SPERRY

PUBLICATIONS UPDATE

General

8407 Diskette Drive

Operator Reference

UP-8923-B

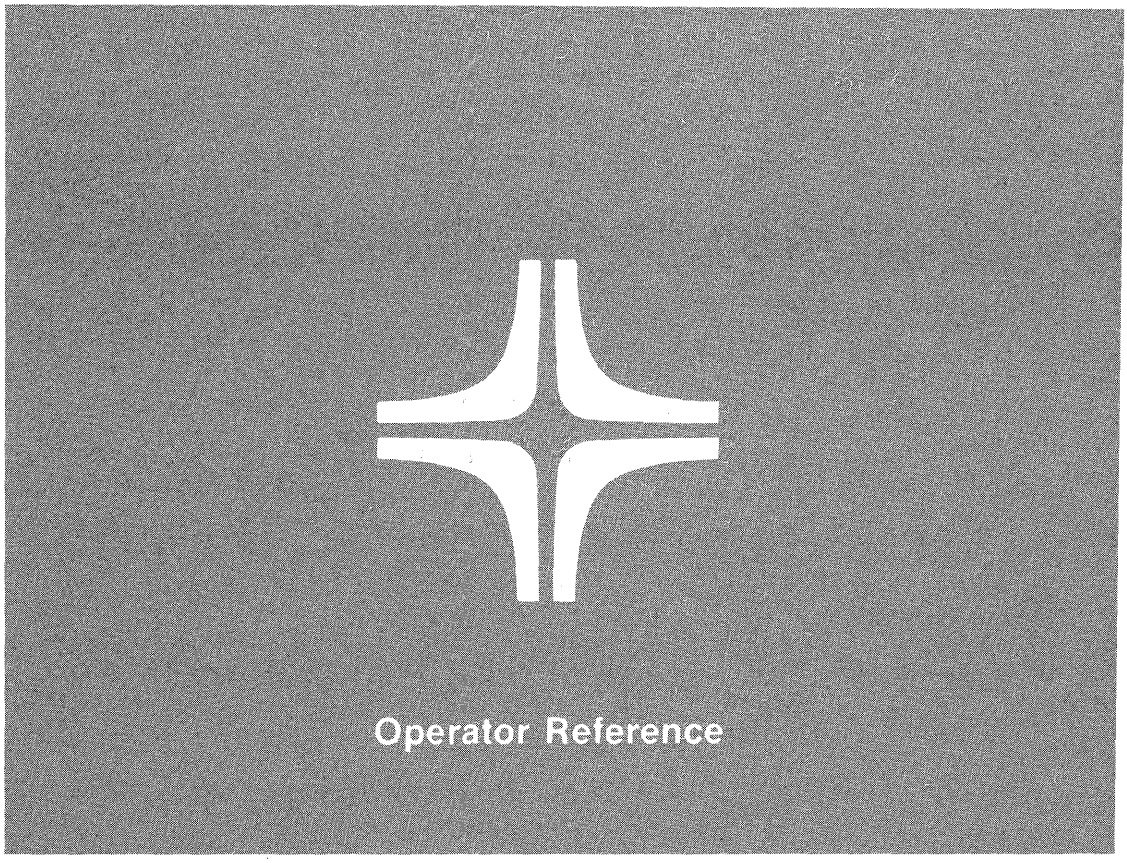
This Library Memo announces the release and availability of Updating Package B to "SPERRY 8407 Diskette Drive Operator Reference", UP-8923.

This update removes the maintenance panel from Figure 2–1 and any references to it within the text. It also clarifies the removal of power when the top cover is raised.

Copies of Updating Package B are now available for requisitioning. Either the updating package only or the complete manual with the updating package may be requisitioned by your local Sperry representative. To receive only the updating package, order UP-8923–B. To receive the complete manual, order UP-8923.

