THE MITS 300 COMPUTER SYSTEM

OPERATOR'S GUIDE

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NOTICE

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TABLE OF CONTENTS

CHANGE RECORD

Revision	Date	Pages
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SECTION 1

INTRODUCTION

1 INTRODUCTION

1-1 WHAT IS THE MITS 300 COMPUTER SYSTEM?

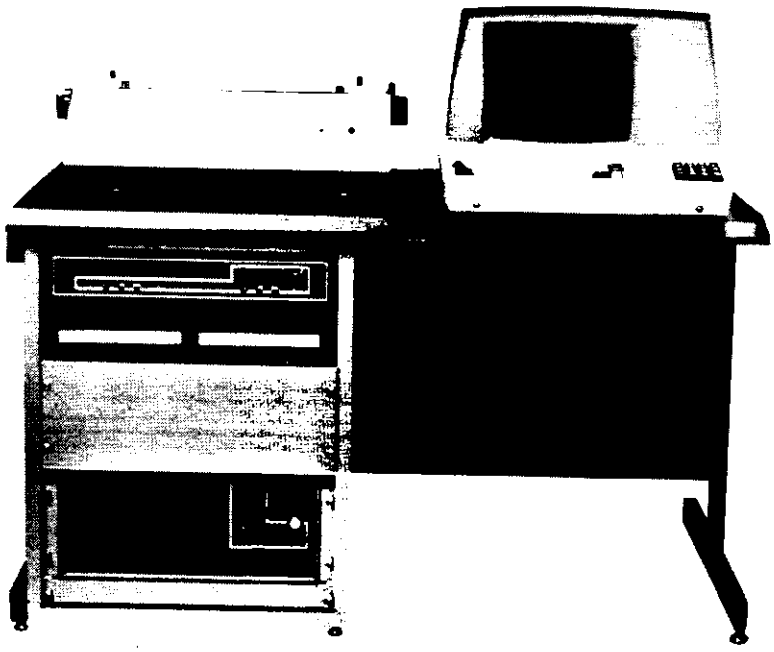
The MITS 300 Computer System is a small dedicated business computer system. It consists of a field-proven computer, video display terminal, disk memory system with software packages, and optional printer.

The MITS 300 Computer System, as shown on the facing page, consists of: a computer, a disk memory system, a display terminal and an optional printer. There are two different configurations, depending on the disk memory system used. The 300/25 configuration includes a Dual Floppy Disk. The 300/55 configuration uses a Hard Disk. Either configuration also includes a desk that holds the computer and disk memory. Either a daisy-wheel text printer or a bidirectional matrix printer can be added for use with either configuration. The MITS 300 Computer System uses 110 Vac, 60 Hz or 220 Vac, 50 Hz power.

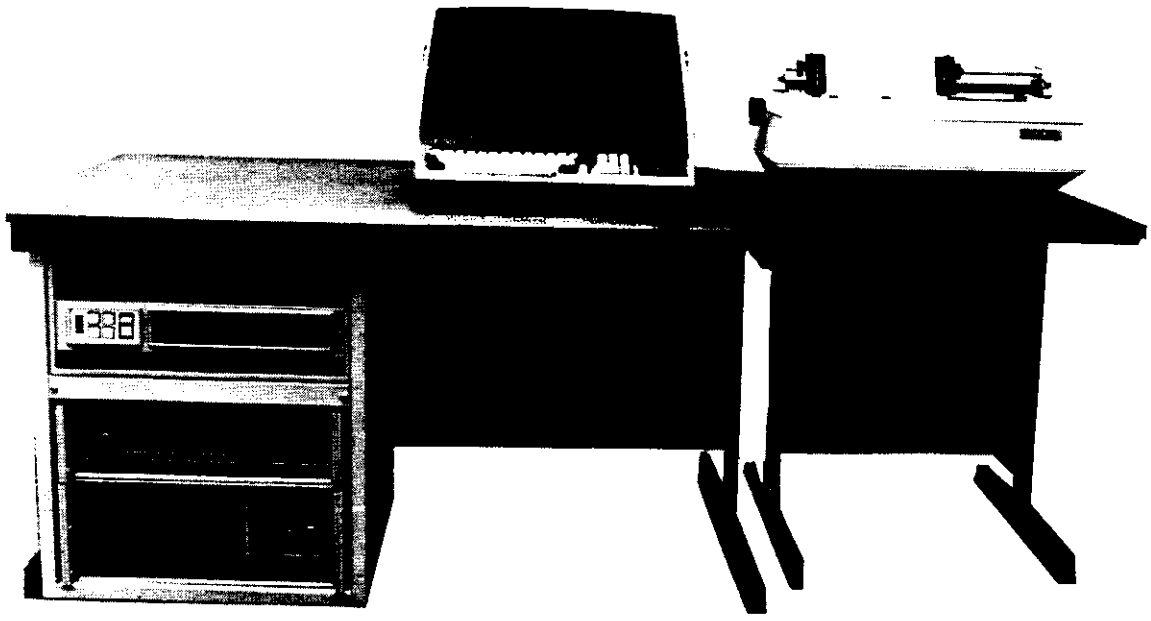
The heart of the MITS 300 Computer System is the computer, which interfaces with all peripherals. The computer's modular architecture makes it ideal for small business uses. Its flexibility permits hardware and software capabilities to grow along with processing requirements. This potential, along with the high-performance and dependability of the system, is possible through the use of a high-speed microprocessor.

The software packages supplied with the MITS 300 are the most extensive applications software available for the small business systems market. Individualized modules for general ledger, accounts receivable, accounts payable, and payroll comprise the Accounting System. Other software packages include a flexible Word Processor and a powerful Data Base Management System for inventory control.

This guide will teach you what you need to know about the MITS 300 Computer System: how to operate the system, how to start the computer, how to change ribbon or paper, how to load diskettes or cartridges, and how to tell if something is wrong. We suggest that you take a few minutes of your time to read and familiarize yourself with this guide.



MITS 300/25 (with Text Printer option)



MITS 300/55 (with Text Printer and Printer Desk options)

SECTION 2

DESCRIPTION

2 DESCRIPTION

2-1 GENERAL DESCRIPTION

This section gives a general description of the MITS 300 Computer System.

The block diagram on the facing page represents a typical MITS 300 Computer System. As shown, the basic system consists of:

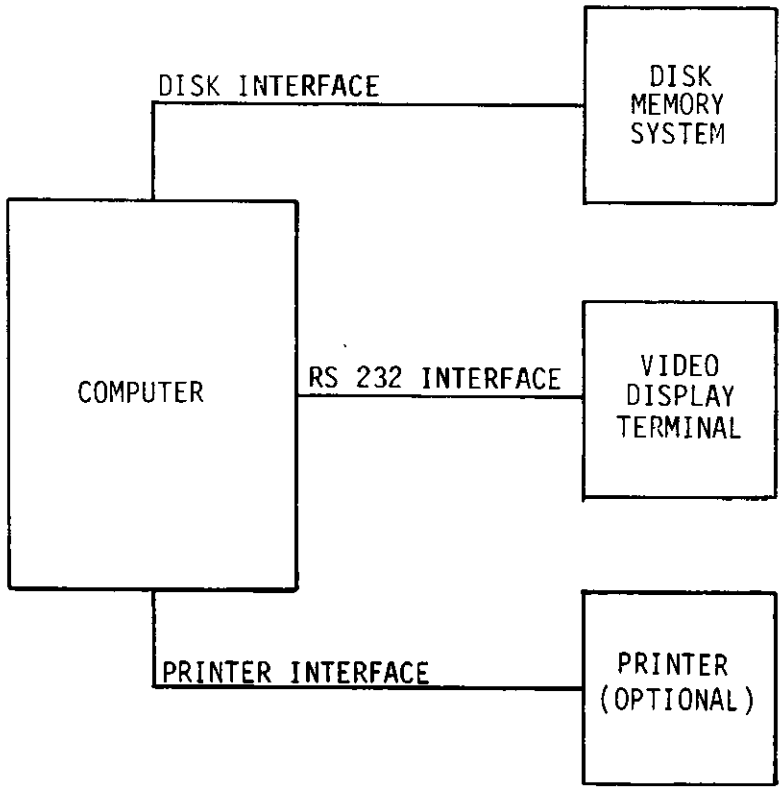
- The Computer
- A Disk System (dual floppy disk or hard disk)
- The Video Display Terminal
- (Optional) A Matrix Printer or a Text Printer

The Disk System is used for data storage.

The Video Display Terminal interfaces the MITS 300 System with the user.

The optional printer is used to print hard copy data output.

The computer interfaces with the above peripherals, and controls and processes all data and instructions.



THE MITS 300 COMPUTER SYSTEM
BLOCK DIAGRAM

2 DESCRIPTION

2-2 COMPUTER FRONT PANEL

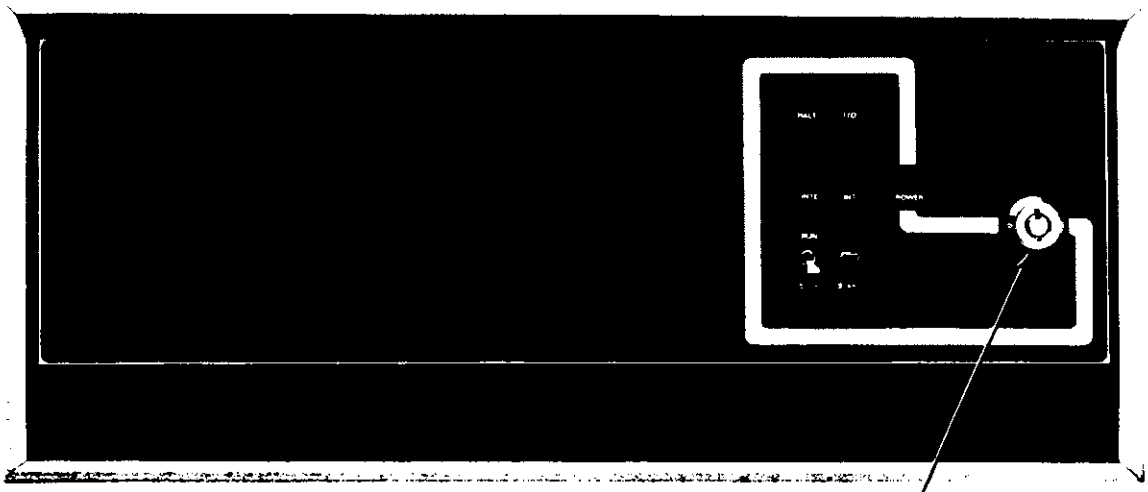
The front panel contains the functional switches and status indicators for controlling and monitoring the computer.

