

**BFISD 5109**

# ***Basic Four<sup>®</sup> System 210 Operator's Guide***

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## Section 1 — Introduction

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### **Purpose**

The purpose of this Operator's Guide is to provide the System 210 operator with the specialized information and tools necessary for the successful operation of the Basic Four<sup>®</sup> System 210.

### **Contents**

The information in this Operator's Guide is divided into the following sections:

- Section 2, System Overview — Describes the hardware and software components.
- Section 3, Turning On/Off System — Describes turn on sequence and turn on/off procedures for VDT, CPU, MTC drive, and printer.
- Section 4, Keyboard — Describes the keyboard and functions of the keys.
- Section 5, General Maintenance — Describes general maintenance procedures for hardware components of System 210.
- Section 6, Hardware Options — Describes hardware options available with System 210.
- Section 7, Common Errors — Describes common error messages encountered by an operator and explains what to do when these errors are encountered.

### **Scope**

This Operator's Guide is directed toward the daily or frequent operator of a System 210.

This Operator's Guide explains how to use the Basic Four System 210. It is not intended to describe its internal functioning.

### **Conventions**

This subsection describes the conventions used in this manual for representing data to be entered at the terminal. In references to information to be entered at the terminal in this guide, "Press" indicates that a function or control key is to be pressed, and "Enter" indicates that something is to be typed and frequently a Control Key (Carriage Return, Control Bar, etc.) is to be pressed.

Keys to be pressed are indicated in capital letters and underlined, without any quotation marks, such as:

CTL-IV (for Control Bar IV) and

RETURN or CR (for Carriage Return)

---

---

Information to be typed in is surrounded by apostrophes, which are not themselves to be typed, as in:

'm' (for the letter m) 'YES' (for the word YES).

## **Related Publications**

The following publications contain information which may be helpful in the use of the Basic Four System 210:

- DataWord® II (1.2) Reference Manual, Publication Number BFISD 5104.
- Level 4 Utilities User's Guide, Publication Number BFISD 5084.
- Magnetic Tape Utilities Quick Reference Guide, Publication Number BFISD 5086.
- Magnetic Tape Utilities Reference Manual, Publication Number BFISD 5052.
- Serial Device Reference Manual, Publication Number BFISD 5060.
- 3040 Series Serial Printer Operator's Guide, Publication Number BFISD 5097.
- 32xx Series Character Printer Operator's Guide, Publication Number BFISD 5094.
- 325x Series Character Printer, Publication Number BFISD 5090.
- 35xx Series Line Printer Operator's Guide, Publication Number BFISD 5093.
- 651x Series Magnetic Tape Drive Operator's Guide, Publication Number BFISD 5095.
- 651x Series Magnetic Tape Cartridge Operator's Guide, Publication Number BFISD 5096.

## Section 2 — System Overview

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### Overview

This section defines the System 210 and describes the hardware and software components.

### System Definition

The System 210 is a small business system consisting of:

- Video Display Terminal (VDT)
- Fixed Disc
- Central Processing Unit (CPU)
- Magnetic Tape Cartridge Drive (MTC)
- Printer

### Hardware Components

The hardware components of the System 210 are the Video Display Terminal, the Central Processing Unit, the Magnetic Tape Cartridge Drive and the Printer.

### Video Display Terminal (VDT)

The video display terminal (VDT) is the operator's means of communicating with the System 210. The operator uses the keyboard to enter information which appears on the television-like screen. The VDT also displays information coming from the computer. The VDT is shown in Figure 2-1.

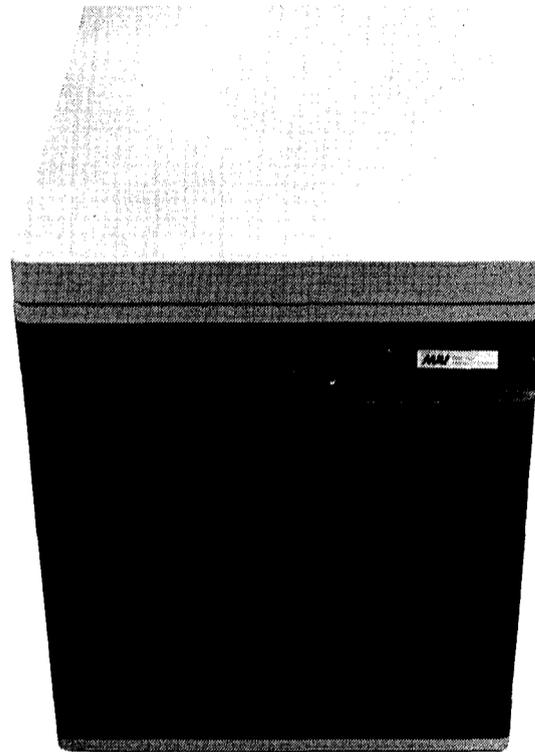


Figure 2-1. Video Display Terminal (VDT)

---

**Central Processing Unit  
(CPU)**

The Basic Four System 210 Central Processing Unit (CPU) is a compact general purpose computer. The CPU handles all computing for the entire system and is responsible for directing the information between it and each of the other components. The CPU is shown in Figure 2-2.