LIBRARY MEMO ONLY	LIBRARY MEMO AND ATTACHMENTS	THIS SHEET IS
Mailing Lists AC, BZ, CZ (less DE, GZ, HA) MZ, 8, 9, 9U, 30, 31U, MBR, MBSU and MCRU	Mailing Lists DE, GZ, HA and 82 (Package B to UP-8923, 7 pages plus Memo)	Library Memo for UP-8923–B
		RELEASE DATE: February, 1984

8407 Diskette Drive



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PAGE STATUS SUMMARY

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4. OPERATION

1. Introduction

The SPERRY 8407 Diskette Drive (Figure 1–1) described in this manual is a free-standing, autoloader-type diskette drive unit that can read, write, and initialize diskette media conforming to industry standards. Up to 20 diskettes can be loaded and stacked in the diskette drive.

1.1. PURPOSE

This manual describes the operating procedures for the drive. Programming information can be obtained in the 8407 diskette drive reference, UP-8921 (current version).

The following instructions and procedures for operation of the drive are contained in this manual:

- Brief description of drive unit components (Section 2)
- Controls and indicators used by the operator (Section 3)
- Procedures for operating the drive unit (Section 4)

1.2. OPERATOR RESPONSIBILITIES

The operator is responsible for performing routines directed by the operations supervisor and for making required checks for efficient operation of the subsystem. To perform these tasks, the operator must understand the general operating concepts of the subsystem and be familiar with the diskette drive. Duties include:

- turning power on and off;
- loading and unloading diskettes;
- clearing jammed diskettes; and
- routine cleaning maintenance.

