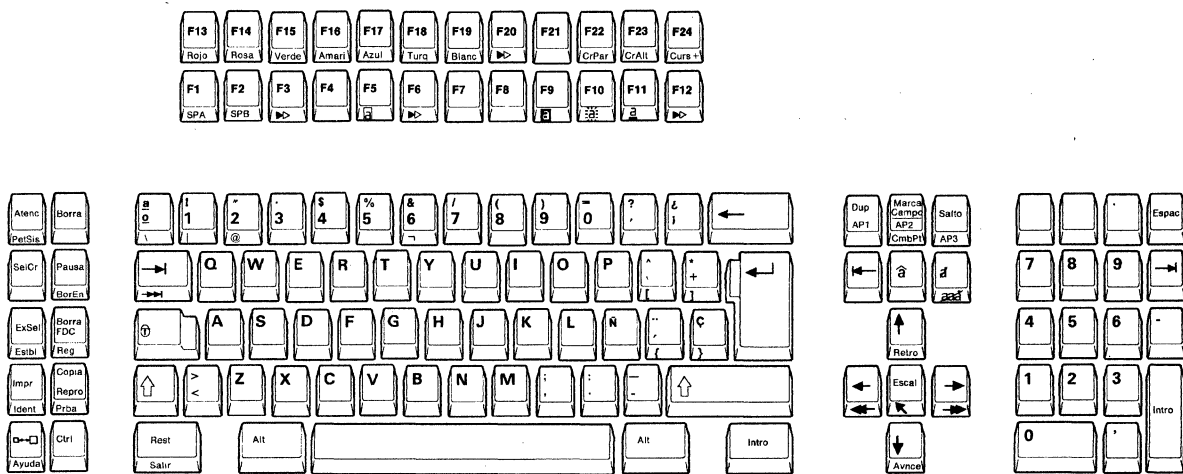


Figure C-42. Spanish 122-key Keyboard

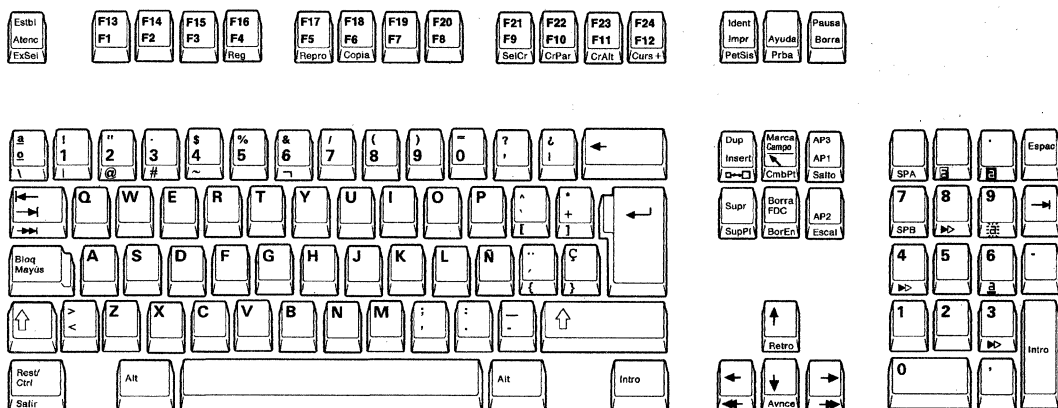


Figure C-43. Spanish IBM Enhanced Keyboard

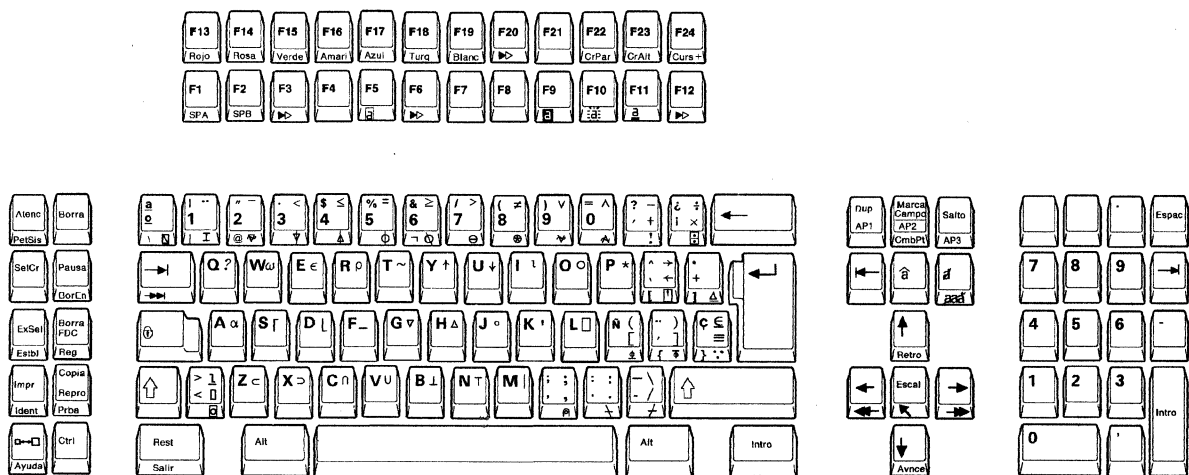


Figure C-44. Spanish APL Keyboard

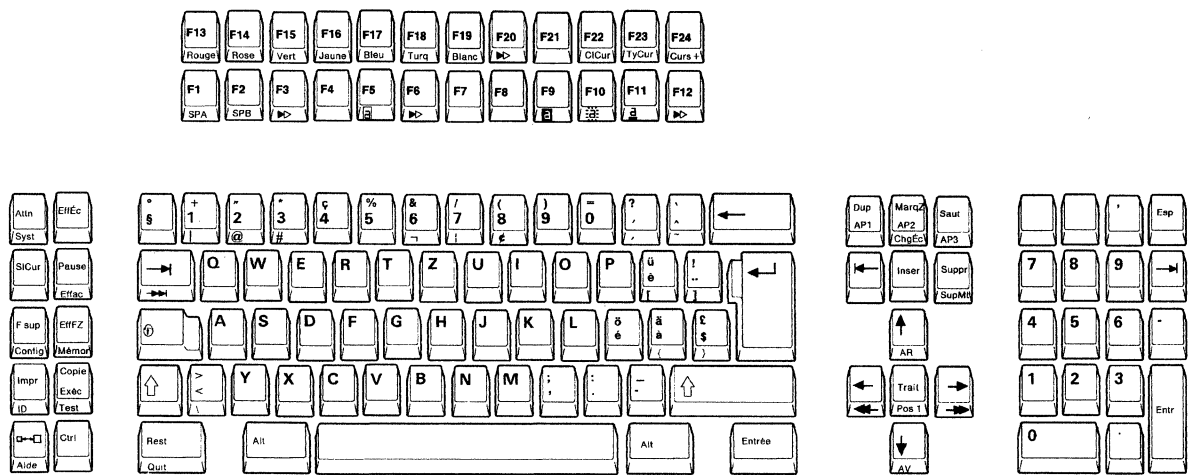


Figure C-45. Swiss-French 122-key Keyboard

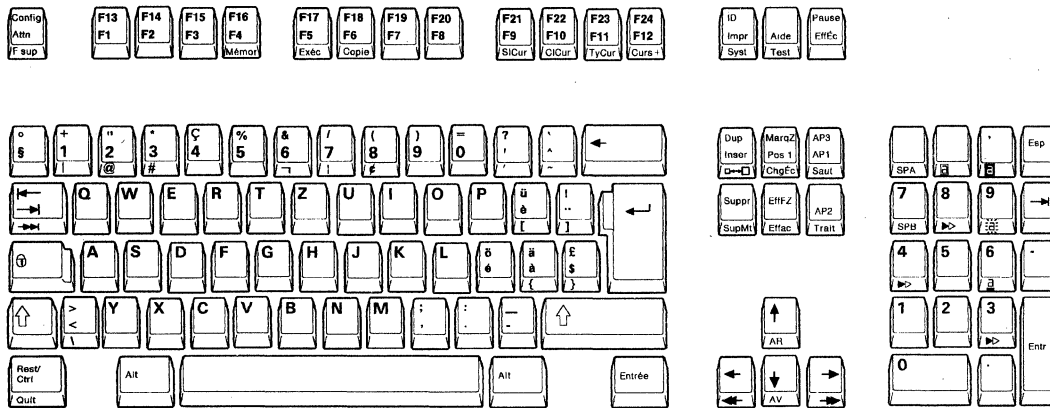


Figure C-46. Swiss-French IBM Enhanced Keyboard

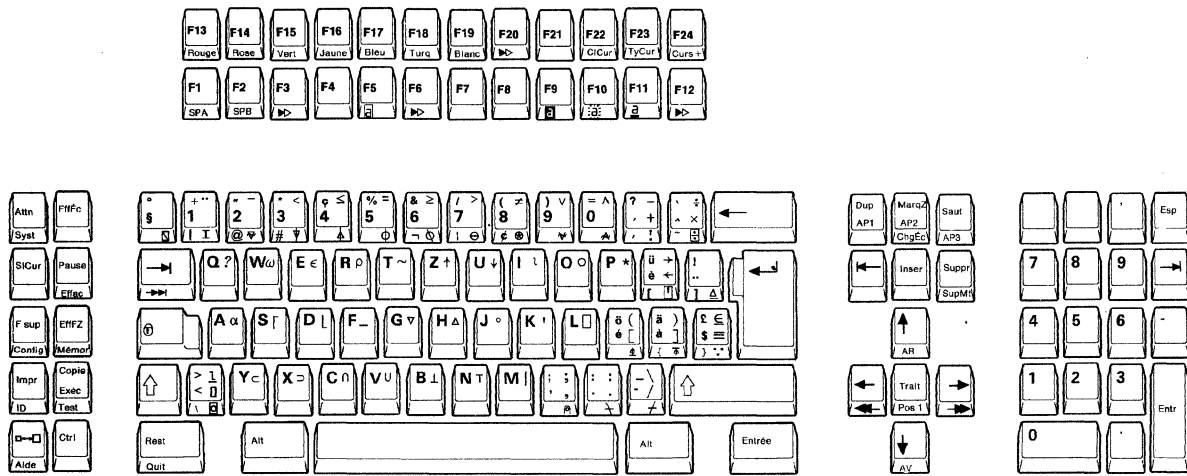


Figure C-47. Swiss-French APL Keyboard

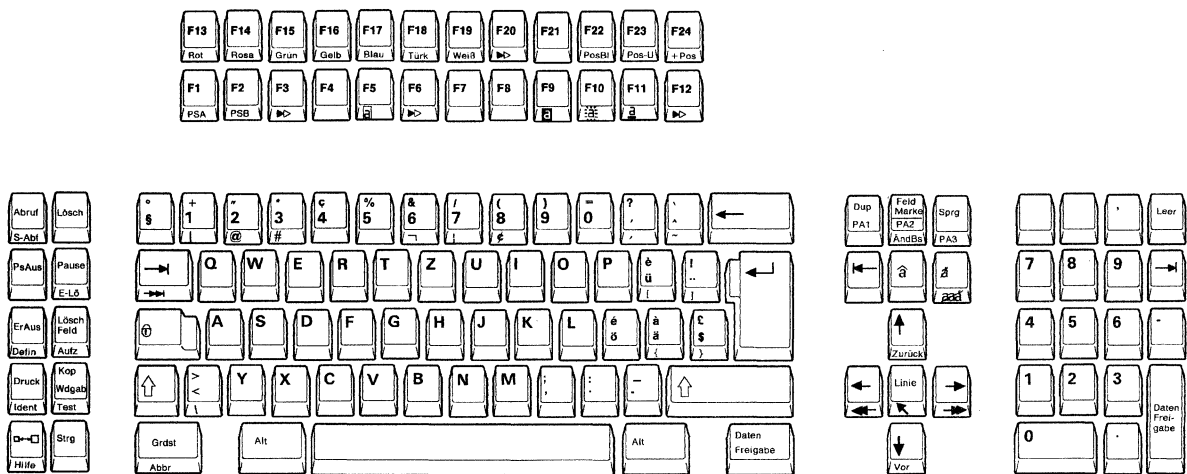


Figure C-48. Swiss-German 122-key Keyboard

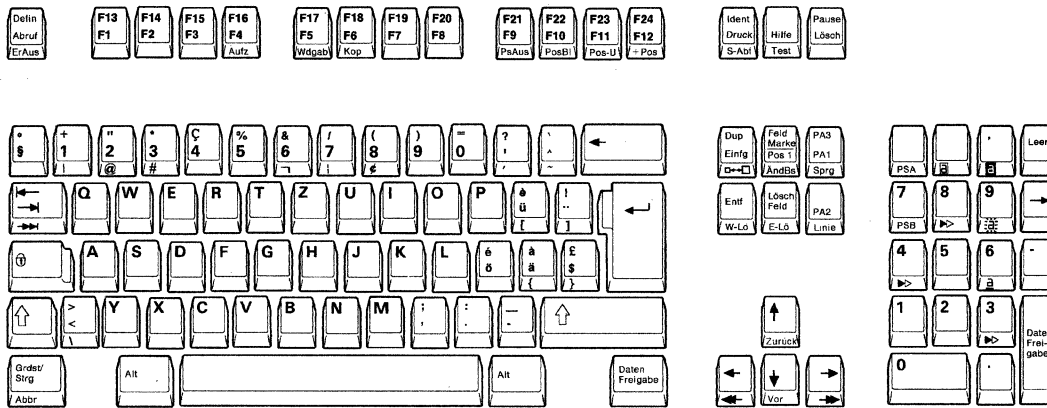


Figure C-49. Swiss-German IBM Enhanced Keyboard

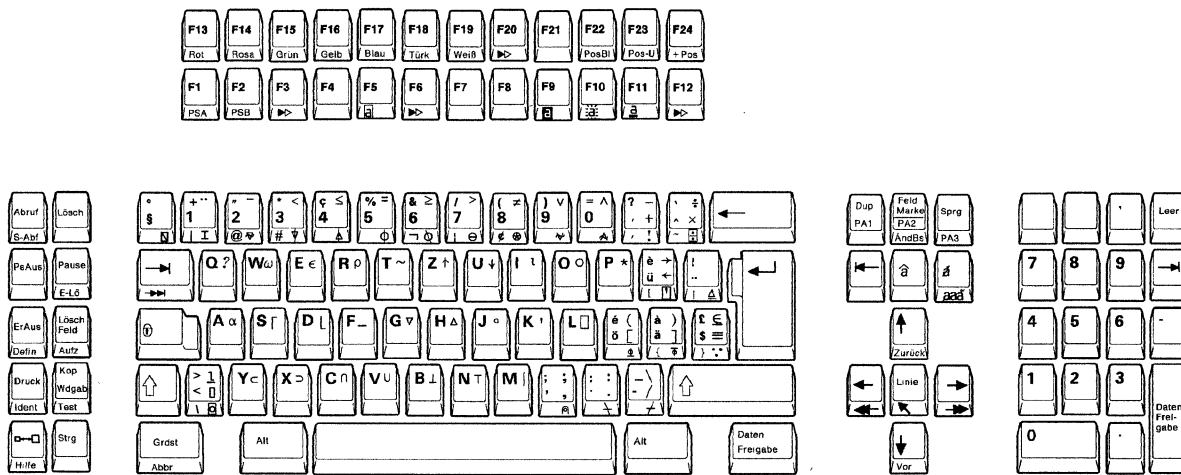


Figure C-50. Swiss-German APL Keyboard

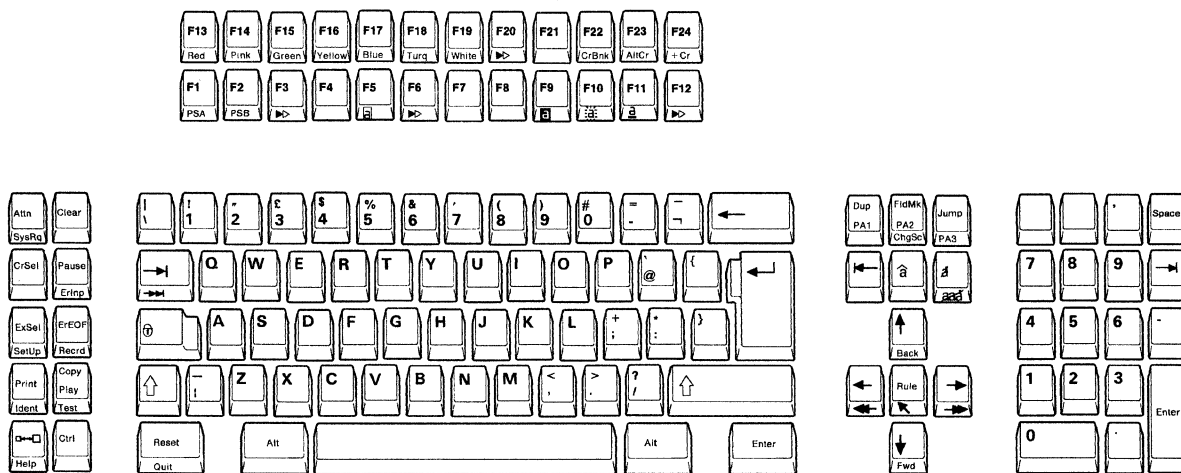


Figure C-51. U.K. English 122-key Keyboard

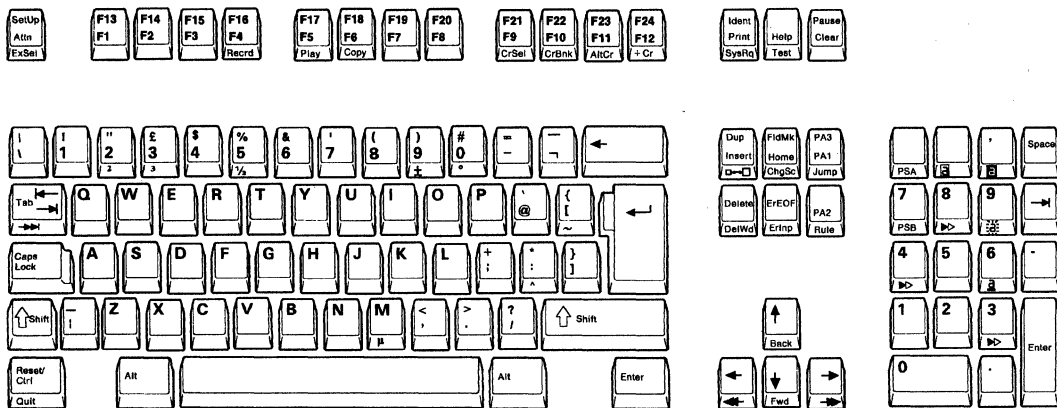


Figure C-52. U.K. English IBM Enhanced Entry Keyboard

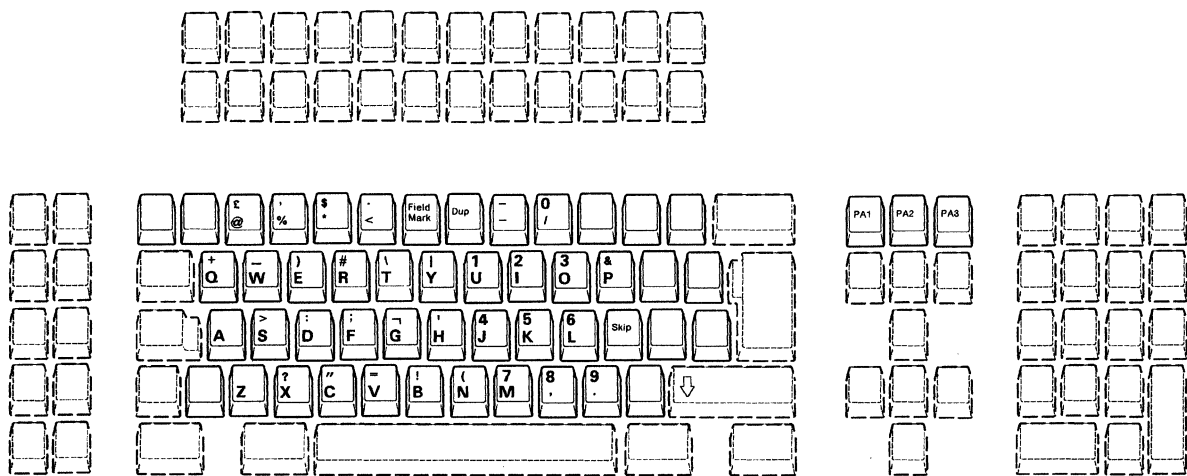


Figure C-53. U.K. English Data Entry Keyboard

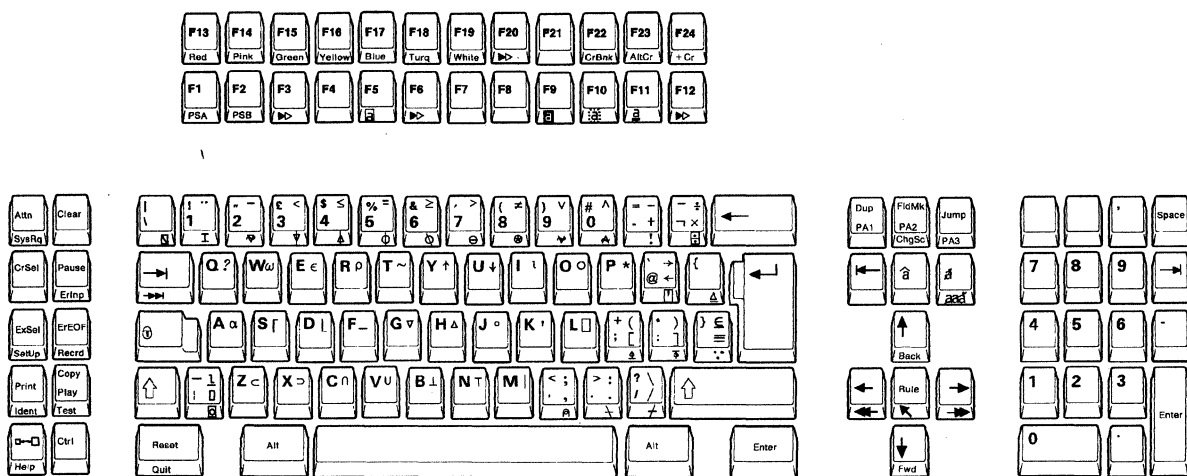


Figure C-54. U.K. English APL Keyboard

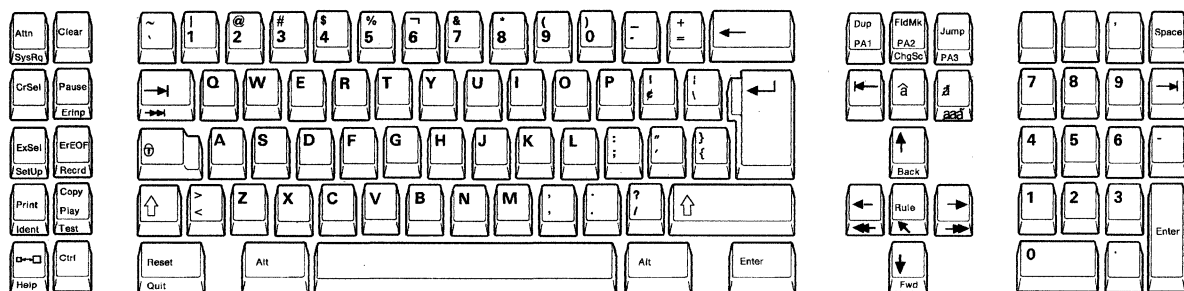


Figure C-55. U.S. English 122-key Keyboard

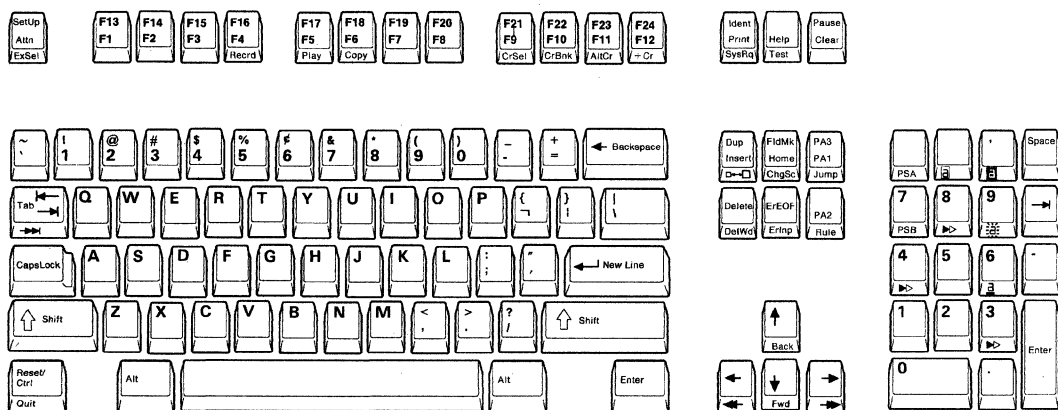


Figure C-56. U.S. English IBM Enhanced Keyboard

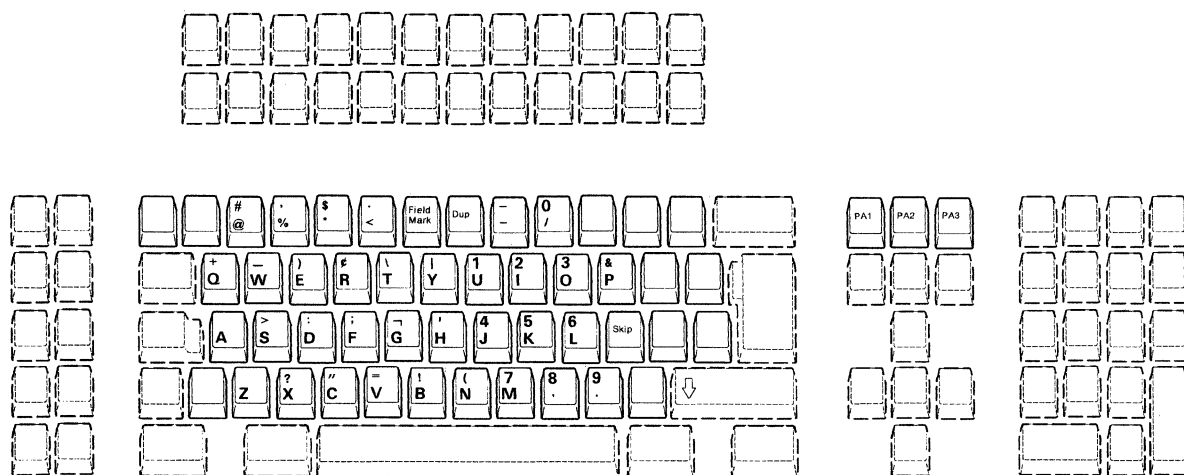


Figure C-57. U.S. English 122-key Data Entry Keyboard

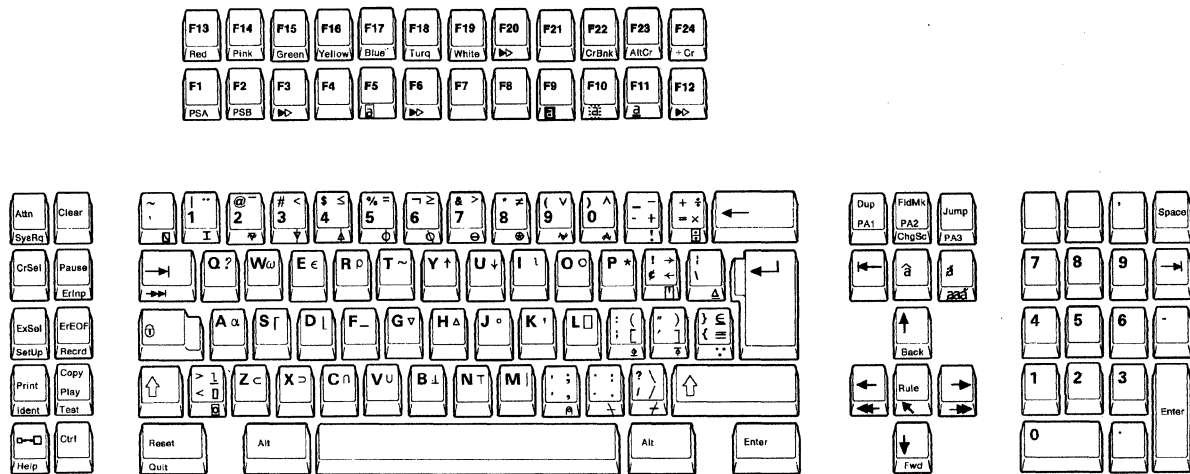


Figure C-58. U.S. English APL Keyboard

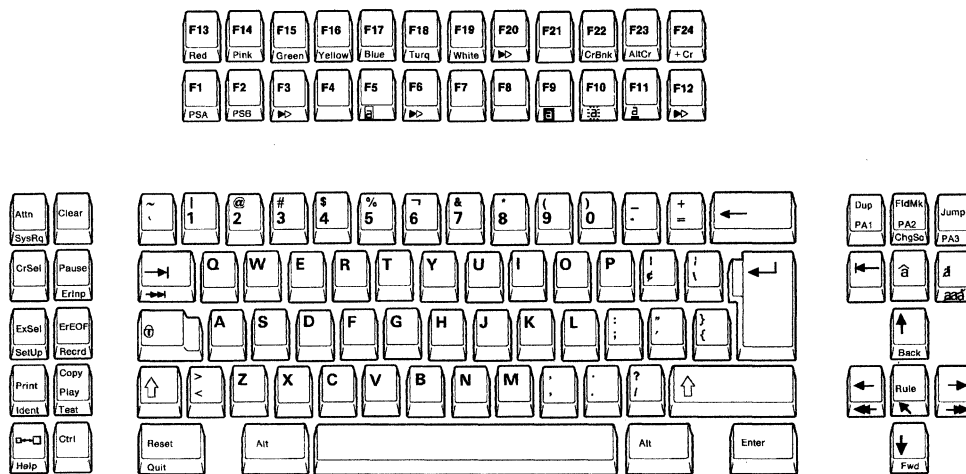


Figure C-59. U.S. English 104-key Keyboard

Glossary