The function of each switch/indicator is:

CONTROL/INDICATOR	FUNCTION
Power Switch	Turns power on at 1/4 turn and disables other Front Panel switches at 1/2 turn position. Key-lock type switch. (See NOTE below.)
POWER Indicator	Indicates that power is on.
RUN/STOP Switch	Causes the computer to run the program in memory when placed in the RUN position. Execution stops when the switch is moved to the STOP position. Moving the switch back to RUN continues execution at the point where it was stopped.
START Switch	Resets computer and starts program.
HALT Indicator	Indicates that the computer has stopped processing as a result of encountering a HALT instruction.
I/O Indicator	Indicates that information is being transferred between the computer and an Input/Output device.
INT Indicator	Indicates that the computer is processing an interrupt.
INTE Indicator	Indicates that the computer's interrupt-handling circuits are enabled.

NOTE

All system components are plugged into the system power strip, located inside the bottom rear of the desk, and master system power is controlled by the Master Circuit Breaker, located on the lower back panel of the desk.


Power Switch

2-3 DUAL FLOPPY DISK MEMORY SYSTEM FRONT PANEL

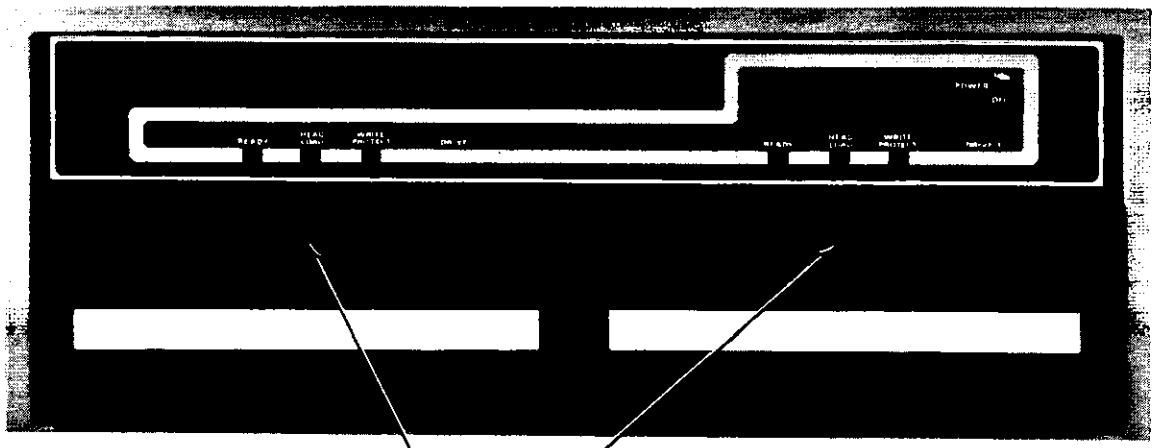
The front panel contains the functional switches and status indicators for controlling and monitoring the dual floppy disk memory system.

The function of each switch/indicator is:

SWITCH/INDICATOR	FUNCTION
POWER ON/OFF Switch	Turns power on or off. (See NOTE below.)
READY Indicator	Indicates that the drive is turning at the proper speed after the drive door is closed. Will remain lit if the door is opened if power stays on in the drive units.
HEAD LOAD Indicator	Indicates that the head is in contact with the diskette (read or write).
WRITE PROTECT Indicator	Indicates that the Write Protect Slot on the diskette jacket is uncovered. Data can be read from the diskette, but data cannot be written or changed.
Drive Door Indicator	Indicates that the disk drive is enabled for transfer of data (read or write), that this particular drive has been addressed for transfer of data, that the drive door is closed, and that the drive is turning at the proper speed.

NOTE

All system components are plugged into the system power strip, located inside the bottom rear of the desk, and master system power is controlled by the Master Circuit Breaker, located on the lower back panel of the desk.



Drive Door Indicator

2-4 HARD DISK MEMORY SYSTEM FRONT PANEL

The front panel contains operational controls and indicators for controlling and monitoring the hard disk memory system.

The hard disk drive controls and indicators are shown on the facing page and are described in the following table.

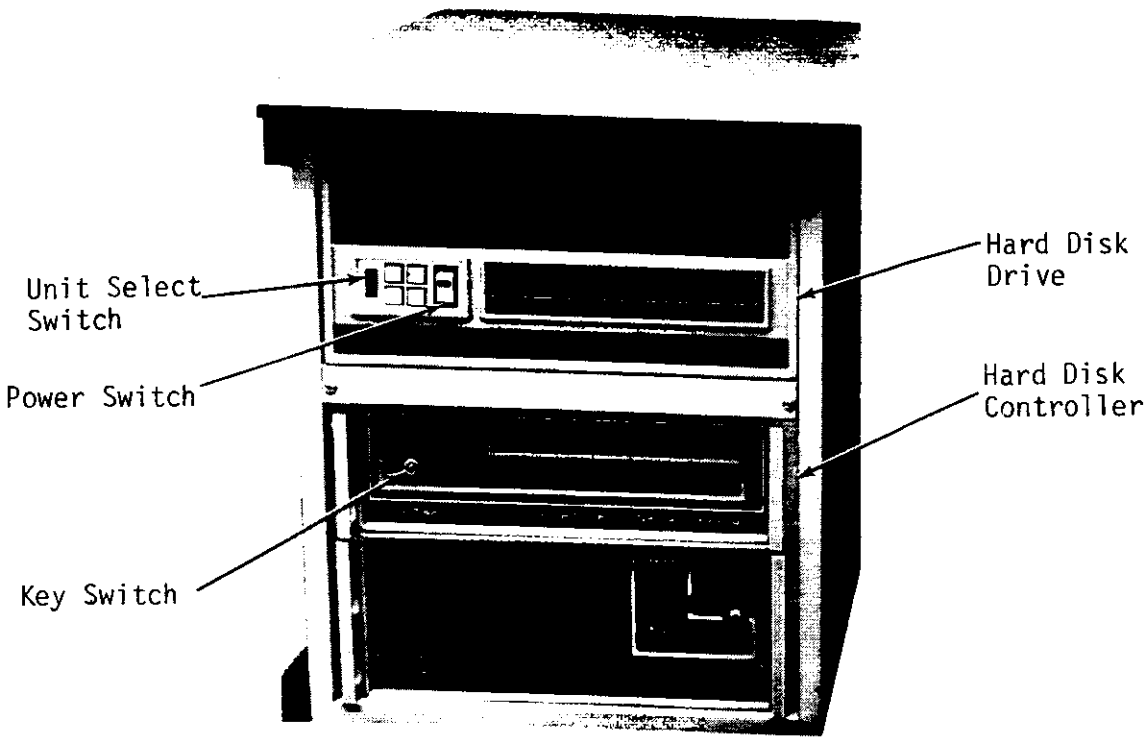
CONTROL/INDICATOR	FUNCTION
Power Switch	Rocker switch, turns power on or off. See NOTE below.
RUN/STOP Switch Indicator	RUN: Selects the operational status of drive. The indicator lights when the disk is turning. STOP: Stops the disk.
READY Indicator	Indicates disk drive is ready for read or write operation.
SAFE Indicator	Indicates it is possible to safely insert or remove the disk cartridge.
PROT/PROT Indicator	When the upper PROT indicator is illuminated, the upper disk is protected from a write operation; protection of lower disk is indicated by illumination of the lower PROT indicator. (Protect switches are located on drive top, left side, halfway towards rear of unit.) Both indicators go off during WRITE mode and respective switches are set to 'OFF' position to permit write operation.
Unit Select Switch	Specifies physical address of the hard disk system. Set to "1" for systems with a single two-or four-platter hard disk system.

NOTE

All system components are plugged into the system power strip, located inside the bottom rear of the desk, and master system power is controlled by the Master Circuit Breaker, located on the lower back panel of the desk.

The Hard Disk Controller controls and indicators are shown in the picture below and are described in the following table.

CONTROL/INDICATOR	FUNCTION
Key Switch	Turns power on (see previous NOTE) and resets computer at 1/4 turn to CPU RESET. Further 1/4 turn to RUN allows controller and hard disk to operate.
AC POWER Indicator	Indicates AC Power ON.
DC POWER Indicator	Indicates DC Power ON.



2-5 VIDEO DISPLAY TERMINAL KEYBOARD

The keyboard contains alphabetic and numeric keys, as well as special function keys.

The keyboard of the video display terminal is shown on the facing page. The special function keys are described in the table below.

SPECIAL KEY	FUNCTION
SHIFT-key	Enables upper-case alphabetic and numeric characters and special keyboard characters to enter.
CONTROL-key	Pressed with any alphabetic key generates a Control Code, which is defined by the particular program being run.
ESC-key	Ends entry or withdrawal of data into or from the memory.
LINE FEED-key	Moves cursor down one line. (See note below.)
RETURN-key	Returns cursor to the left side of the screen.
DEL-key	Erases unwanted data entered or to be corrected.
↑ ↓ → ← keys	Moves cursor in direction of arrow.
ALPHA LOCK Key/Indicator	When pressed all alphabetic characters will be capitals. Numeric and special keyboard functions are not affected. Indicator lights when ALPHA LOCK feature is in use. Normally set to Alpha Lock position.
EOL-key	Clears data from cursor position to the end of the line.
EOS-key	Clears data from cursor position to the end of the screen.
CLEAR HOME-key	Moves cursor to the Home (top left corner) position.

NOTE

The cursor is a  shaped spot on the video screen, indicating a position where data can be entered or corrected.