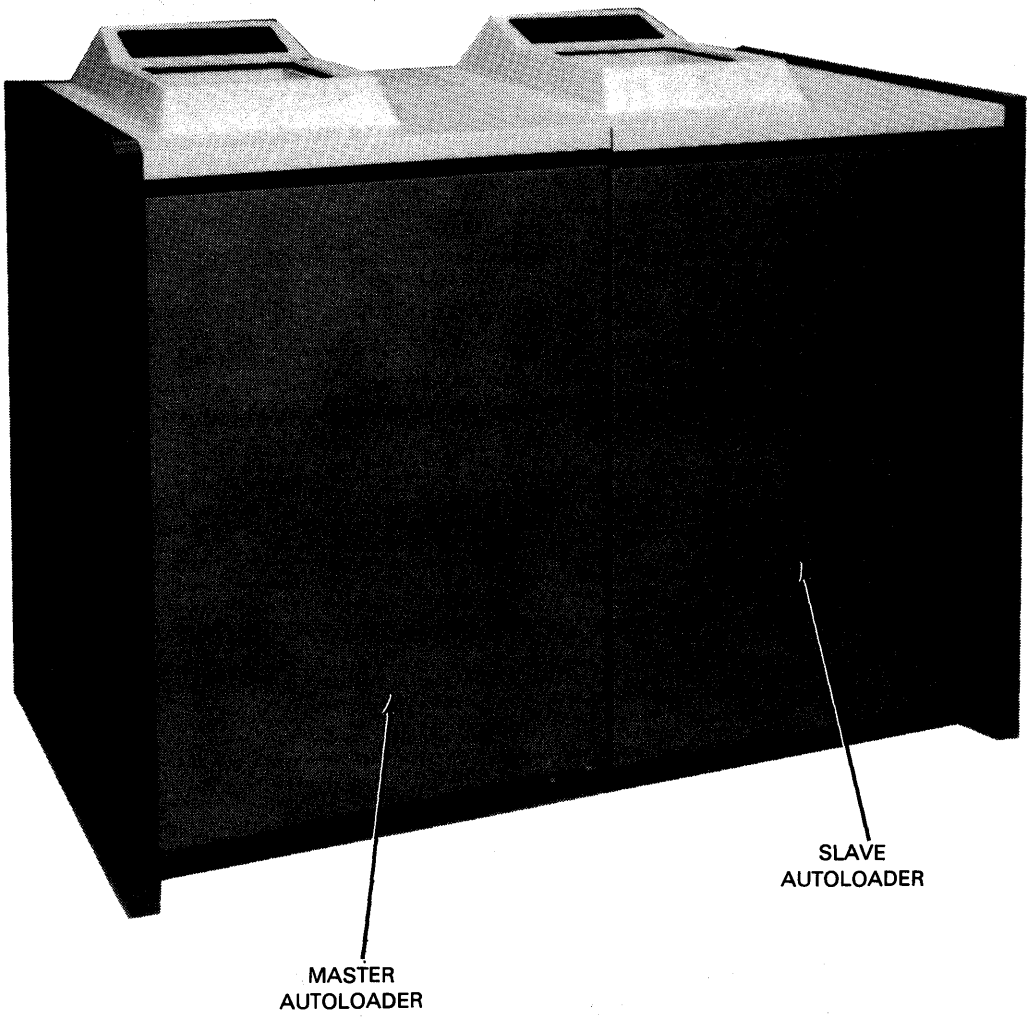


Figure 1–1. SPERRY 8407 Diskette Drive

2. Description

2.1. COMPONENTS

The 8407 diskette drive consists of a controller, power supply, autoloader feeding mechanism, and diskette drive (Figure 2–1). An optional second autoloader may be included. The drive unit uses *floppy* diskettes to provide I/O and store capabilities to the host system.

The drive can read or write on single or 2-sided diskettes that are recorded in single density (FM) or double density (MFM) mode. SPERRY P720 E 015 (FM) and P720 E 017 (MFM) formats may be used.