This glossary defines terms and abbreviations in this manual. If you do not find the term you are looking for, refer to the Index or to the *Dictionary of Computing*, GC20-1699.

Definitions reprinted from the *American National Dictionary for Information Processing Systems* are identified by the symbol (A) following the definition.

Definitions reprinted from a published section of the International Organization for Standardization's *Vocabulary — Information Processing* or from a published section of the *ISO Vocabulary — Office Machines* are identified by the symbol (I) following the definition. Because many ISO definitions are also reproduced in the *American National Dictionary for Information Processing Systems*, ISO definitions may also be identified by the symbol (A).

Definitions reprinted from working documents, draft proposals, or draft international standards of ISO Technical Committee 97, Subcommittee 1 (Vocabulary) are identified by the symbol (T) following the definition, indicating that final agreement has not yet been reached among its participating members.

A

alarm. A signal, usually audible, at a device such as a display station or printer that is used to get the user's attention.

application program. 1. A program written for or by a user that applies to the user's work, such as a program that does inventory control or payroll. 2. A program used to connect and communicate with stations in a network, enabling users to perform application-oriented activities. 3. In SDF/CICS, the program using the physical maps and symbolic description maps generated from a source map set.

attribute character. 1. In SDF/CICS, a character used in the field attribute definition subfunction of the map editor, denoting a set of field attributes. The set of field attributes can be associated with the character in the session profile or with an EQUATE command; synonymous with equate character. 2. A character associated with a field in a display file that defines how the field is displayed, for example, underlined, blinking, or intensified.

audible alarm. An alarm that is sounded when designated events occur that require operator attention or intervention before continuing system operation.

AZERTY. The key layout of keyboards used in standard European typewriters. The term describes the sequence of the first six letters in the first row of alphabetic keys.

B

BSC. Binary synchronous communication.

C

character. 1. A member of a set of elements that is used for the representation, organization, or control of data. Characters may be letters, digits, punctuation marks, or other symbols. (T) 2. A letter, digit, or other symbol that is used as part of the organization, control, or representation of data. A character is often in the form of a spatial arrangement of adjacent or connected strokes. (A)

cathode ray tube display (CRT display). 1. A device that presents data in visual form by means of controlled electron beams. (A) 2. The data display produced by the device as in (1). (A)

coaxial cable. A cable consisting of one conductor, usually a small copper tube or wire, within and insulated from another conductor of larger diameter, usually copper tubing or copper braid.