2-6 VIDEO DISPLAY TERMINAL REAR PANEL

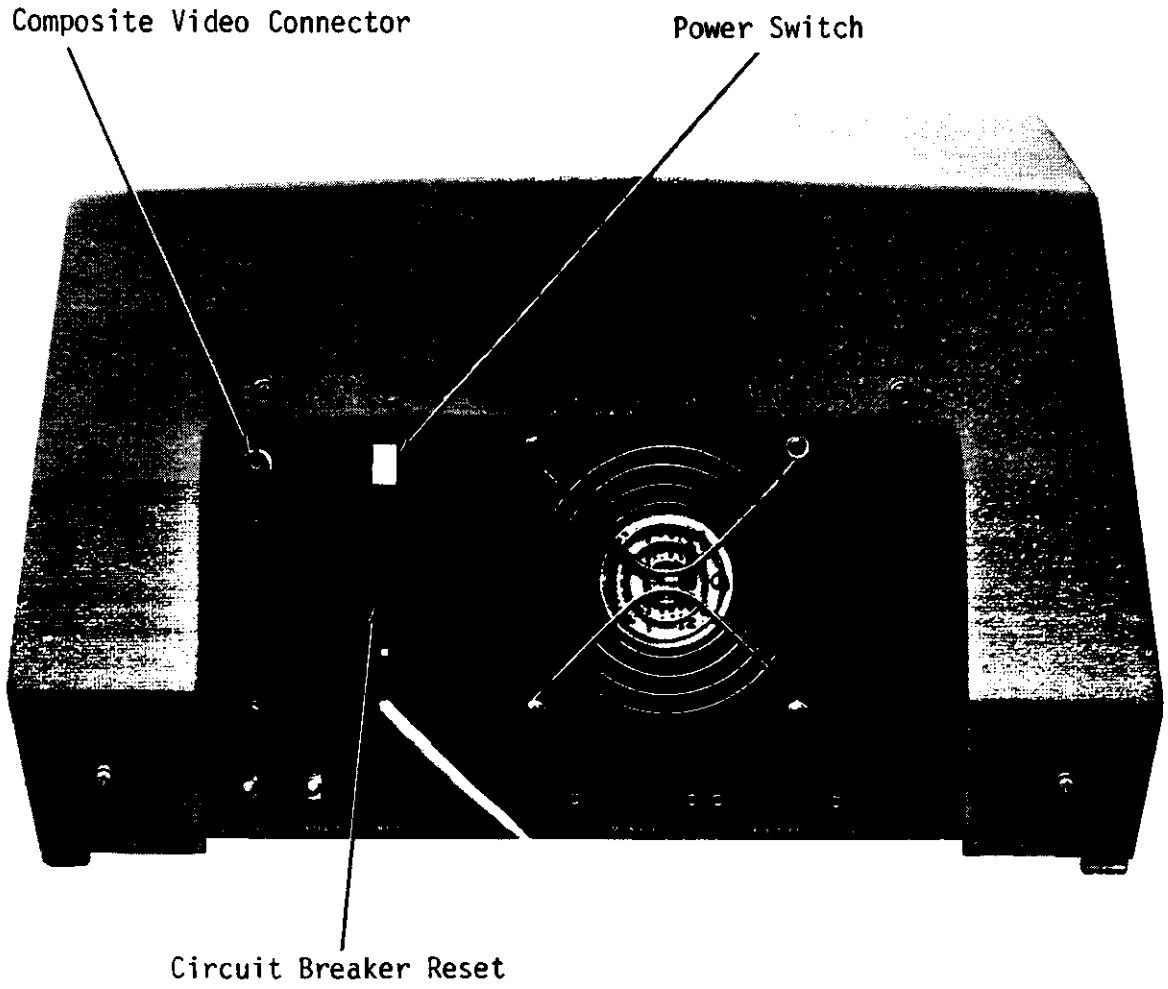
The rear panel contains functional switches for controlling the video display terminal.

The function of each switch is:

CONTROL	FUNCTION
Power Switch	Turns power on or off. (See NOTE below.)
BRIGHTNESS Control	Adjusts overall brightness of the video display.
CONTRAST Control	Adjusts the contrast level of the video display.
BAUD RATE Switch	Selects the data transmission rate which the input/output paths use to communicate. Normally set to 13 (9600 Baud rate).
MAIN PORT	Allows interconnection of data source with the computer and keyboard.
AUX PORT	Allows other devices as disks and printer to be connected to the video display terminal.
H/B/F	Directs data transmission between terminal and computer. Normally set at F position.
CL/R/EIA	Permits input/output information to be transmitted. Normally set at EIA position.
Composite Video Connector	Used to connect a second video display terminal.

NOTE

All system components are plugged into the system power strip, located inside the bottom rear of the desk, and master system power is controlled by the Master Circuit Breaker, located on the lower back panel of the desk.


Composite Video Connector
Power Switch
Circuit Breaker Reset

2-7 TEXT PRINTER FRONT PANEL

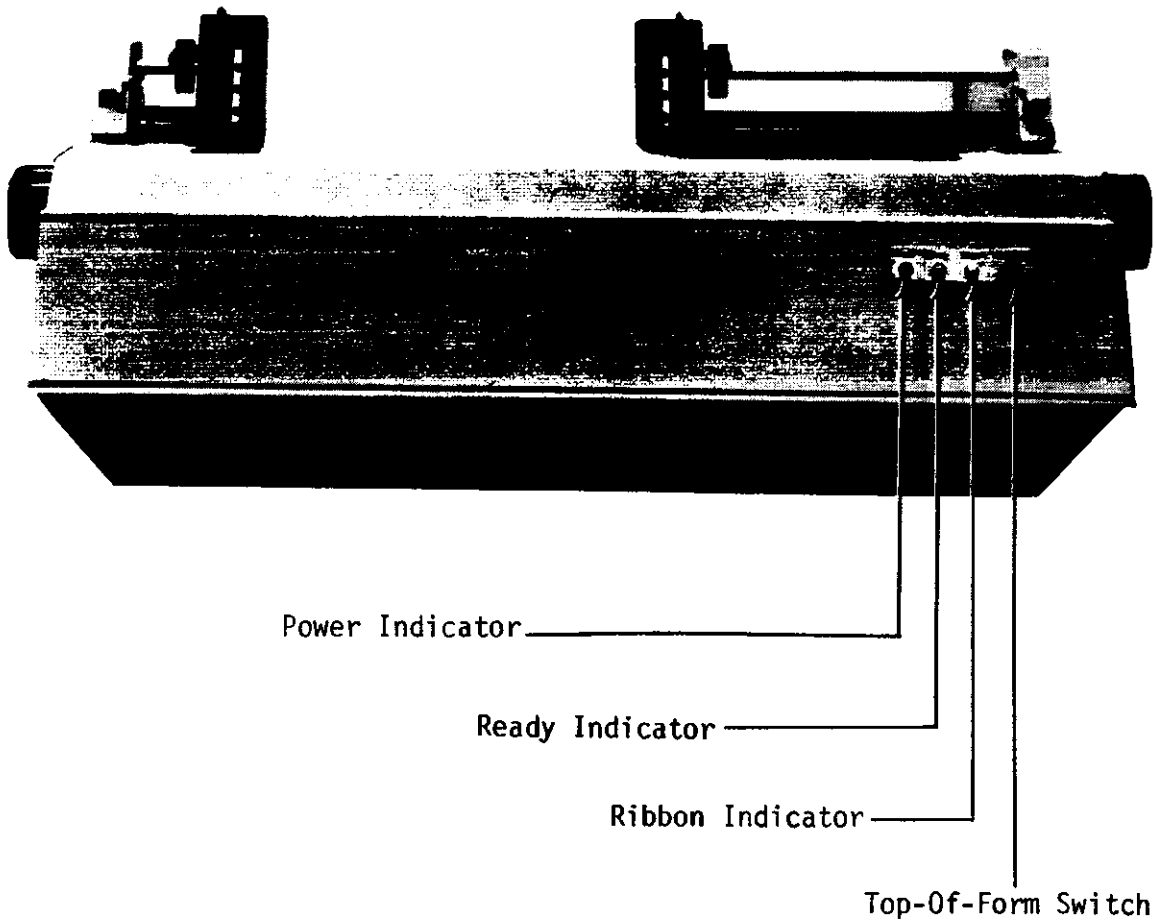
The front panel contains operational controls and indicators for controlling and monitoring the text printer.

The function of each switch/indicator is:

CONTROL/INDICATOR	FUNCTION
POWER Indicator	Indicates printer is on. Printer power is turned on or off by the red push-on, push-off power switch on the side of the printer power supply (attached to the back of the printer). (See NOTE below.)
READY Indicator	Indicates printer is ready to print.
RIBBON Indicator	When off, indicates ribbon cartridge needs replacement.
TOP-FORM Switch	When pressed, positions the paper feeding mechanism and causes platen to advance to the next top of form point.

NOTE

All system components are plugged into the system power strip, located inside the bottom rear of the desk, and master system power is controlled by the Master Circuit Breaker, located on the lower back panel of the desk.


Power Indicator
Ready Indicator
Ribbon Indicator
Top-Of-Form Switch

2-8 MATRIX PRINTER FRONT PANEL

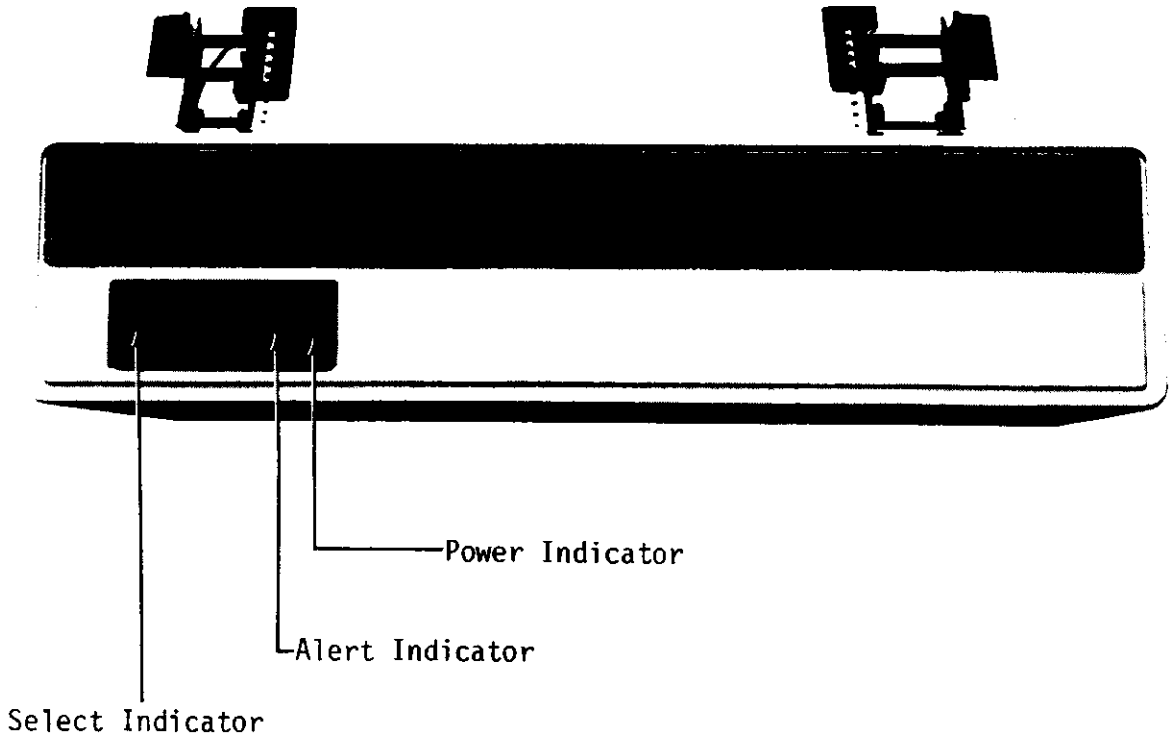
The front panel contains the functional switches and indicators for controlling and monitoring the matrix printer.