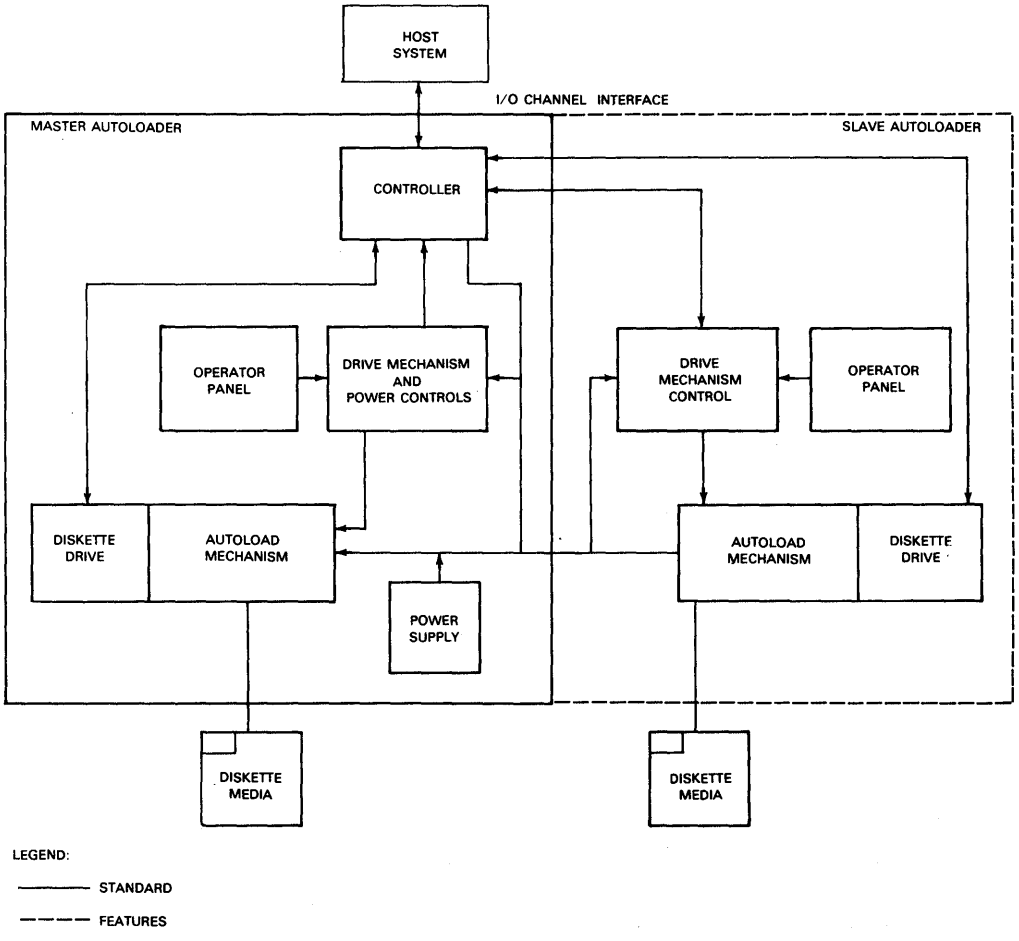


Figure 2–1. Block Diagram of 8407 Diskette Drive Functions

2.1.1. Controller

The controller comprises a microprocessor using integrated circuits, a 4K x 32-bit control store (PROM), and a 1K x 8-bit read/write (RAM) memory. There are 256 bytes of RAM for a working area, with the remaining 768 bytes used for record buffers.

2.1.2. Diskette Drive

The diskette drive uses the standard 8-inch (203 mm) removable and interchangeable diskette storage media. It accepts only one diskette at a time and has two heads that simultaneously come in contact with the diskette media. This permits reading and writing on both sides of the diskette.

2.1.3. Autoloader (Master)

The autoloader hopper can hold up to 20 diskettes, and an indicator informs the operator when the hopper is empty. The stacker also has a capacity of 20 diskettes, with an indicator informing when the stacker is full.

Diskettes are fed from the hopper one at a time, beginning with the one nearest to the mechanism. A mechanical picker technique is used to feed diskettes from the hopper and into the drive. When the next diskette is to be used, the mechanism unloads the diskette currently in the drive and feeds it into the stacker. The next diskette is fed from the hopper and into the mechanism. Time required to eject the current diskette and load the next is 5.5 (+ 0.5) seconds.

2.1.4. Diskette Media

Diskettes are magnetic storage media enclosed in a jacket. One version allows recording on only one side, while another version allows both sides for recording. The diskette recording is divided into 77 tracks, with track 00, located in the outermost position, reserved for labels. The remaining 76 tracks store data. Tracks 75 and 76 are used as alternate data tracks when other tracks are defective. Additional information on the diskette format is contained in the 8407 diskette drive reference, UP-8921 (current version).

2.1.5. Operations Control

→ Two panels contain all the controls and indicators for operating the drive. These are the operator control panel and the power control panel. The operator control panel is located on top of the cabinet, and the power control panel is located inside the cabinet.

Operation of the drive is initiated by controls used by the operator. After this operation begins, the drive continues operation by program control supplied by the host system. When necessary, operator intervention is accomplished by use of the operator controls.

2.1.6. Autoloader Expansion (Slave)

An additional autoloader and drive may be optionally included. The second autoloader and drive is contained in its own cabinet and is controlled by the controller logics and power supplies located in the master autoloader. Each unit can operate independently via programming or the separate operator control panels.

2.2. SOFTWARE CONTROL

Communication between the drive and the host system is accomplished with the drive controller. The 8407–00/01 drive is assigned a device address that is set by switches on the controller by the Sperry customer engineer. Status and sense bytes are supplied by the drive, through the controller, to the host system during operations (refer to 8407 diskette drive reference, UP-8921). The 8407–04/05 drive has a fixed device address of 1 for the master and 2 for the slave.

3. Controls and Indicators

The controls and indicators for the 8407 diskette drive are located on the operator control panel and power control panel. During use, the operator observes conditions of the indicators on the operator control panel to monitor conditions in the drive unit.