communication controller. 1. A device that directs the transmission of data over the data links of a network; its operation may be controlled by a program executed in a processor to which the controller is connected or it may be controlled by a program executed within the device. (T) 2. A type of communication control unit whose operations are controlled by one or more programs stored and executed in the unit. It manages the details of line control and the routing of data through a network.

control unit. See device control unit. See also communication controller.

cursor. A movable, visible mark used to indicate the position at which the next operation will occur on a display surface. (I) (A)

cursor control keys. The keys that control the movement of the cursor. (T)

D

device control unit. A hardware device that controls the reading, writing, or displaying of data at one or more input/output devices or terminals.

display. 1. A visual presentation of data. (I) (A) 2. To present data visually. (I) (A) 3. The word "display" means "cathode ray tube display" in this book. See cathode ray tube display.

display station. An input/output device containing a display screen and an attached keyboard that allows a user to send information to or receive information from the system.

E

EBCDIC. Extended binary-coded decimal interchange code. A coded character set consisting of 8-bit coded characters. (A)

EBCDIC character. Any one of the symbols included in the 8-bit EBCDIC set.

error code. See system reference code.

F

field. 1. On a data medium or a storage, a specified area used for a particular class of data; for example, a group of character positions used to enter or display wage rates on a screen. (T) 2. The smallest identifiable part of a record. 3. In SDF/CICS, a defined data area in a map that contains a set of characters defined, manipulated, or operated on as a unit; the data area is associated with a field attribute.

formatted display. A display in which the attributes of one or more display fields have been defined by the user. Contrast with unformatted display.

function key. 1. In computer graphics, a button or switch that may be operated to send a signal to the computer program controlling the display. (T) 2. See programmed function key.

H

highlighting. Emphasizing a display element or segment by modifying its visual attributes. (I) (A)

home position. 1. A location defined by the user. 2. The beginning of a file or display. 3. The position to which a cursor normally returns. 4. In the 3270 Information Display System, the first unprotected character position in the partition's character buffer, if the character buffer contains at least one unprotected field, or

the partition's character buffer address is 0, or if the buffer contains no fields or no unprotected fields.

host system. 1. A data processing system used to prepare programs and operating environments for use on another computer or controller. 2. The data processing system to which a network is connected and with which the system can communicate. 3. The controlling or highest level system in a data communication configuration; for example, a System/38 is the host system for the work stations connected to it.