The function of each switch/indicator is:

CONTROL/INDICATOR	FUNCTION
POWER ON/OFF Switch (on rear of printer)	Turns line printer power ON (up) or OFF (down). (See NOTE below.)
POWER Indicator	Indicates power is on.
SELECT Push Switch	When pressed, selects printer.
SELECT Indicator	Indicates printer is selected.
LINE FEED Switch	When pressed, causes paper to advance to next top of form point.
ALERT Indicator	Indicates error condition such as paper empty or malfunction has occurred.

NOTE

All system components are plugged into the system power strip, located inside the bottom rear of the desk, and master system power is controlled by the Master Circuit Breaker, located on the lower back panel of the desk.


Power Indicator
Alert Indicator
Select Indicator

3 OPERATING THE MITS 300 SYSTEM

3-1 MITS 300/25 START-UP PROCEDURE

The MITS 300/25 System start-up procedure is shown below.

Plug the system power cord (from the system power strip) into a grounded power outlet. (The MITS dealer will set each system component for the available power.)

STEP	LOCATION	ITEM/INDICATOR	ACTION/HOW TO USE
1	Back of desk	Master Circuit Breaker	Set to ON (up).
2	Floppy Disk	Operating System Diskette (BASIC)	Load diskette into left drive (drive 0) (see Section 3-3).
3	Floppy Disk	Power Switch	Set power to ON. Close door. Wait 10 seconds.
4	Video Display Terminal	Power Switch ALPHA LOCK Key/ Indicator	Set power to ON. Press, indicator lights.
5	Printer	Power Switch	Set to ON (line printer) or press to on position (locked-in) (text printer).
6	Computer	Power Key Switch	Insert key and rotate right 1/4 turn.

After several seconds, 'MEMORY SIZE' will be displayed on the Video Display Terminal. Refer to the appropriate application software manual for initialization procedures and operating instructions.

NOTE

All terminal keyboard responses for BASIC initialization must be entered as upper case characters.

3 OPERATING THE MITS 300 SYSTEM

3-2 MITS 300/55 START-UP PROCEDURE

The MITS 300/55 System start-up procedure is shown below.

Plug the system power cord (from the system power strip) into a grounded power outlet. (The MITS dealer will set each system component for the available power.)

STEP	LOCATION	ITEM/INDICATOR	ACTION/HOW TO USE
1	Back of desk	Master Circuit Breaker	Set to ON (up).
2	Hard Disk	Operating System Cartridge (BASIC)	Load the Cartridge (refer to Section 3-5).
3	Hard Disk Controller	Key Switch	Insert key and rotate 1/4 turn to the CPU RESET position.
4	Hard Disk Drive	Power Switch	Set power to ON. Wait for SAFE to light.
5	Video Display Terminal	Power Switch ALPHA LOCK Key/ Indicator	Set power to ON. Press, indicator lights.
6	Printer	Power Switch	Set to ON (line printer), or press to on position (locked-in) (text printer).
7	Hard Disk Drive	RUN/STOP Switch	Push Switch to RUN. Wait for READY to light.
8	Computer	Power Key Switch	Insert key and rotate right 1/4 turn.
9	Hard Disk Controller	Key Switch	Rotate 1/4 turn to RUN position.

After several seconds, 'MEMORY SIZE' will be displayed on the Video Display Terminal. Refer to the appropriate application software manual for initialization procedures and operating instructions.

NOTE

1. All terminal keyboard responses for BASIC initialization must be entered as upper case characters.

2. Initial Hard Disk stabilization requires 2 hours. Stabilization after loading cartridge requires 15 minutes.

3 OPERATING THE MITS 300 SYSTEM

3-3 LOADING THE DISKETTE

Diskette loading is accomplished by opening the front door and inserting the diskette into the floppy disk drive mail type slot.

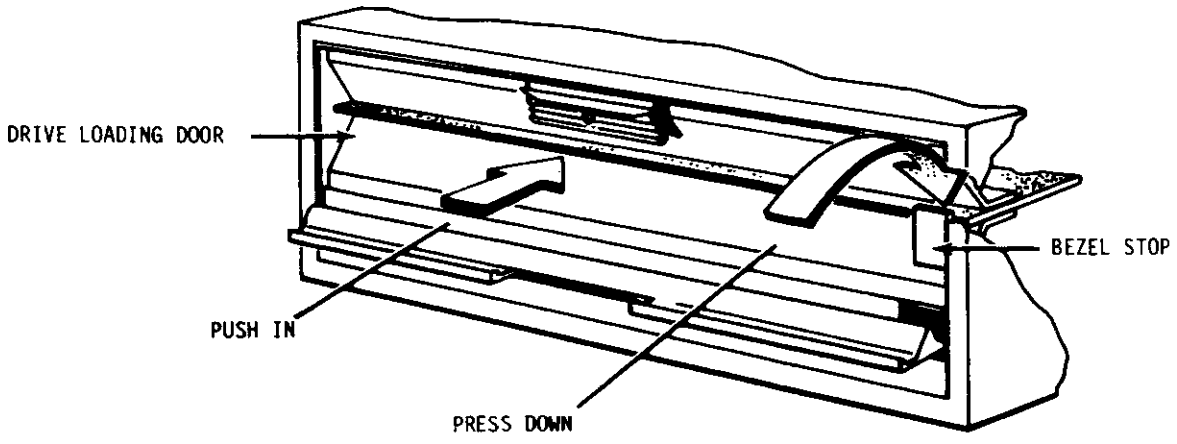
Each floppy disk drive is equipped with a spring-loaded card ejector, which causes the diskette to remain 1 inch outside the slot if not latched behind the bezel stop. This indicates that the diskette is not properly inserted.

The correct method of diskette loading is shown below. Make sure the diskette Index label side is facing upward. When loading a diskette into the drive a light force is required on the right portion of the diskette. When the diskette is fully inserted, a slight downward pressure at the right side of the diskette will allow it to seat. The loading door can now be closed, thus engaging the diskette.

The diskette should be carefully inserted until the diskette jacket is solidly against the stop.

CAUTION

DAMAGE TO THE DRIVE HUB HOLE IN THE DISKETTE MAY RESULT IF THE DOOR IS CLOSED WHEN THE DISKETTE IS NOT PROPERLY INSERTED.



3 OPERATING THE MITS 300 SYSTEM

3-4 UNLOADING THE DISKETTE

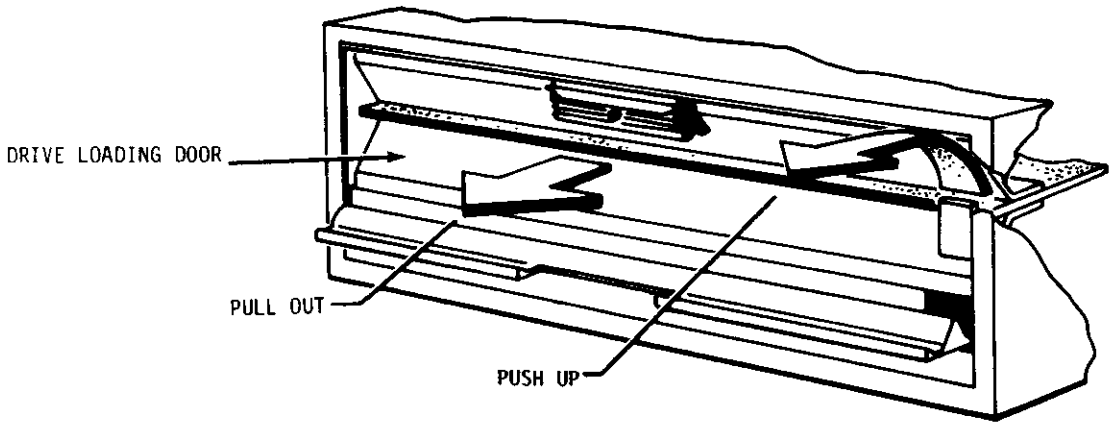
Diskette unloading is accomplished by opening the front door and removing the diskette from the floppy disk drive mail type slot.

When the diskette loading door is opened, the diskette can be withdrawn.

CAUTION

IF THE DOOR IS NOT FULLY OPENED, DAMAGE TO THE DISKETTE MAY OCCUR.

The correct method of diskette unloading is shown below. The diskette is disengaged by exerting a slight upward pressure on the diskette. This will release the diskette, which will then be ejected. The diskette can then be fully withdrawn. Close the door to the drive and place the diskette in a protective jacket.



3-5 LOADING THE HARD DISK CARTRIDGE

The following steps and the figures on the facing page should be followed while loading a hard disk cartridge.

Push the RUN/STOP button to STOP and wait for the SAFE indicator to light.

Pull the hard disk drive straight out from its cabinet until the cartridge area is accessible. Don't pull the drive further than necessary.

Figure Reference	Action
1	Position the cartridge lock arm away from the disk area and rotate the cartridge lock arm completely into its recess.
2	Position the cartridge flat on the table. Push the cartridge release/lock (with the thumb) all the way to the left hand side and pull the handle vertically to release the cartridge from its cover.
3	Position the cartridge over the adapter bowl inclined downward towards the rear of the drive. Slide the lowered edge of the cartridge under the fixed retainer arm. Lower the cartridge into the adaptor, latching the adaptor wall keys with key notches on the cartridge base. NOTE A correctly positioned cartridge will seat flush with periphery of rim and cannot be rotated. Do not attempt to force-seat any cartridge; damage to the cartridge and disk drive will result.
4	Lower the cartridge release/lock arm so that the cartridge hub engages the spindle clutch. Invert cartridge cover and place over the cartridge inserted. Position the cartridge lock arm back over the cartridge cover, until it rests against the stop provided by the side of the recesses in the adaptor bowl. NOTE If the cartridge and cover are not positioned properly the drive will fail to start. Do not attempt to force the arm. Rotate the arm back into the recess and correctly position the cartridge cover. Push the disk drive fully into the cabinet. Push the RUN/STOP button to run and the READY light should come on.