3.1. OPERATOR CONTROL PANEL

The operator control panel (Figure 3–1) is located on top of the cabinet. None of the controls and indicators are functional unless main power is first applied on the power control panel. The controls and indicators for the operator control panel are listed and described in Table 3–1.

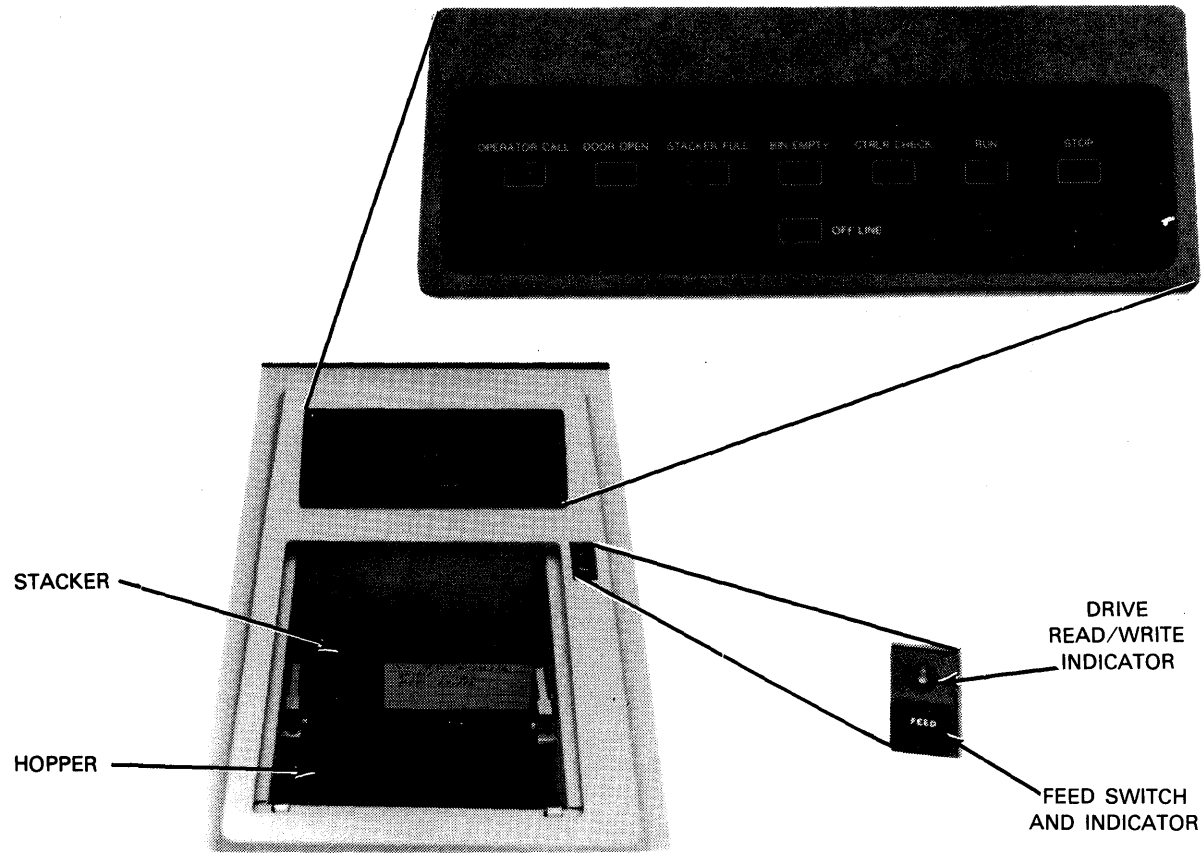


Figure 3—1. Operator Control Panel

Table 3—1. Operator Control Panel, Controls and Indicators

Control/Indicator	Function
OPERATOR CALL indicator	Indicates when a malfunction or jam occurs in the feeding mechanism
DOOR OPEN indicator	Indicates a cabinet door or top cover is open and ac power to mechanism motors is disconnected
STACKER FULL indicator	Indicates when the stacker has received its maximum capacity of 20 diskettes and needs to be emptied
BIN EMPTY indicator	Indicates when the final diskette is fed from the hopper and needs additional (up to 20) diskettes
CTRLR CHECK indicator	When lit, indicates: 1. power-on confidence test failed; 2. microprocessor check failed; 3. over-temperature condition exists; or 4. voltage check failed. Conditions 3 and 4 have their own indicators on the front of the power control panel and are cleared by using the power RESET pushbutton at the power control panel. If any condition persists (cannot be cleared), call your Sperry customer engineer.
RUN switch with indicator	Places drive unit in run condition awaiting commands from the host. The indicator is lit when in the run condition.
STOP switch with indicator	Places drive unit in stop condition in which the mechanism stops operating and commands from the host system are not accepted. Pressing the STOP switch also causes all indicators to light, providing a lamp test.
OFF LINE indicator	Indicates that: (1) the drive is switched to offline mode, which blocks software control from the host system; or (2) the power-on-confidence test failed. Offline operations may be performed without the host system.
FEED switch and indicator (on top cover)	Momentary switch that allows the operator to load or unload a diskette manually through the mechanism. The drive must be in stop mode for this method of operation. The FEED indicator is lit during mechanism cycling.
Drive read/write indicator	When lit, indicates that a read or write operation is in progress

3.2. POWER CONTROL PANEL

The power control panel (Figure 3–2) is located only in the master autoloader and is accessed by opening the front cabinet door. The operator is required to turn on and turn off main power to the drive unit from the power control panel.

The single power control panel serves both the main autoloader and diskette drive and, if included with the drive, an auxiliary autoloader diskette drive. Table 3–2 lists and describes the controls and indicators on the power control panel.