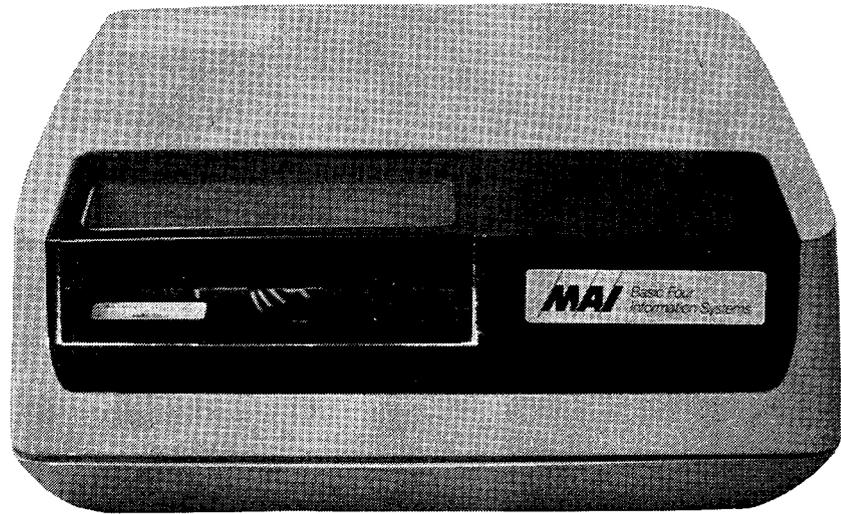


*Figure 2-2. Central Processing Unit (CPU)*

---

**Magnetic Tape Cartridge Drive (MTC)**

The Magnetic Tape Cartridge Drive (MTC) holds the tape cartridge used to back up and restore information on the disc. The magnetic tape cartridge drive unit is shown in Figure 2-3.



*Figure 2-3. Magnetic Tape Cartridge Drive (MTC)*

---

**Printer**

The printer produces hard copy output, such as invoices, statements, checks, and reports or a record of data processing activities. The printer configured with the System 210 may be a 325X Series Character Printer or a 32XX Series Character Printer. For information on operation and maintenance, refer to the appropriate documentation in "Related Publications", Section 1.

**Software Components**

System 210 software components include BOSS and utility programs.

**BOSS**

BOSS is the Basic four Operating System Software. BOSS monitors and controls activities of the computer.

**Utility Programs**

Utility programs are special tools designed to accomplish specific operations on the System 210. For a description of utility programs, refer to the appropriate documentation. (See "Related Publications", Section 1.)

## Section 3 — Turning On System

---

### Overview

This section describes the Turn On sequence, explains how to turn on the hardware components, explains how to turn them off, and provides a list of Do's and Don't's applicable to the System 210.

### Turn On Sequence

Turn on the components of the System 210 in the following order:

- Step 1: VDT
- Step 2: CPU
- Step 3: Magnetic tape cartridge drive
- Step 4: Printer

### Turn On

To turn on the various hardware components of the System 210 in the order just described, the operator should follow the instructions given in the following paragraphs.

### Video Display Terminal (VDT)

Turn the ON-OFF switch on the front of the VDT to the ON position. Within a few seconds the VDT emits a "beep" and a small white rectangle (called the cursor) appears in the upper left corner of the screen. The cursor indicates where the next character will appear on the screen.