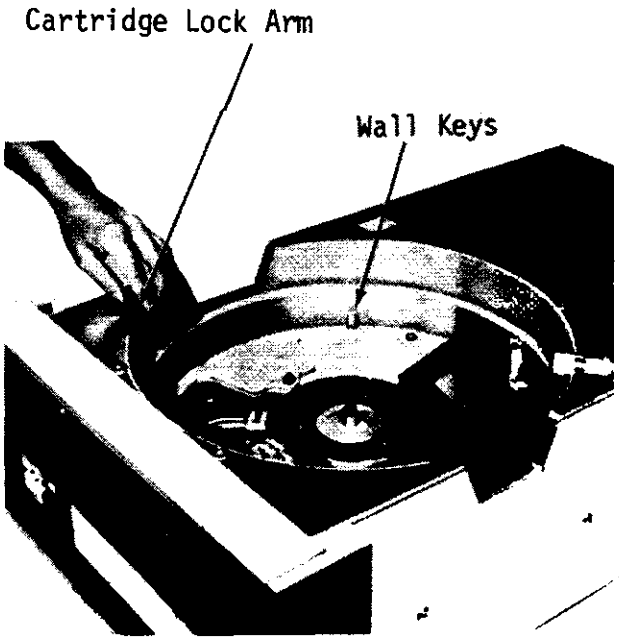


Figure 1

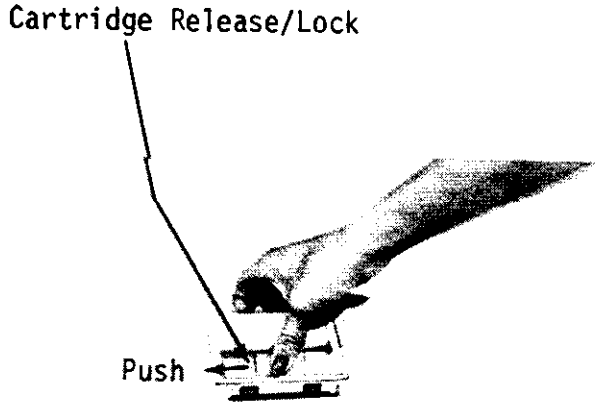


Figure 2

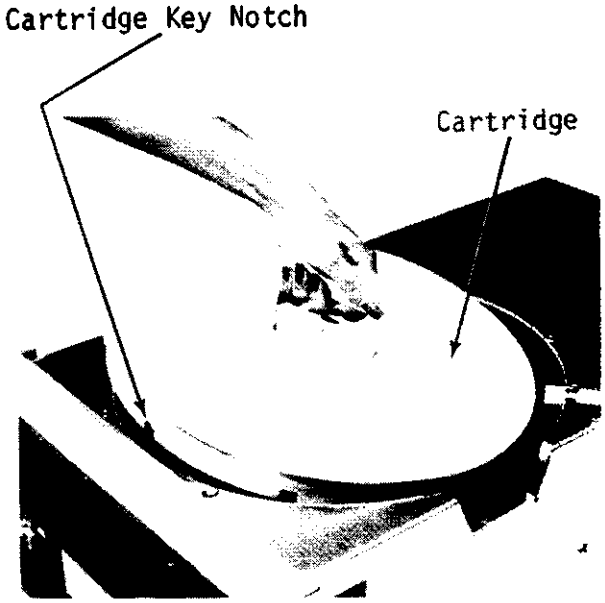


Figure 3

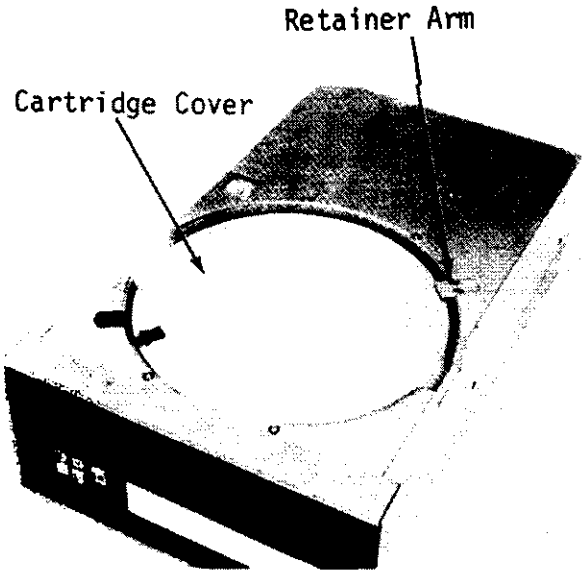


Figure 4

3-6 UNLOADING THE HARD DISK CARTRIDGE

The following steps should be followed to unload a hard disk cartridge.

Figure Reference	Action
	Push the RUN/STOP button to STOP and wait until the SAFE light comes on. Pull the hard disk drive straight out from its cabinet until the cartridge area is accessible. Don't pull the drive further than necessary.
1	Rotate the cartridge lock arm away from the top of cover in to the recess in the bowl. Lift the cartridge cover out of the disk drive and invert it on the table.
2	With the thumb push the cartridge release/lock all the way to the left hand side and pull the handle vertically to disengage the cartridge from the clutch. Carefully lift the cartridge out of the adapter bowl and slide it into the cartridge cover. Press the cartridge release/lock arm into the recess, and release so that the hub engages the cover and protects the disk. NOTE Unless another cartridge is to be inserted immediately, the drive should be protected from dirt and contamination.

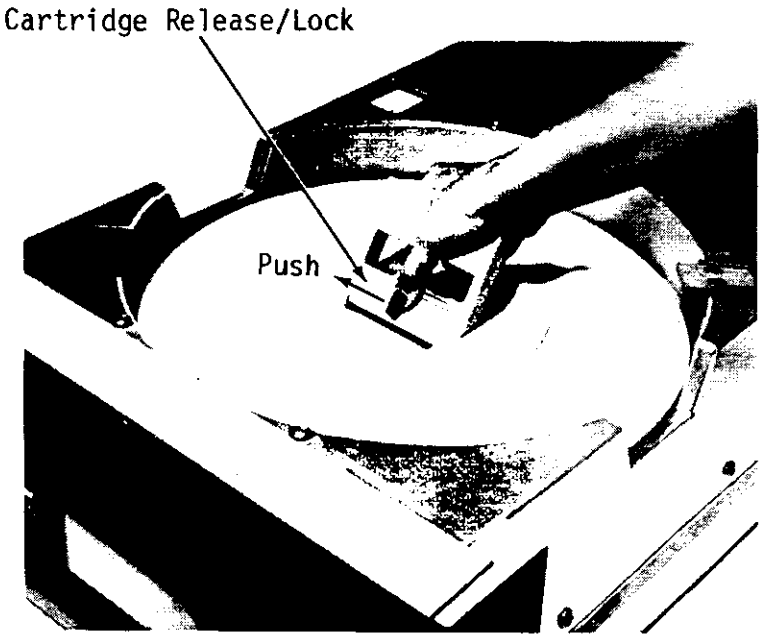


Figure 1

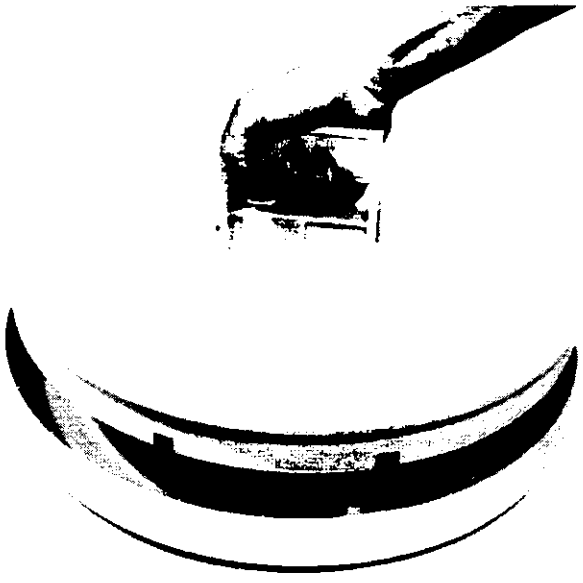


Figure 2

3 OPERATING THE MITS 300 SYSTEM

3-7 LOADING PAPER IN THE TEXT PRINTER

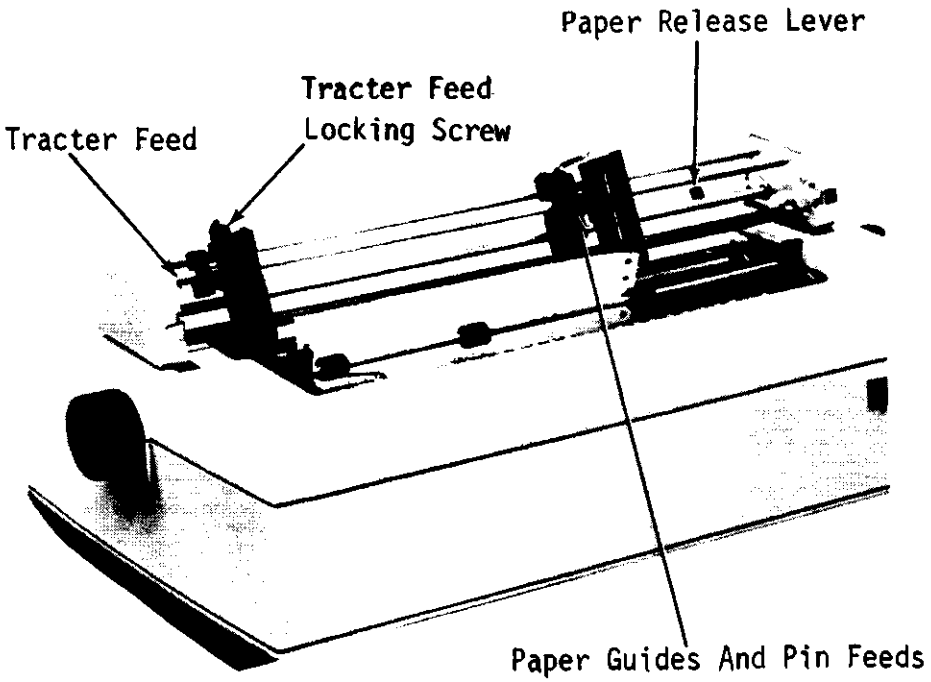
Use this procedure to load paper in the Text Printer.