I

input field. 1. In computer graphics, an unprotected field on a display surface in which data can be entered, modified, or erased. 2. A field in a display file into which a user can key in data. An input field is passed from the device to the program when the program reads the record containing that field.

interface. 1. A shared boundary between two functional units, defined by functional characteristics, common physical interconnection characteristics, signal characteristics, and other characteristics as appropriate. (I) 2. A shared boundary. An interface may be a hardware component to link two devices or a portion of storage or registers accessed by two or more computer programs. (A) 3. Hardware, software, or both, that links systems, programs, or devices.

Note: The concept involves specification of the connection of two functional units that have different functions.

K

katakana. A character set of symbols used in one of the two common Japanese phonetic alphabets, which is used primarily to write foreign words phonetically.

key. 1. An identifier within a set of data elements. (T) 2. One or more characters used to identify the record and establish the order of the record within an indexed file. 3. In VSAM, one or more consecutive characters taken from a data record, used to identify the record and establish its order with respect to other records. 4. In ACF/TCAM, a character string that matches a definition in the key table. This key identifies the destination of a message or special processing to be done on that message. 5. To enter information from a keyboard. 6. In sorting, synonym for control word.

keyboard. 1. An arrangement of typing and function keys laid out in a specified manner. (T) 2. A systematic arrangement of keys by which a machine is operated or by which data are entered. 3. A device used to encode data by key depression, which causes generation of the selected code element. 4. A group of numeric keys, alphabetic keys, or function keys used for entering

information into a terminal and into the system. 5. See also AZERTY.

keyboard overlay. A template placed on a keyboard to explain the function of each key for a particular application program or for a keyboard program.

key click. Transient pulses or surges on a transmission line set up by the opening or closing of keying circuit contacts.

key in. To enter information by means of a keyboard.

key lock. On a typewriter, a device that prevents keys from being actuated. (T)

keylock feature. 1. On a display station, a security feature in which a lock and key can be used to restrict use of the station. 2. In 8100, a processor feature that prevents unauthorized system access by means of a three-position, key-operated switch.

M

margin. 1. The space above, below, and on either side of the body of a page. 2. The left or right limit of a column.

N

non-SNA station. In ACF/TCAM, a channel-attached 2260 or 3270 Display Station or a station on a binary synchronous or start-stop line.

non-SNA terminal. A terminal that supports non-SNA protocols; for example, channel-attached 3270 Information Display System or devices supported by Network Terminal Option (NTO) that use binary synchronous protocols. Contrast with SNA terminal.

null. 1. Empty. 2. Having no meaning. 3. Not usable.

null character (NUL). 1. A control character that is used to accomplish media-fill or time-fill and that may be inserted into or removed from a sequence of characters without affecting the meaning of the sequence; however, the control of equipment or the format may be affected by this character. (I) (A) 2. The EBCDIC character that represents hex 00. 3. See also space character.

numeric data. 1. Data represented by numerals. (I) (A) 2. Data in the form of numerals and some special characters; for example, a date represented as 81/01/01. Synonymous with numerical data.

numeric field. 1. An area reserved for a particular unit of information and that can contain only the digits 0 through 9. Contrast with character field. 2. In the 3270 Information Display System, a display field that accepts only numeric (0-9), minus sign, decimal sign, and DUP keyboard entries.

numeric keypad. On an IBM personal computer keyboard, the lighter-colored keys at the right-hand side that are labeled decimal point (.) and 0 through 9. When the keypad is deactivated by the Num Lock key, the same keys perform other functions: Home, PgUp, PgDn, Del, End, Ins, and cursor control.

O

offline. 1. Pertaining to the operation of a functional unit when not under the direct control of a computer. (I) (A) 2. Neither controlled by, nor communicating with, a computer. Contrast with online.

online. 1. Pertaining to the operation of a functional unit when under the direct control of a computer. (I) (A) 2. Pertaining to a user's ability to interact with a computer. (A) 3. Pertaining to a user's access to a computer via a terminal. (A) 4. Controlled by, or communicating with, a computer. 5. Contrast with offline.

operator information area. In the 3270 Information Display System, the area near the bottom of the display area where terminal or system status information is displayed. For the 3471/3472, the 25th row of data on the display surface.

P

program access (PA) key. A key that produces a call to a program that performs display operations.

protected field. 1. In word processing, preset data or an area that can't be changed or overridden by an operator without altering the program. (T) 2. On a display device, a display field in which a user can't enter, modify, or erase data. Contrast with unprotected field.

public switched network (PSN). Any switching system that provides a circuit switched to many customers. In the USA, there are four: Telex, TWX, telephone, and Broadband Exchange.

R

repeat-action key. A key that, when held fully depressed, causes an action, such as typing a character, to be repeated until the key is released, for example, a typematic key.

S

security keylock. On the 3270, a feature that allows the device to disable all input functions and that blanks the display surface, except for the cursor and displayed indicators, except when the key is inserted in the lock and turned to the ON position.

separator line. The separator line separates the operator information area from the data area of the display screen.

serial number. An integer denoting the position of an item in a series. (I) (A)

space bar. On a typewriter, a control for the space function. (T)

space character (SP). 1. A character that causes the print or display position to advance one position along the line without producing any graphic character. (T)
2. See also null character.

Note: The space character is a control character, but it may be used as a graphic character.

SNA. Systems Network Architecture.

system reference code. A code that contains information, such as a failing field-replaceable unit, for a service representative.

system services control point (SSCP). In SNA, the focal point within an SNA network for managing the configuration, coordinating network operator and problem determination requests, and providing directory support

and other session services for end users of the network. Multiple SSCPs, cooperating as peers, can divide the network into domains of control, with each SSCP having a hierarchical control relationship to the physical units and logical units within its domain.

T

typematic key. A key that repeats its function when pressed and held down.

U

unformatted display. A display screen on which the user has not defined a display field. Contrast with formatted display. See also protected field.

unprotected field. A displayed field in which a user can enter, modify, or delete data. Contrast with protected field.

W

word wrap. In word processing, the capability to move automatically the last word on a line to a new line if it otherwise would overrun the right margin. (T)

X

X.25. 1. In data communication, a recommendation of the CCITT that defines the interface between data terminal equipment and packet switching networks.

Index

A

alarm X-1
alphabetic key 4-7
alternate cursor (AltCr) key 4-10
alternate shift (Alt) key 4-3, 4-4
APL on/off key 4-24
application program X-1
attention (Attn) key 4-19
attribute character X-1
audible alarm X-1
audience ix
Austrian/German APL keyboard C-3
Austrian/German Data Entry keyboard C-2
Austrian/German IBM Enhanced keyboard C-2
Austrian/German 122-key keyboard C-2
Automatic New Line B-8
AZERTY X-1

B

back tab (←) key 4-10
Backspace (←) key 4-7
backward (Back) key 4-15
Belgian APL keyboard C-4
Belgian IBM Enhanced keyboard C-3
Belgian 122-key keyboard C-3
BSC X-1