*Figure 3-1. VDT Front Controls*

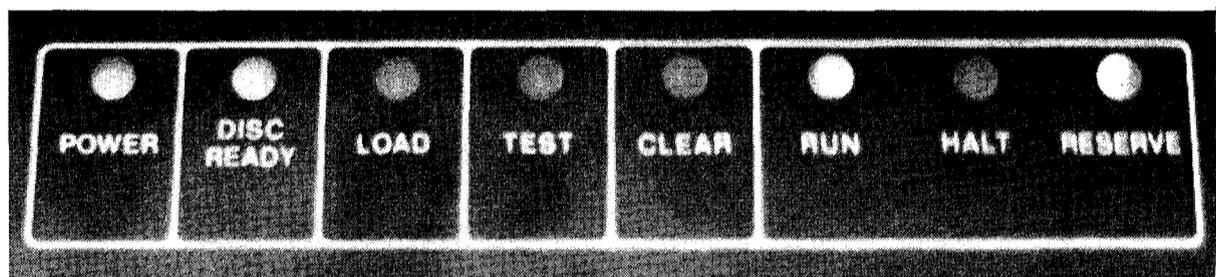
---

The brightness of the screen is controlled by a knob to the left of the ON-OFF switch. If the cursor is not visible and the entire screen is blank, adjust the brightness control by turning the brightness knob. The knob should be turned clockwise to increase screen brightness, and counterclockwise to decrease screen brightness. If a series of lines appear on the screen, the brightness knob has been turned too far clockwise, and needs to be turned back in a counterclockwise direction.

If the cursor still does not appear after these adjustments, turn off the VDT and call a Customer Service Representative.

### Central Processing Unit (CPU)

On the CPU, the front control panel contains a number of switches and status lights.



*Figure 3-2. CPU control panel*

---

### Reserve Indicator

Make sure the yellow light is on above the RESERVE indicator.

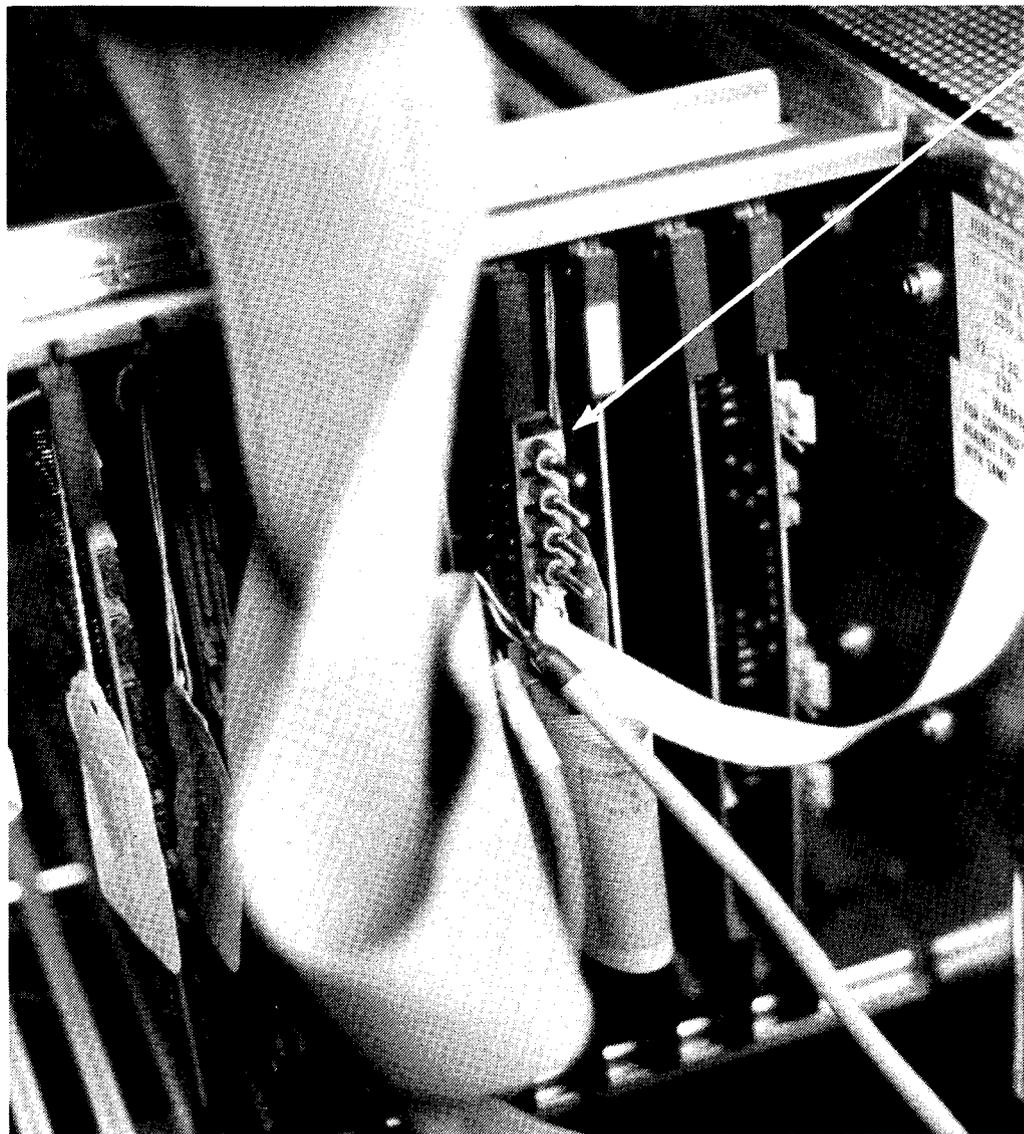
If the RESERVE light is not on, make sure the computer is plugged into an electrical outlet which is providing power. If there still is no power, call the Customer Service Representative.