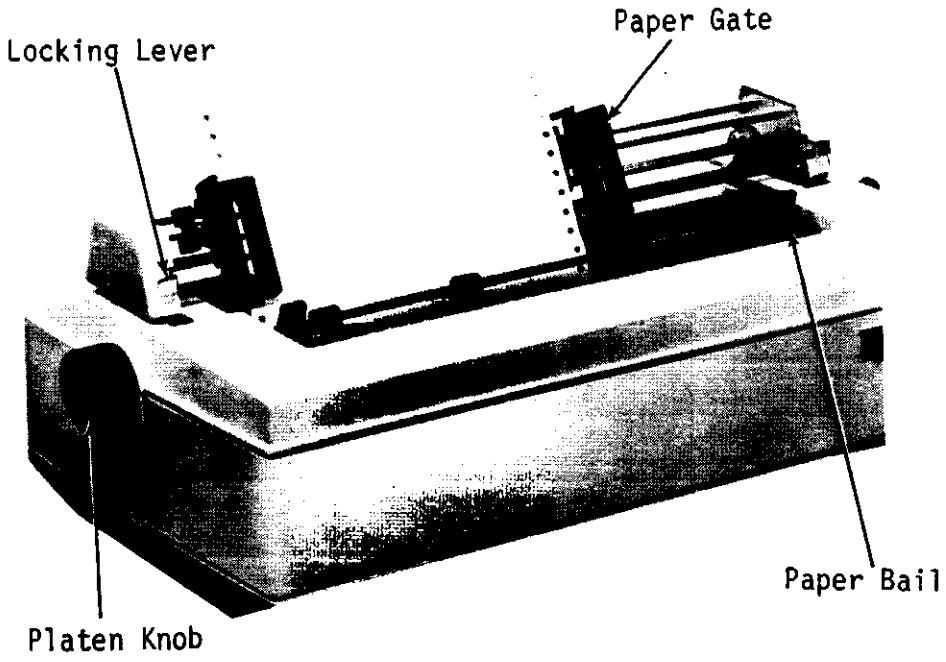
To load paper proceed as follows:

1. Pull the paper bail forward, out of the way, and raise the paper gates on the tractor's drive sprockets.
2. Momentarily press the TOP-OF-FORM button to index the feed mechanism.
3. Insert the edge of the paper behind the platen, as on a typewriter.
4. Move the paper through to the front by pressing the platen knob inward and manually rotating the platen knob.
5. Disengage the friction feed mechanism by pulling the paper release lever all the way forward.
6. Draw the paper around the front of the platen and align the holes punched in the paper margins with the pins on the drive sprockets. Close the paper gates.
7. Adjust the drive sprockets by loosening the clamp screws on the drive sprockets and repositioning the sprockets. The sprockets should be positioned such that the paper is not stretched or buckled in the center.
8. Check the adjustment of the drive sprockets. They must neither be too far apart stretching the paper, nor close enough buckling the paper upward at the center. If the page is not centered, loosen the clamp screws on the drive sprockets and reposition them correctly.
9. Disengage the platen and position the paper vertically at the top by rotating the platen knob. This ensures that the top-of-the-form point of the paper feed mechanism corresponds to the actual beginning of the page.
10. Move the paper bail toward the platen, letting it rest against the track frames.

CHECK

The Paper Release lever must be in the forward position while the printer is in operation.


Paper Release Lever
Tracter Feed
Locking Screw
Tracter Feed
Paper Guides And Pin Feeds

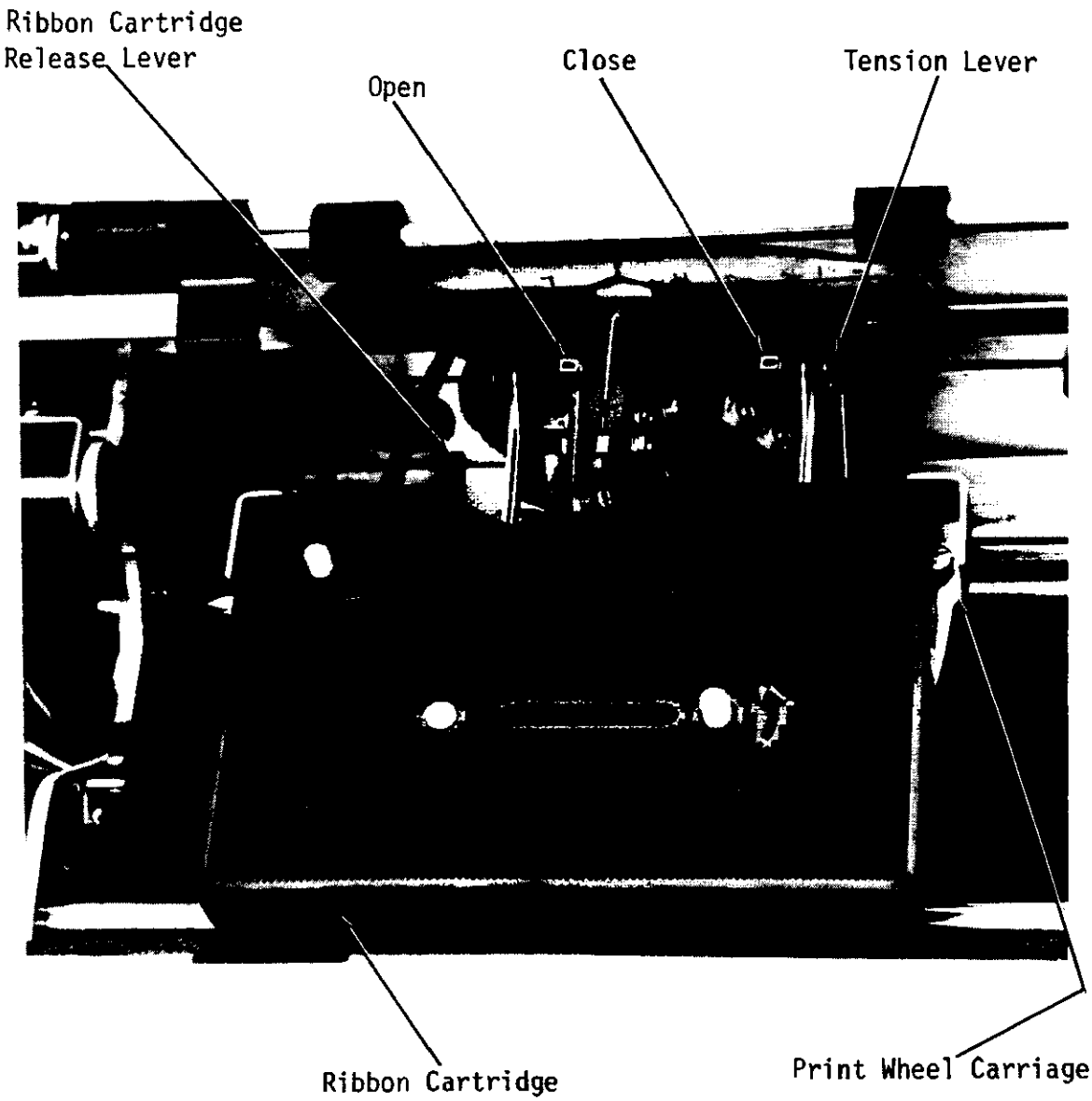

Paper Gate
Locking Lever
Paper Bail
Platen Knob

3-8 REPLACING THE TEXT PRINTER RIBBON

The ribbon of the Text Printer is replaced when print quality deteriorates (i.e., fading is evident).

To replace ribbon proceed as follows:

1. Remove the printer's snap on cover.
2. Press the "O" (open) button on the Carriage Locking lever until a click is heard.
3. Tilt the Print Wheel Carriage slightly.
4. Press the red Cartridge Release Lever and remove the old ribbon cartridge.
5. Pull a loop of ribbon out of the replacement ribbon cartridge.
6. Loop the ribbon over the printwheel, through the ribbon guides and around the Tension Lever as shown on facing page.
7. Align the ribbon cartridge with the carriage, and press down firmly to lock it in place.
8. Press the "C" (close) button of the Carriage Locking Lever until it clicks.
9. Check to make sure that the ribbon is still properly threaded and fully engaged in the ribbon lifters.
10. Replace the printer's snap-on cover.

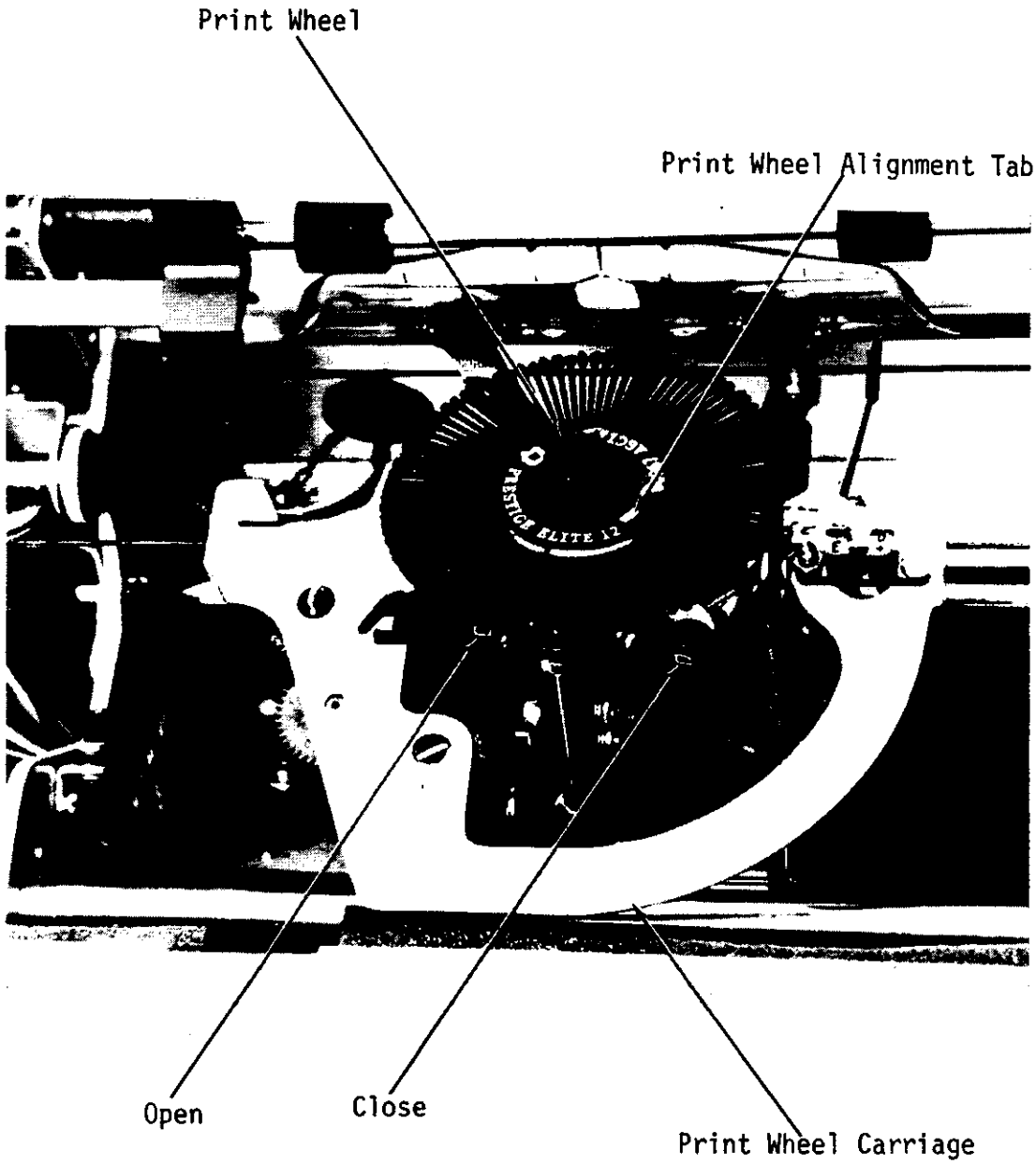

Ribbon Cartridge
Release Lever
Open
Close
Tension Lever
Ribbon Cartridge
Print Wheel Carriage

3-9 CHANGING THE TEXT PRINTER DAISY PRINTWHEEL

Use this procedure to change the daisy printwheel of the Text Printer.