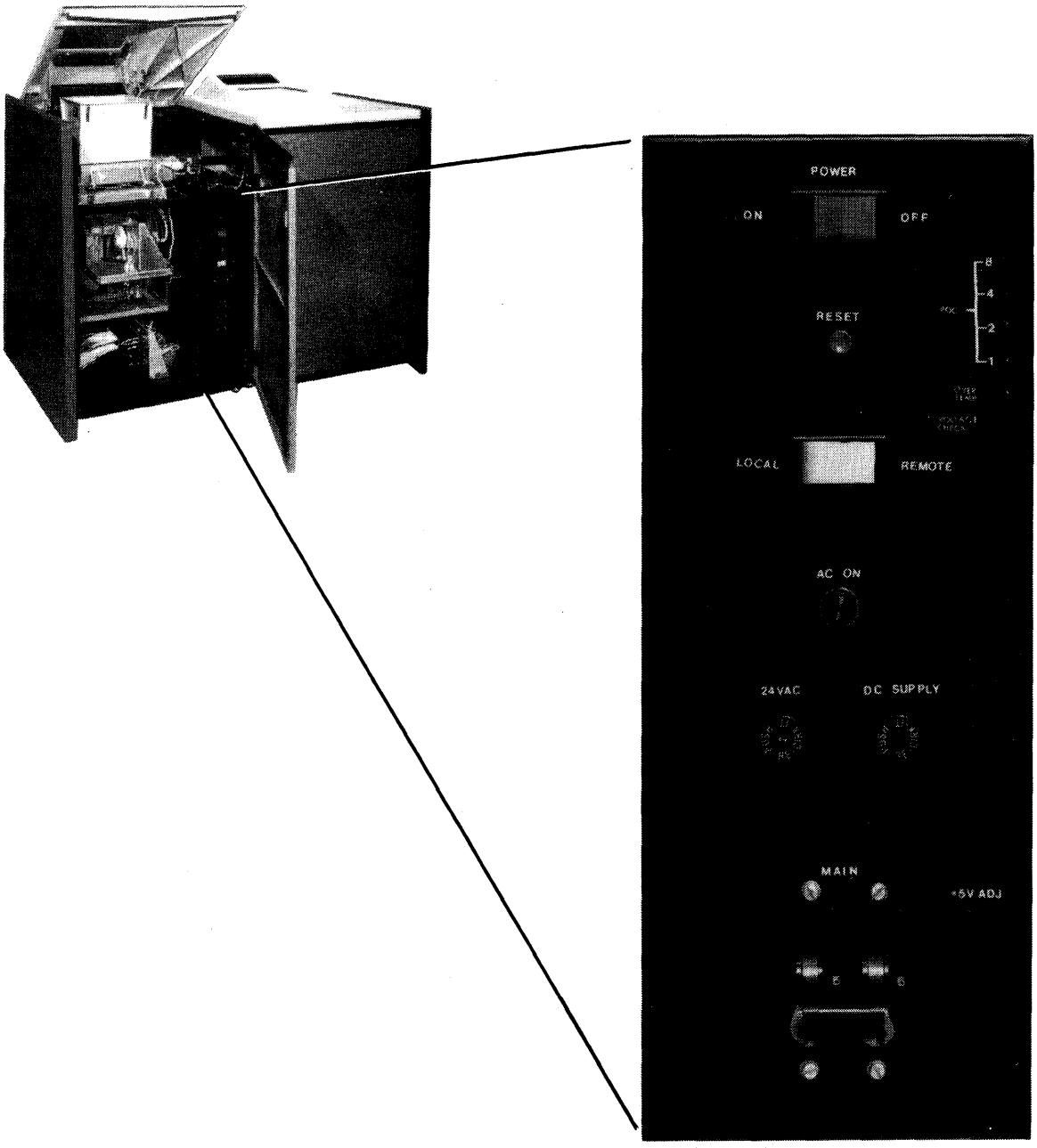


Figure 3—2. Power Control Panel

Table 3—2. Power Control Panel, Controls and Indicators (Part 1 of 2)

<table>
<tr><th>Control/Indicator</th><th>Function</th></tr>
<tr><td>MAIN POWER toggle circuit breaker</td><td>Applies main primary power to the drive unit when set to ON (up) position. The AC ON indicator is lit when power is on.</td></tr>
<tr><td>24 VAC pushbutton circuit breaker</td><td>Protects 24 Vac control circuits from excessive current. Circuit breaker pops out when current overload occurs and is reset by pushing it in.</td></tr>
<tr><td>DC SUPPLY pushbutton circuit breaker</td><td>Protects power supply circuits from excessive current. Circuit breaker pops out when current overload occurs and is reset by pushing it in.</td></tr>
<tr><td>AC ON indicator</td><td>Lights when primary ac power is applied to the drive unit with the MAIN BREAKER circuit breaker</td></tr>
<tr><td>LOCAL/REMOTE rocker switch</td><td>Allows selection of power turn-on control from the subsystem or from the host system.
■ LOCAL position allows power to the subsystem to be turned on when the POWER ON/OFF switch is set to ON position.
■ REMOTE position allows power turn-on sequence to be controlled from the host system. The POWER ON switch must first be set to ON position before host control can occur.</td></tr>