### Turning on the CPU

To turn on the CPU, press the switch marked 'POWER'. A green light appears over "POWER" and over 'DISC READY' when the drive is ready.

### Sense Switches

Located on the CPU set are 4 sense switches. Each sense switch can be turned to either a right setting or to a left setting. To load from tape, turn all sense switches to the left settings. To load from disc, turn all sense switches to the right settings. These switches are shown in Figure 3-3:



*Figure 3-3. Sense switches*

---

## Loading the Operating System

Press the 'LOAD' switch for one second to load the BOSS operating system from disc to memory. A green light appears over 'RUN', and the VDT beeps.

If a red light appears over 'HALT' instead of a green light over 'RUN', press the 'LOAD' switch again and repeat the instructions given above. If the green light fails to appear over 'RUN', call the Customer Service Representative.

After the beep, a proprietary message, as shown in Figure 3-4, appears on the screen:

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EX4.2-A 81550

*Figure 3-4. Proprietary Message*

The CPU is now ready for use.

---

### CAUTION

1. *If the load procedure from disc is not successful after several attempts, call the Customer Service Representative.*
2. *The CPU cabinet must not be moved by anyone except qualified service personnel. Mishandling could seriously damage the unit.*

### CPU Controls

The 'POWER' switch turns power to the CPU on and off.

The 'DISC READY' display light indicates that the disc is ready.

The 'LOAD' switch causes the computer to load the operating system.

The 'TEST' switch is used to load the alternate operating system for backup. It is also used to load system diagnostics.

The 'CLEAR' switch should be used **only** by Customer Service Representatives. It is used for testing the system.

When the green light appears over 'RUN', the computer is ready to be used.

When the red light appears over 'HALT', the CPU has stopped.

### Default

The Systems Manager, software vendor, software programmer, or analyst may have already set the defaults on the System 210 for the user. If the defaults have **not** been set, the user should follow the instructions given in the subsection called "Defaults Not Set". It is possible to use system utilities to begin running the application program immediately; this procedure is described in the Level 4 Utilities Guide, BFISD 5084 (see Section 1).

### Defaults Not Set

On the first startup of a brand new system, various parameters must be defined. The default values for these parameters can be set so that the operator does not need to set them during every startup. Generally, the software vendor or analyst sets these default values according to the needs of the users of the System 210.

If these values have not been set, the startup sequence is as explained in this section.

---

Setting the date and time

The first parameters to be defined are date and time. After the Proprietary Message is displayed, the information shown in Figure 3-5 is displayed on the screen:

L2097.01	Basic Four SYSTEM STARTUP	12:00 AM
<hr/>		
ENTER NEW DATE: MMDDYY		

*Figure 3-5. Enter new date*

The month, day, and year each require two bytes of input.

Enter the correct date and press **RETURN**. The information shown in Figure 3-6 is displayed on the screen:

CURRENT SYSTEM TIME IS: 12:00 AM ENTER NEW TIME (CR = UNCHANGED): HHMM
---

*Figure 3-6. Enter new time.*

Enter the correct time and press **RETURN**. If a time and 'A' or 'P' are entered, then the information shown in Figure 3-8 is displayed on the screen. ('A' or 'P' requires two bytes.) If only a time is entered, the information shown in Figure 3-7 is displayed on the screen:

AM OR PM? : __M
-----------------

*Figure 3-7. AM or PM?*

Enter 'A' or 'P' and press **RETURN**.

---

Building a gap file

The second parameter is building a gap file. A "gap file" contains information about the amount of available disc space. The gap file is utility-based only and increases the performance of the utility set only.

The information shown in Figure 3-8 is displayed on the screen:

```
BUILD NEW GAP FILE FOR DISC 0? (Y/CR):
```

*Figure 3-8. Build new gap file*

Enter 'Y' and press **RETURN** —or— press **RETURN** without any entry for a "NO" response.