To remove printwheel, proceed as follows:

1. Remove the printer cover.
2. Press the "0" button on the carriage locking lever until it clicks.
3. Remove the ribbon cartridge.
4. Tilt the carriage all the way back and remove the printwheel by pulling up gently, but firmly, on the printwheel knob.
5. To re-install printwheel, align the printwheel so the metal flange on the hub matches up with slot in the printwheel, as shown on the facing page. Then press down firmly to seat the printwheel on its hub.
6. Tilt the carriage forward from its normal operating position.
7. Re-install the ribbon cartridge.
8. Push the carriage down to its normal operating positon and press the "C" button of the Carriage Locking Lever until it clicks.
9. Check to make sure that the ribbon is properly threaded and fully engaged in the ribbon lifters.
10. Replace the printer's snap-on cover.

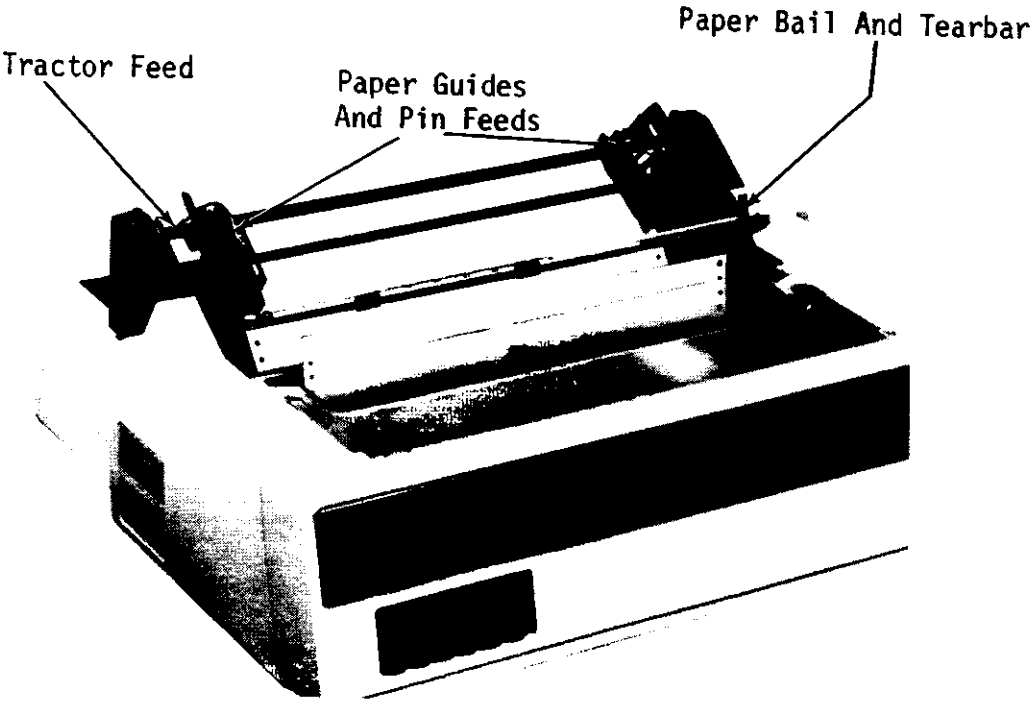

Print Wheel
Print Wheel Alignment Tab
Open
Close
Print Wheel Carriage

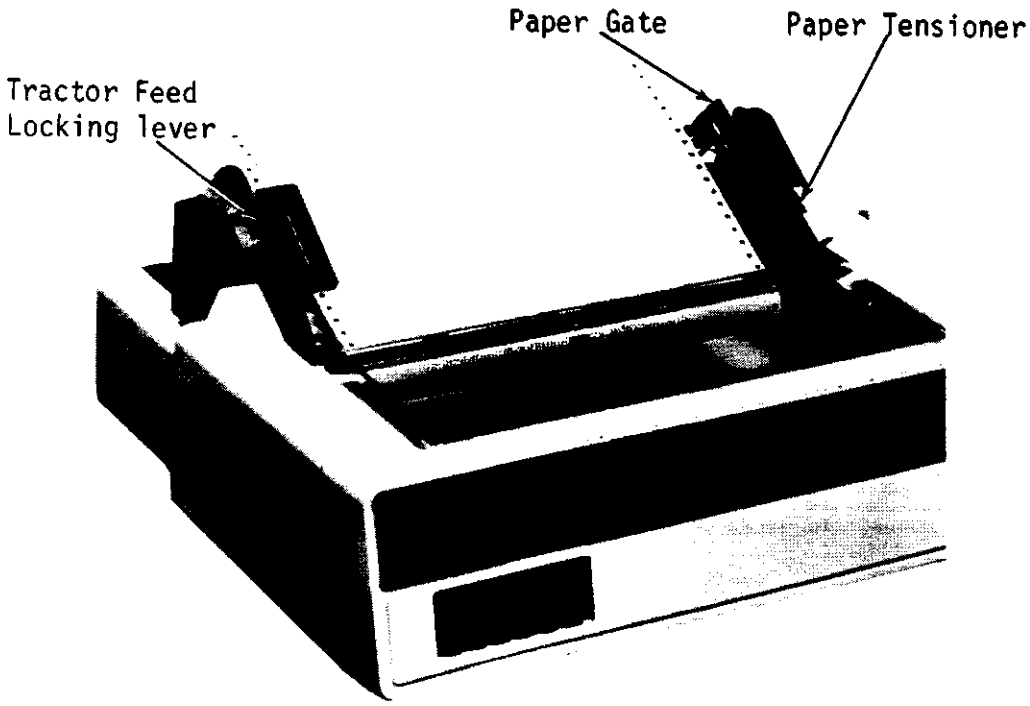
3-10 LOADING PAPER IN THE MATRIX PRINTER

Use this procedure to load paper in the Matrix Printer.

To load paper in the Line Printer, turn power off, remove the clear printer cover (push back then lift up the front edge), and proceed as follows:

1. Pull the paper bail and tearbar forward.
2. Release tractor feed locking levers and tilt tractor feed unit back.
3. Feed paper underneath tractor unit, up into the pinfeed tractor and paper guides.
4. Close paper guides, and swing tractor unit to its original position.
5. Move the paper under platen and through the front by pulling the platen knob outward, and manually rotating the platen knob.
6. Open paper guides and align paper sheet with top of the printer to obtain actual beginning of the page. Disengage the platen.
7. Close the tractor feed locking lever and close paper guides.
8. Adjust pin feed tractors to accommodate paper width.
9. Adjust paper tension with tensioner wheel.
10. Move the paper bail and tearbar back to rest on platen.


Paper Bail And Tearbar
Tractor Feed
Paper Guides
And Pin Feeds

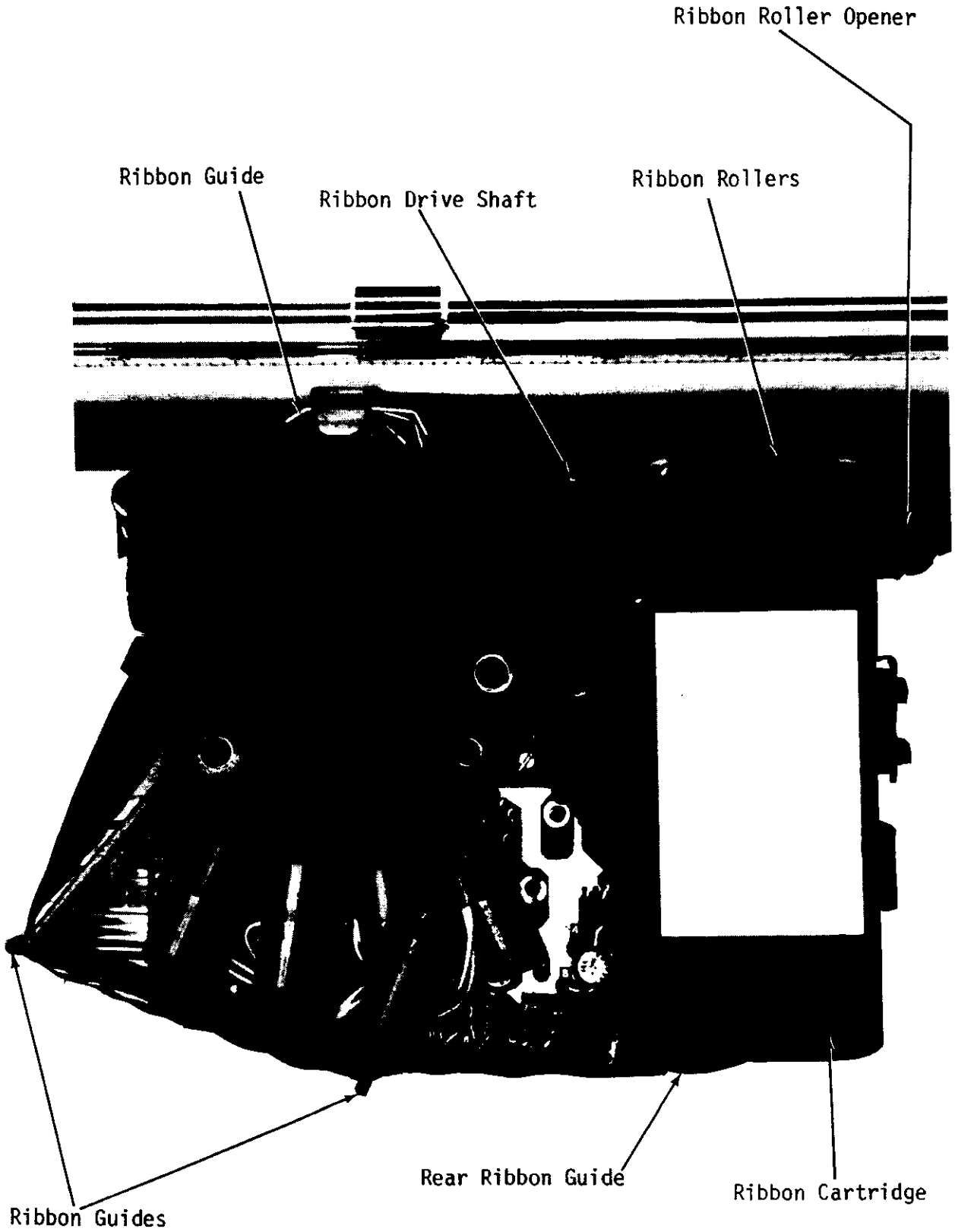

Paper Gate
Paper Tensioner
Tractor Feed
Locking lever

3-11 REPLACING THE MATRIX PRINTER RIBBON

Use this procedure to change the **Matrix Printer** Ribbon.