C

Canadian-Bilingual APL keyboard C-5
Canadian-Bilingual IBM Enhanced keyboard C-4
Canadian-Bilingual 122-key keyboard C-4
Caps Lock key 4-4
carriage return B-8
cathode ray tube display (CRT display) X-1
change
 screen origin 2-17
change format 4-21
change format key 2-13, 4-21
character X-1
checking response time 2-20
Clear key 4-13
coaxial cable X-1
communication controller X-1
control unit X-1
CR B-8
cursor X-1
cursor blink (CrBnk) key 4-11
cursor control keys X-1
cursor home (↶ or Home) key 4-11

cursor select (CrSel) key 4-19

cursor (↑ ↓ ← →) key 4-11

customization A-3

D

Danish APL keyboard C-6
Danish Data Entry keyboard C-6
Danish IBM Enhanced keyboard C-5
Danish 122-key keyboard C-5
delete character (⌫ or Delete) key 4-13
delete word (⌫ or DelWd) key 2-13, 2-17, 4-21
device control unit X-2
diacritical mark keys 4-8
display X-2
display setup A-8
display station X-2
display station controls and adjustments A-1
display viewing angle 2-3
document on/off key 2-13, 2-14, 4-22
double-speed cursor (↔) key 4-12
down shift key C-1
duplicate (Dup) key 4-13
Dutch IBM Enhanced keyboard C-6

E

EBCDIC X-2
EBCDIC character X-2
ECCO (Electric Customer Communications Option) 5-34
Electric Customer Communications Option (ECCO) 5-34
Enter key 4-19
entry assist keys 2-13
erase end-of-field (ErEOF) key 4-14
erase input (ErInp) key 4-14
error code X-2
error codes 3-2
Error-correcting Backspace (←) key 4-22
extended select (ExSel) key 4-5

F

FF B-8
FF at end of print B-10
FF ignored when not in first print position B-10
FF takes position if followed by data B-10
field X-2
field mark (FldMk) key 4-14
Finnish/Swedish APL keyboard C-8
Finnish/Swedish Data Entry keyboard C-7

- Finnish/Swedish IBM Enhanced keyboard C-7
- Finnish/Swedish 122-key keyboard C-7
- form feed B-8
- formatted display X-2
- forward (Fwd) key 4-15
- French AZERTY APL keyboard C-9
- French Data Entry keyboard C-9
- French IBM Enhanced keyboard C-8
- French 122-key keyboard C-8
- function key X-2
- function (F1-F24) key 4-19

H

- highlighting X-2
- home position X-2
- host addressable print 2-5
- host addressable print options B-8
 - FF at end of print B-10
 - FF ignored when not in first print position B-10
 - FF takes position if followed by data B-10
 - suppress automatic new line when CR at maximum print position + 1 B-8
 - suppress automatic new line when FF at print end B-9
 - suppress automatic new line when NL at maximum print position + 1 B-9
 - suppress nulls B-8
- host system X-2

I

- IBM service request 5-33
- input field X-2
- insert mode (␣ or Insert) key 4-14
- interface X-2
- Italian APL keyboard C-10
- Italian Data Entry keyboard C-10
- Italian IBM Enhanced keyboard C-10
- Italian 122-key keyboard C-9

J

- Japanese Katakana APL keyboard C-11
- Japanese Katakana IBM Enhanced keyboard C-11
- Japanese Katakana 124-key keyboard C-11

K

- katakana X-2
- Katakana shift (カタ) key 4-6
- key X-2
- key click X-3
- key functions 4-1
- key in X-3
- key lock X-3
- key notice 4-1

- keyboard X-2
- keyboard layout
 - IBM Enhanced keyboard 4-1
 - 122-key Typewriter keyboard 4-1
- keyboard layouts
 - Austrian/German C-2
 - Belgian C-3
 - Canadian-Bilingual C-4
 - Danish C-5
 - Finnish/Swedish C-7
 - French C-8
 - Italian C-9
 - Japanese Katakana C-11
 - Latin American Spanish 122-key keyboard C-12
 - Norwegian C-13
 - Portuguese C-14
 - Spanish C-15
 - Swiss-French 122-key keyboard C-16
 - Swiss-German C-17
 - U.K. English C-18
 - U.S. English C-20
- keyboard overlay X-3
- keyboard slope adjustment 2-4
- keylock feature X-3
- keys
 - alphabetic 4-7
 - alternate cursor (AltCr) 4-10
 - alternate shift (Alt) 4-4
 - APL 4-24
 - attention (Attn) 4-19
 - back tab (←) 4-10
 - Backspace (←) 4-7
 - backward (Back) 4-15
 - Caps Lock 4-4
 - change format 2-13
 - change screen (ChgSc) 2-21
 - Clear 4-13
 - communication (Comm) 2-18
 - cursor blink (CrBnk) key 4-11
 - cursor home (↶ or Home) key 4-11
 - cursor select (CrSel) 4-19
 - cursor (↑ ↓ ← →) 4-11
 - delete character (⌫ or Delete) 4-13
 - delete word (⌫ or DelWd) 2-13, 2-17, 4-21
 - diacritical mark 4-8
 - dial call (Dial) 2-18
 - direct call (Direct) 2-18
 - disconnect (Disc) 2-18
 - document on/off 2-13, 2-14, 4-22
 - double-speed cursor (↔) 4-12
 - down shift C-1
 - duplicate (Dup) 4-13
 - Enter 4-19
 - entry assist 2-13
 - erase end-of-field (ErEOF) 4-14
 - erase input (ErInp) 4-14

keys (*continued*)

- Error-correcting Backspace (←) 4-22
- extended select (ExSel) 4-5
- field mark (FldMk) 4-14
- forward (Fwd) 4-15
- function (F1-F24) 4-19
- insert mode (⌘ or Insert) 4-14
- Katakana shift (カタ) 4-6
- local (Local) 2-18
- new line (↵) 4-12
- next word (→) 2-13, 2-17, 4-22
- numeric 4-9
- previous word (←) 2-13, 2-17, 4-22
- Print 4-16
- print ID (Ident) 4-16
- program access (PA1-PA3) 4-20
- punctuation mark 4-9
- Quit 4-17
- Reset 4-4
- response time monitor (RTM) 4-23
- rule (Rule) 4-15
- shift lock (⌫) 4-9
- Space 4-9
- space bar 4-9
- symbol 4-9
- system request (SysRq) 4-20
- tab (→) 4-12
- Test 4-18
- upper shift (⇧) 4-9
- word wrap on/off 2-13, 2-15, 4-22
- X.25 network 2-18

L

- Latin American Spanish APL keyboard C-12
- Latin American Spanish IBM Enhanced keyboard C-12
- Latin American Spanish 122-key keyboard C-12
- local printer 2-5
- location
 - operator information area 3-1
- logical terminal 2-21
- LT B-8
- LU-3 B-8

M

- margin X-3
- multiple sessions 2-21

N

- new line B-8
- new line (↵) key 4-12
- next word (→) key 2-13, 2-17, 4-22

- NL B-8
- non-SNA station X-3
- non-SNA terminal X-3
- Norwegian APL keyboard C-14
- Norwegian Data Entry keyboard C-13
- Norwegian IBM Enhanced keyboard C-13
- Norwegian 122-key keyboard C-13
- null X-3
- null character (NUL) X-3
- numeric data X-3
- numeric field X-3
- numeric key 4-9
- numeric keypad X-3

O

- offline X-3
- online X-3
- operations 2-1
- operator information area 3-1, X-3
- operator messages 3-1, 3-2
- organization ix