If **RETURN** is pressed without an entry, the information shown in Figure 3-10 is displayed on the screen.

If 'Y' is entered and **RETURN** is pressed, the information shown in Figure 3-9 is briefly displayed on the screen:

```
BUILDING NEW GAP FILE FOR DISC 0
```

*Figure 3-9. Building new gap file*

Spooling

"Spooling" is the orderly arrangement of output into queues to await printing, allowing more efficient use of the system printers.

Then the information shown in Figure 3-10 is displayed on the screen:

```
DO YOU WANT SPOOLING? (Y/CR):
```

*Figure 3-10. Spooling*

For complete information on spooling and how to proceed, refer to Level 4 Utilities User's Guide, BFISD 5084.

---

## Magnetic Tape Cartridge Drive

To turn on the tape cartridge drive, turn up the 'POWER' switch at the back of the unit, as shown in Figure 3-11. A light comes on in the cartridge loading area, and the fan motor starts.



Figure 3-11. Tape cartridge drive power switch

If the unit fan or light fails to come on, make sure the unit is plugged in. If there is still no response, call the Customer Service Representative.

## Insert Cartridges

To insert the cartridge, place the tape cartridge in the front opening of the drive unit, with the clear plastic side up. The edge with the small hinged plastic door should be pointing toward the rear of the drive unit. Slide the cartridge into the drive unit until a firm stopping point is felt.

## Removing Cartridges

Wait until the rewind procedure is completed, before removing the cartridge. As the operator begins to pull the tape cartridge from the front of the unit, a release lever is actuated and the cartridge is automatically ejected.

When the tape cartridge is not in use, the operator should protect it against dust by storing it in the plastic dust-proof container or special cardboard container that comes with the cartridge.

---

**Printer**

For complete information about operation of a printer, refer to the appropriate documentation in "Related Publications", Section 1.

**Summary of Turn-On**

The steps to be followed by the operator in order to turn on the system are summarized in the following paragraphs.

**VDT**

- Turn on the VDT.
- Press 'ON-OFF' switch to 'ON'. The VDT speaker beeps.
- The cursor appears on the screen.

**CPU**

- Turn on the CPU.
- Make sure the yellow 'RESERVE' light is on.
- Press 'POWER' switch. Green lights come on over 'POWER', 'RUN', and 'DISC READY'.
- Press the 'LOAD' switch. The VDT speaker beeps. A message appears on the VDT screen. Another beep sounds, then a second message appears on the screen. The 'START' and 'READY' messages appear.

**Magnetic Tape Cartridge Drive**

- Turn on the Magnetic Tape Cartridge Drive Unit.
- Turn the 'ON-OFF' switch to 'ON' position. A light comes on in the cartridge loading area. The unit fan comes on.

**Printer**

(See "Related Publications", Section 1.)

**Turn Off**

The steps to be followed by the operator in order to turn off the system are summarized in the following paragraphs.

**VDT**

- Turn the 'ON-OFF' switch to 'OFF'.
  - The VDT speaker beeps and the image disappears from the screen.
-

---

**CPU**

- Press the 'POWER' switch.
- All lights go off except the yellow 'RESERVE' light. The fan in the unit goes off.

**Magnetic Tape Cartridge Drive**

- Remove the tape cartridge if it is still in the unit. Failure to do so can result in erasure of information on the tape.
- Turn the 'POWER' switch to the 'DOWN' position for 'OFF'. The light goes out and the fan goes off.

**Printer**

(See "Related Publications", Section 1.)

**Do's and Don't's**

The following Do's and Don't's apply to the hardware components of the System 210:

**VDT**

- DO turn the power on before trying to use the terminal.
- DO make sure the plug is plugged into the wall outlet.
- DO clean the VDT screen with glass cleaner and a soft cloth.
- DON'T drink beverages or eat over the keyboard.
- DON'T hit the VDT screen.
- DON'T lean on the terminal keys.
- DON'T use rough materials to clean the screen.

**CPU**

- DO make sure the CPU is plugged in.
  - DO make sure the yellow 'RESERVE' light is on.
  - DON'T leave any beverages on the CPU.
  - DON'T move the CPU while it is running.
  - DON'T remove or open CPU panels or cabinets.
-

---

**MTC Drive**

- DO make sure the MTC drive is plugged into the wall outlet.
- DO keep tape cartridges in a clean, dry area at moderate temperatures.
- DON'T store cartridges near heat.
- DON'T use magnets at or around the system.
- DON'T blow smoke at the tape cartridge.
- DON'T drop the tape cartridge.
- DON'T spill any liquids on the tape cartridge.
- DON'T play with the small hinged door at the back of the cartridge.