<tr><td>RESET pushbutton switch</td><td>Allows power turn-on circuits to be reset if operating temperature within the drive cabinet is returned to normal, allowing dc power to sequence up. Over-temperature and out-of-tolerance dc voltage conditions light the CTRLR CHECK indicator on the operator control panel. If a proper power reset occurs, the CTRLR CHECK indicator extinguishes.</td></tr>
<tr><td>POWER ON/OFF rocker switch</td><td>Turns on operating power supply to the drive unit after MAIN BREAKER circuit breaker is ON and power control source is selected. When switch is set to OFF, the power supply is totally disconnected from the drive.
<table>
<tr><th rowspan="2">POWER ON/OFF Switch</th><th colspan="2">Indicator</th><th rowspan="2">Condition</th></tr>
<tr><th>VOLTAGE CHECK</th><th>OVERTEMP</th></tr>
<tr><td>OFF</td><td>●</td><td>●</td><td>Normal</td></tr>
<tr><td>ON</td><td>●</td><td>●</td><td>Over-temperature condition</td></tr>
<tr><td>ON</td><td>●</td><td>o</td><td>Power supply voltage abnormal</td></tr>
<tr><td>ON</td><td>o</td><td>●</td><td>Internal cabinet temperature abnormal</td></tr>
<tr><td>ON</td><td>o</td><td>o</td><td>Normal</td></tr>
</table>
● Indicator on
o Indicator off</td></tr>
</table>