To replace the ribbon in the **Matrix Printer**, turn power off, remove the clear printer cover (push back then lift up the front edge), and proceed as follows:

1. Open the Ribbon Cartridge cover.
2. Open the Ribbon Rollers by turning the Ribbon Roller Opener in either direction. Remove and discard the old ribbon.
3. Place the new ribbon in the cartridge as shown and unwind enough ribbon to loop around the printer head.
4. Pass one end of the loop between the Ribbon Rollers and the other end through the rear slot, as shown on the facing page.
5. Close the Ribbon Rollers by moving the Ribbon Roller Opener to the center position.
6. Close the Ribbon Cartridge cover.
7. Feed the ribbon through the Ribbon Guide in the front of the printer head.
8. Feed the ribbon through the center Ribbon Guide.
9. Place the remainder of the ribbon through the Rear Ribbon Guides. Take up the slack on the ribbon by rotating the Ribbon Drive Shaft clockwise.


Ribbon Roller Opener
Ribbon Guide
Ribbon Drive Shaft
Ribbon Rollers
Rear Ribbon Guide
Ribbon Cartridge
Ribbon Guides

3-12 MATRIX PRINTER PRINTHEAD ADJUSTMENT

The Head Penetration Control Knob, located on the left side of the print head carriage, controls the clearance between the face of the print head and the platen. This clearance must be adjusted according to the thickness of the forms being used.

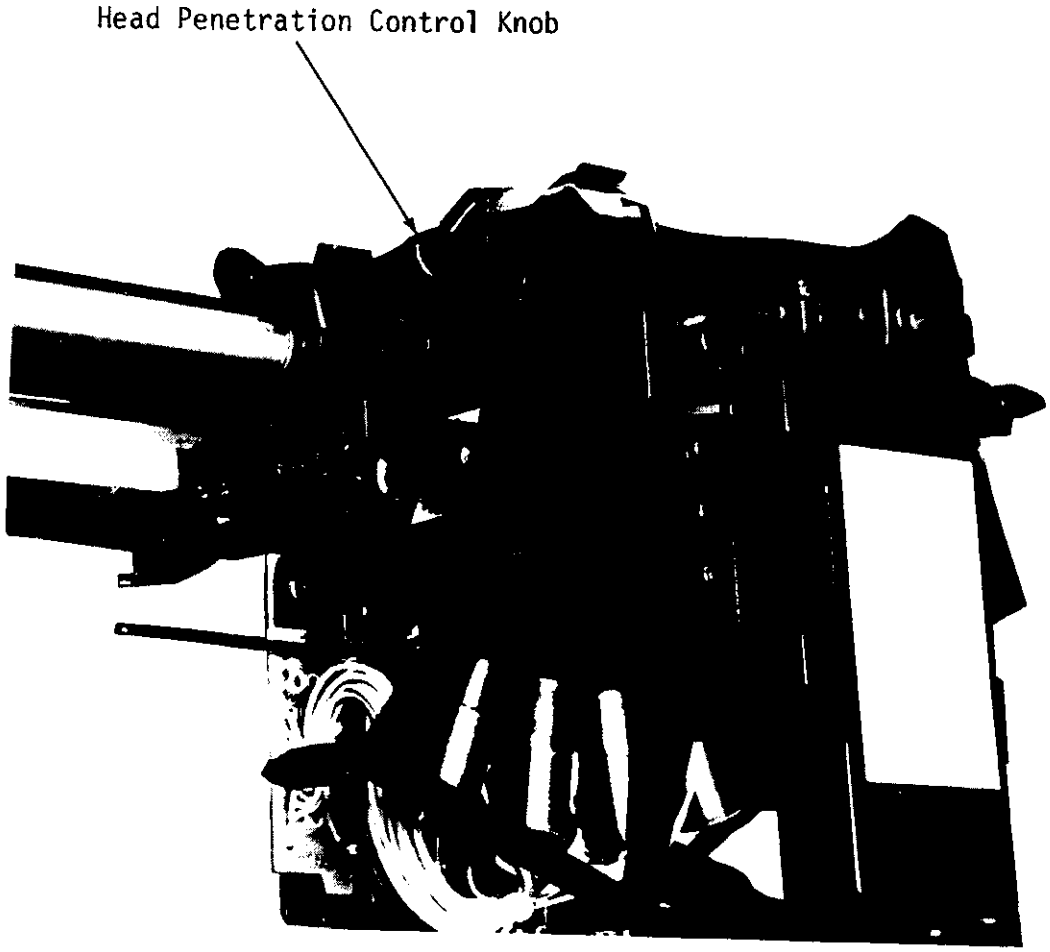
To adjust the print head to obtain optimum print quality, turn power off, remove the clear printer cover (push back then lift up the front edge), and proceed as follows:

1. Loosen the Head Penetration Control Knob by turning it in a clockwise direction.

2. For single-part forms, increase the head penetration by pushing the knob slightly toward the printer. For multi-part forms, push the knob all the way toward the printer.

3. Manually move the printer head across the paper to insure the ribbon is not binding. If the ribbon is binding, pull back the Head Penetration Control Knob just enough to prevent binding.

4. Tighten the Head Penetration Control Knob by turning it clockwise.


Head Penetration Control Knob

SECTION 4

OPERATOR MAINTENANCE

4 OPERATOR MAINTENANCE

4-1 OPERATOR TROUBLESHOOTING PROCEDURES

Problem symptoms an operator may encounter are listed in the following chart. Possible causes for each symptom are given. A suggested corrective action is described; if this action does not correct the fault, contact your nearest MITS dealer.

Operator Troubleshooting Guide

SYMPTOM	CAUSE	ACTION
COMPUTER:		
Not Operating	No AC Power	Check power input.
	Not turned on	Rotate key right 1/4 turn.
	Program not loading	Check that all boards and connectors are secure. Check whether disk drive or hard disk is ready. Try reloading program.
FLOPPY DISK:		
Not Operating	No AC Power	Check power input
Not Ready	READY indicator not on	Check that diskette is properly inserted.
HARD DISK:		
Not Operating	No AC Power	Check power input.
Not Ready	Drive Not Ready (SAFE not on)	Check whether cartridge is inserted correctly. Check that the controller is set to RUN.
VIDEO DISPLAY TERMINAL:		
Display dark	No AC Power	Check power input.
	No Brightness	Adjust brightness control
Display Characters Distorted	No Contrast	Adjust contrast control

SYMPTOM	CAUSE	ACTION
Display On, But No Communication With Computer	Interface cable loose	Secure cable
	ALPHA LOCK "off"	Press ALPHA LOCK key.
	Keyboard key problems	Check for any stuck keys or foreign material between keys.
PRINTER:		
Not Operating	No AC Power	Check power input.
	Paper or Ribbon out	Replace.
Not Printing	Select light not on	Press SELECT switch.
	Loose cable	Secure cable.
Ribbon Not Tracking Correctly	Improper ribbon installation	Install ribbon correctly.
Paper Skewing When Fed	Paper feed tractors out of position or loose locking lever	Correctly position paper feed tractors and tighten locking lever.
Light, Smudgy, Poor Printing Quality	Head or printwheel not penetrating correctly	Adjust head penetration or replace printwheel.
	Bad ribbon cartridge	Replace ribbon.

4 OPERATOR MAINTENANCE

4-2 CLEANING

Cleanliness is essential for proper operation of the MITS 300 System, especially if you are using hard disk system. Minute particles of dirt, fiber and foreign matter (as tobacco smoke and ashes) can cause improper functions, and consequently errors.

Precautions must be taken while cleaning various units of the system. Perform following instructions when the system power is off.

Hard Disk System

Using a mild detergent, clean the front control panel overlay and wipe out with a soft, clean, dust-free cloth. The disk drive requires cleaning in these major areas: heads, disks, spindle, positioner, base casting, dust cover, and filters. Cleaning materials recommended for use are:

- Lint-free wiper (Microwipes TX500 or equivalent)
- Isopropyl alcohol - 91% by volume only (Do not use any other type of cleaner on the hard disk system).

WARNING

THE 91% ISOPROPYL ALCOHOL SOLUTION IS A FLAMMABLE LIQUID AND SHOULD BE STORED IN A SEALED METAL CONTAINER EXCEPT WHEN IN USE.

- Disk cleaning wands of type TX800. (PERTEC Part No. 623-002.)

Carefully wipe the slider face of the head assembly with the dampened wiper. Take care not to over-stress the gimbal spring of the load spring on the head assembly.

Wipe the slider face dry using the second cleaning wand; this operation must be done before the alcohol has evaporated.

Use a dental mirror to inspect each head after cleaning. It is important that all debris be removed from the head since debris not removed is a potential problem.

Wipe the spindle cone and the magnetic chuck with a dry lint-free wiper. Metal particles that have become attracted to the magnetic chuck may be removed using masking tape. Be sure no adhesive residue is left on the chuck.

Floppy Disk System

Wipe the face of the head with an alcohol-dampened lint-free cloth to remove all accumulated oxide and dirt.

Dry the head before the alcohol evaporates.

CAUTION

DO NOT USE ROUGH OR ABRASIVE CLOTH TO CLEAN THE MAGNETIC RECORDING HEAD.

Video Display Terminal

The keyboard and screen can be cleaned by using a soft-bristled brush for dusting and an alcohol-dampened lint-free cloth for wiping off any dirt.

CAUTION

DO NOT USE COMPRESSED AIR AS THIS WILL BLOW DIRT INTO THE COMPUTER CHAMBERS AND AIR SYSTEM.

Printer

The printers normally tend to collect paper fibers, ink splatters, etc., and should be cleaned once a week.

- Text Printer

Remove the print wheel.

Use a soft-bristle brush to lightly dust the printwheel carriage assembly.

Dip a cleaning brush in FORMULA 409™ cleaner, and brush away all traces of greasy residue embedded in the printing dies. Wipe the printwheel dry with a clean, lint-free cloth and re-install it on the printer.

Follow up with a soft cloth, using this to wipe the carriage guide rails and then generally clean the interior of the Text Printer.

- Line Printer

Remove the clear printer cover (push back then lift up the front edge).

Use a soft cloth to clean the print head support bar.

Use an alcohol-dampened lint-free cloth to gently clean the ribbon rollers.

Use a soft cloth to generally clean the interior of the Line Printer.