**Printer**

- DO make sure the printer is plugged in, using a 3-wire grounded unit.
- DO make sure enough paper is available when printing starts.
- DO make sure the front of the paper faces the operator when loading.
- DO make sure all covers are closed and secured during operation.
- DON'T operate without paper.
- DON'T exceed paper thickness of more than 5 sheets. Total thickness must not exceed 0.040 inch.
- DON'T spill any beverages on the 'ON-OFF' switches.
- DON'T change ribbon with the power 'ON'.
- DON'T let ties, necklaces, long hair, loose clothing, etc. dangle near the printer mechanism.



## Section 4 — VDT Keyboard

### Overview

The VDT keyboard is what the operator uses to communicate with the computer. The System 210 keyboard has two sections: the typewriter keyboard and the numeric keypad, as shown in Figure 4-1.

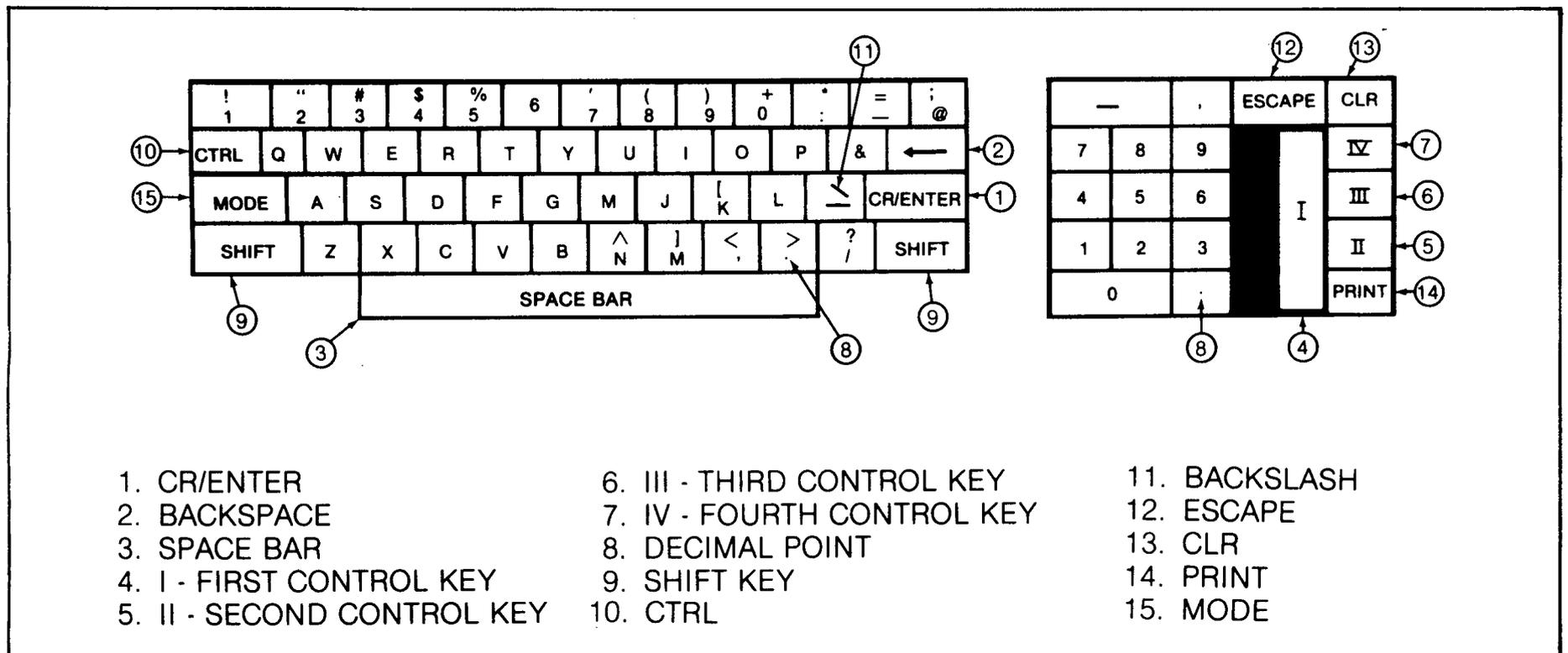


Figure 4-1. VDT keyboard

### Keyboard

The keys on the VDT keyboard operate as do the keys on a standard office typewriter, with a few exceptions. All the letter keys produce capital letters (upper case), and the number keys produce numbers. The number keys on the typewriter keyboard can be used interchangeably with the numbers on the numeric keypad.