P

- panel operation rules A-2
- personalize display station
 - display viewing angle 2-3
 - keyboard slope adjustment 2-4
 - screen brightness 2-2
 - screen contrast 2-2
- personalizing display station 2-2
- play operation 2-8
- Portuguese APL keyboard C-15
- Portuguese Data Entry keyboard C-15
- Portuguese IBM Enhanced keyboard C-14
- Portuguese 122-key keyboard C-14
- powering-on 2-1
- previous word (←) key 2-13, 2-17, 4-22
- print controls B-8
- print controls and adjustments
 - host addressable print options B-8
- print ID (Ident) key 4-16
- Print key 4-16
- printer control B-7
- printer controls and adjustments B-1
- printer setup B-5
- printing screen contents 2-5
- program access (PA1-PA3) key 4-20
- program access (PA) key X-3
- protected field X-3
- public switched network (PSN) X-3
- punctuation mark key 4-9

Q

- Quit key 4-17

R

record operation 2-7
 recording and playing keystrokes 2-7
 record/play 2-7
 record/play operation
 play operation 2-8
 record operation 2-7
 sample operation 2-10
 related manuals ix
 repeat-action key X-3
 Reset key 4-4
 response time monitor 2-20
 response time monitor (RTM) key 4-23
 rule (Rule) key 4-15
































S

sample operation 2-10
 screen brightness 2-2
 screen contrast 2-2
 screen copy 2-5
 screen margin 2-14
 screen origin 2-17
 screen print 2-5
 security keylock X-4
 separator line X-4
 serial number A-5, X-4
 service request 5-33
 set
 screen margin position 2-14
 signal position 2-14
 tab position 2-14
 setup instructions 1-1
 Shift key 4-3
 shift lock (⌘) key 4-9
 signal position 2-14
 SNA X-4
 space bar 4-9, X-4
 space character (SP) X-4
 Space key 4-9
 Spanish APL keyboard C-16
 Spanish IBM Enhanced keyboard C-16
 Spanish 122-key keyboard C-15
 start operations 2-1
 subsystem printer 2-5
 suppress automatic new line when CR at maximum
 print position + 1 B-8
 suppress automatic new line when FF at print end B-9
 suppress automatic new line when NL at maximum
 print position + 1 B-9
 suppress nulls B-8
 Swiss-French APL keyboard C-17
 Swiss-French IBM Enhanced keyboard C-17
 Swiss-French 122-key keyboard C-16
 Swiss-German APL keyboard C-18
 Swiss-German IBM Enhanced keyboard C-18













Swiss-German 122-key keyboard C-17

symbol key 4-9

symbols

- f 3-17
 - fP 3-17
 3-5, 3-11, 3-12, 3-14
 #? 3-11
 3-11
 nnn 3-11
 カナ↑ 3-14
 3-11
 ALPHA 3-14
 ALPHA ↑ 3-14
 APL 3-14
 xxxxx 3-12
 599 3-12
 3-5
 C 3-5, 3-10, 3-14
 X-S 3-9
 X-f 3-9
 X nnn 3-7
 X 3-8
 X 3-8
 X 3-9
 XPROGnnn 3-8
 X 3-8
 X #? 3-9
 X 3-10
 X NUM 3-7
 X > 3-9
 X ∧+? 3-9
 X °+? 3-9
 X °+? 3-9
 X °+? 3-9
 X °+? 3-9
 X °+? 3-9
 X °+? 3-9
 XSYSTEM 3-7
 X 3-9
 X 3-7
 X? + 3-9
 X 5nn 3-8
 3-5
 DOC 3-16
 3-5
 F nn 3-18
 3-5
 I 3-5
 3-5

symbols (*continued*)

LT-n 2-21
N 3-5
□□ nn 3-15
□□ __ 3-15
□□ ?? 3-15
nn 3-17
NUM 3-14
P 3-18
P  3-18
 5nn 3-11
 xxxxx 3-12
□  nn 3-15
 < 3-17
 > 3-17
R 3-18
□  nn 3-15
R  3-18
rrr/cc 3-16
S 3-5, 3-14
T 3-5, 3-17
 mm:ss 3-13
T n 3-14
 : 3-13
 :ss.t 3-13
 :?? 3-13
TEST 3-6
▶ 3-14
2%% 3-17
3814 3-5
4700 3-5
⌘ 3-14
↓ 3-14, 3-16
? + 3-17


system reference code X-4

system request (SysRq) key 4-20

system services control point (SSCP) X-4

T

tab 2-14

tab () key 4-12

test display station (record/play options) A-11

Test key 4-18

typematic key X-4

U

unformatted display X-4

unprotected field X-4

upper shift () key 4-9

usage

Alt key 4-3

usage (*continued*)

communication (Comm) 2-18

dial call (Dial) 2-18

disconnect (Disc) 2-18

local (Local) 2-18

logical terminal 2-21

multiple sessions 2-21

Shift key 4-3

U.K. English APL keyboard C-19

U.K. English Data Entry keyboard C-19

U.K. English IBM Enhanced keyboard C-19

U.K. English 122-key keyboard C-18

U.S. English APL keyboard C-21

U.S. English IBM Enhanced keyboard C-20

U.S. English 104-key keyboard C-21

U.S. English 122-key Data Entry keyboard C-20

U.S. English 122-key keyboard C-20

W

word wrap 2-15, X-4

word wrap key 2-15

word wrap on/off key 2-13, 4-22

X

X.25 X-4

X.25 network keys 2-18

X.25 network operation 2-18

IBM InfoWindow 3472
User's Guide
GA18-2917-00

**READER'S
COMMENT
FORM**

This manual is a part of a library that serves as a reference source for systems analysts, programmers, and operators of IBM systems. This form may be used to communicate your views about this publication. They will be sent to the author's department for whatever review and action, if any, is deemed appropriate. Comments may be written in your own language; use of English is not required.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation whatever. You may, of course, continue to use the information you supply.

Note: Copies of IBM publications are not stocked at the location to which this form is addressed. Please direct any requests for copies of publications, or for assistance in using your IBM system, to your IBM representative or to the IBM branch office serving your locality.

No postage stamp is necessary if mailed in the U.S.A. (Elsewhere, an IBM office or representative will be happy to forward your comments.) If you wish a reply, give your name and mailing address.

Name:

Address:

Occupation:

Comments:

Reader's Comment Form

Cut or Fold Along Line

Fold and tape

Please Do Not Staple

Fold and tape

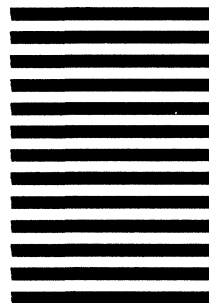


BUSINESS REPLY MAIL		
FIRST CLASS	PERMIT NO. 40	ARMONK, N.Y. U.S.A.

POSTAGE WILL BE PAID BY ADDRESSEE:

INTERNATIONAL BUSINESS MACHINES CORPORATION
DEPARTMENT 6R1J
180 KOST ROAD
MECHANICSBURG, PA 17055

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES



Fold and tape

Please Do Not Staple

Fold and tape



IBM 3472 Display Station User's Guide

Printed in U.S.A.

GA18-2917-00



Part Number
23F1821

File Number
3270-06

GA18-2917-00