In addition to the letter and number keys, the VDT keyboard contains certain keys which control the information that is input and displayed on the screen. Some of these control keys are used frequently, and some are used infrequently.

### CR/Enter

This is the Carriage Return/Enter key. Pressing this key tells the computer to act upon the data just typed (entered). The operator should remember to press the CR/Enter key after entering information on the keyboard if required. This depends on the application program.

The CR/Enter key is also used to move the cursor down to the beginning of the next line (field) before beginning to enter information or continuing to enter information.

---

<b>Backspace</b>	The operator should use the Backspace key to move the cursor to the left on a line or to correct a typing error. Each time the cursor is moved to the left, any character replaced by the cursor is deleted and must be retyped.
<b>Space Bar</b>	The operator should use the Space Bar to move the cursor to the right, one space at a time. As on a standard typewriter, it is used to position letters properly on a line.
<b>Control Keys on Numeric Keypad</b>	<p>Four keys on the numeric keypad are called "Control" keys. These are 'I-First Control Bar', 'II-Second Control Bar', 'III-Third Control Bar', and 'IV-Fourth Control Bar'.</p> <p>These are controlled by the application software. The operator should receive instructions (usually displayed on the VDT screen) from the program which explain which keys to press.</p>
<b>Decimal Point Key</b>	The Decimal Point key is found on both the typewriter and numeric keyboards. On both it functions as a period to end sentences and as a decimal point, as in dollars and cents (e.g., \$4.15).
<b>Shift Key</b>	The Shift key is used in conjunction with the letter and number keys to print special characters that appear above certain letters and numbers. For example, both the dollar sign (\$) and the number 4 appear on one key. To type '\$', press the Shift key and hold it down, then press the 4/\$ key.
<b>CTRL</b>	The CTRL or Control key causes an unprintable character to be created when the operator holds <b>CTRL</b> down and presses any other typing key. Nothing is printed on the screen. The Customer Service Representative may ask the operator to use this key.
<b>Backslash</b>	The Backslash key causes the Backslash symbol ('\') to be displayed on the screen.
<b>Escape</b>	The operator should not use the Escape key on the System 210 unless a qualified programmer is present.
<b>CLR</b>	The CLR or Clear key clears the VDT screen. Whatever is on the screen disappears, and the cursor returns to the upper left corner of the screen.
<b>Print</b>	The Print key may be used to print output, but only when a printer is attached. If no printer is attached, it is placed in a suspended state.
<b>Mode</b>	The position of the Mode key determines whether letters print in the upper or lower case. With the Mode key up, upper case letters are displayed.

---

## Section 5 — General Maintenance

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### **Overview**

Instructions are provided in this section for maintenance of the System 210. For information on how to care for magnetic tape cartridge drive units or specific printer models configured with System 210, the operator should consult the applicable publication listed in "Related Publications" in Section 1.

### **Cleaning**

Instructions for cleaning various components are provided in the following paragraphs.

### **VDT and CPU**

Maintaining the VDT is comparable to maintaining an office electric typewriter. The operator should keep the VDT clean, keep its connectors plugged in, and keep its immediate area cleared of food, beverages, stacked paper, books, or any other items which might interfere with free circulation of air.

The operator should wipe or brush off dust, lint, and smudges whenever they become noticeable. Care should be taken not to wipe or brush dust into the keyboard through the spaces between and around the keys. A clean, soft dust cloth or commercial lint-free tissue should be used for wiping.

### **Magnetic Tape Cartridge Drive**

For instructions on how to clean the magnetic tape cartridge drive, the operator should refer to the applicable publication from the list provided in "Related Publications" in Section 1.

### **Printer**

For instructions on how to clean the printer, the operator should refer to the applicable publication from the list provided in "Related Publications" in Section 1.

### **Handling Printer Paper**

For instructions on how to handle the printer paper, the operator should refer to the applicable publication from the list provided in "Related Publications" in Section 1.

### **Replacing Printer Ribbon**

For instructions on how to replace the printer ribbon, the operator should refer to the applicable publication from the list provided in "Related Publications" in Section 1.



## Section 6 — Hardware Options

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### Overview

This section describes the hardware options available on the System 210. These options include:

- 160 CPS Printer
- 150/300 LPM Printer
- Magnetic Tape Drive, Reel-to-reel
- DataWord<sup>®</sup> II

### 160 CPS Printer

Operation of the 160 CPS printer is the same as for the 120 CPS printer which is standard with the System 210.

### 150/300 LPM Printer

These line printers produce output at a rate of 150 or 300 lines-per-minute. In addition, they have the ability to plot graphs. They are free-standing and have an enclosure to reduce noise. The 150/300 LPM printers use forms which are up to 16 inches wide. Features include heat-sensitive switches including a switch for selecting either six or eight lines-per-inch. The printers are available with a standard 96-character (upper and lower case type) font, produced by a 9 x 7 dot matrix. A paper stacker is included for ease of gathering processed documentation. A forms length selector switch is optional.

### Magnetic Tape Drive, Reel-to-Reel

The magnetic tape drive provides a means of storing large volumes of data.

### DataWord<sup>®</sup> II

The DataWord<sup>®</sup> II Information Processing System is supported on the System 210. See "Related Publications" in Section 1 for the references describing DataWord<sup>®</sup> II.



## Section 7 — Common Errors

### Overview

During System 210 operation, the operator sometimes encounters error conditions. This section lists the most common of these error conditions, along with explanations of what the errors mean and what to do when they are encountered.

ERROR	What It Means	What To Do
ERROR 0	Operator has attempted to access a file or device which is in restricted use by another operator.	Either wait your turn or arrange for other operator to stop accessing the file or device.
ERROR 1	Number of characters input or output exceeds number previously defined for the particular record.	Call Software Vendor.
ERROR 2	Operator has attempted to write a record to a file which has already been filled with previously-written records.	Call Software Vendor.
ERROR 3	Either disc damage or drive problems.	Call hardware service personnel.
ERROR 4	Operator has attempted to access a disc drive which is not in the 'READY' state.	Call Supervisor.
ERROR 5	Transmission problems between devices in use.	Wait several minutes and processing may resume. Frequent reoccurrence of ERROR 5 indicates a hardware problem. If printing is in progress, make sure there is paper in the printer.
ERROR 7	Faulty pointers exist between the direct file keys and the associated data record.	Call Software Vendor.

<b>ERROR</b>	<b>What It Means</b>	<b>What To Do</b>
ERROR 11	An attempt has been made to read a direct file using a key not associated with any record previously written to the file.	Call Software Vendor.
ERROR 12	ERROR 12 generally indicates reference to an undefined or unavailable file or program.	Enable the disc. If the error condition continues, call the Software Vendor.
ERROR 14	ERROR 14 occurs when a device or file is not available for the operation being attempted.	Call Supervisor.
ERROR 20	A typing error has been made during modification of a program in Console Mode.	Call Supervisor.
ERROR 26	Alphabetic data input when numeric data was expected.	Call Supervisor.
ERROR 31	Program execution has filled all space associated with the user.	Call Software Vendor.
ERROR 41	ERROR 41 generally involves a negative or fractional value computed within a program and used to reference a position or subscript.	Call Supervisor.
ERROR 43	ERROR 43 occurs after an attempt to "mask" an operation (usually printing) on a numeric variable with a mask of insufficient size for the magnitude of the variable.	Call Software Vendor.
ERROR 46	ERROR 46 indicates the specification of a key of length greater than that defined when the file was defined.	Call Software Vendor.

<b>ERROR</b>	<b>What It Means</b>	<b>What To Do</b>
ERROR 47	ERROR 47 indicates a reference to a substring which is not within the range of the string.	Call Software Vendor.
ERROR 48	Input verification error.	Call Software Vendor.
ERROR 103	A file (Direct or Sort) or directory has invalid key pointers due to a critical write operation which could not be completed due to a disc error.	Call Supervisor.
ERROR 104	An ERROR 104 occurs when an attempt is made to: <ol style="list-style-type: none"> <li>1. WRITE to a file when the 'READ ONLY' switch on the disc drive is on.</li> <li>2. WRITE to a disc when there is a hardware malfunction.</li> </ol>	Call Supervisor.
ERROR 108	See Reference Manual for Business BASIC, Levels 3 and 4, BFISD 5085.	Call Supervisor.
ERROR 123	ERROR 123 occurs due to a parity error after a task begins updating a Direct, Sort, or Serial file (or the directory) before all WRITES are completed.	Call Supervisor.
ERROR 124	ERROR 124 results if a parity error occurs before a task begins updating a file (or directory), or after the WRITES to the file (or directory) have been completed.	Call Supervisor.

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**ERROR****What It Means****What To Do**

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ERROR 126

See Reference Manual for Business BASIC, Levels 3 and 4, BFISD 5085.

Call Supervisor.

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ERROR 127

See Reference Manual for Business BASIC, Levels 3 and 4, BFISD 5085.

Call Supervisor.

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