Table 3–2. Power Control Panel, Controls and Indicators (Part 2 of 2)

Control/Indicator	Function
POC indicators	Four light-emitting diode lamps indicate the status of the power-on-confidence test. All indicators light when the power-on-confidence test has been performed successfully.
OVER TEMP indicator	Lights when the drive's normal internal operating temperature has been exceeded. Also lights when POWER ON/OFF switch is in OFF position.
VOLTAGE CHECK indicator	Lights when the system fails to attain or maintain proper drive operating voltage and when the POWER ON/OFF switch is in OFF position.

4. Operation

4.1. POWER TURN ON/TURN OFF

Power configuration to the 8407 diskette drive may optionally be connected via an external power cord attachment (above floor installation) or hardwired via power conduit (with a false floor installation). The Sperry customer engineer selects the proper internal transformer taps to accommodate the available power rating.

Power turn on may be controlled locally at the drive unit or remotely at the host system. Local power turn on is usually confined to Sperry customer engineers when maintenance is required. Normally, power is turned on remotely at the host system so that automatic power sequencing circuits can apply power to individual peripheral devices in a sequence that avoids power transient problems in the host system power lines.

4.1.1. Turn-On Procedure

Normal power turn on is performed at the host system after initial power is turned on at the diskette drive. Each time power is turned on, a resident diagnostic microprogram in the drive is executed. Power turn on/off at the master autoloader also applies power to the slave autoloader (if a slave autoloader is included with the drive). Turn-on procedures controlled by the host system (remote) and local system are described in 4.1.1.1 and 4.1.1.2.

4.1.1.1. Remote Power Control

To turn on initial power for the diskette subsystem so that power on/off is controlled by the host system, proceed as follows:

1. Check that the remote power interface cable from the host system is connected to a connector provided at the rear of the drive cabinet on the power control chassis.

2. Set the MAIN POWER circuit breaker on the power control panel (Figure 3–2) to the ON (up) position. Note that the AC ON indicator on the power control panel lights.

3. Set the LOCAL/REMOTE switch on the power control panel to REMOTE position.

4. Set the POWER ON/OFF switch on the power control panel to ON position and then close all cabinet doors on the drive.

5. Turn on power at the host system.

6. Press the FEED switch on the operator control panel (Figure 3–1). This moves a diskette into the disk drive.

7. Press the RUN switch on the subsystem operator control panel and note that the RUN indicator lights. The drive unit initial power is now turned on and the drive is ready to receive commands from the host system.

4.1.1.2. Local Power Control

In some circumstances, it may be necessary to have power turn on controlled at the drive instead of at the host. To turn on initial power for the diskette drive so that power on/off is controlled at the drive, proceed as follows:

1. Perform step 2 of 4.1.1.1.

2. Set the LOCAL/REMOTE switch on the power control panel to LOCAL position.

3. Set the POWER ON/OFF switch on the power control panel to ON position. The drive unit power is now turned on and can operate with the host system. Perform steps 4, 5, 6, and 7 of 4.1.1.1.

NOTE:

If the drive unit is to be switched back to remote power control with the LOCAL/REMOTE switch moved to REMOTE position, the RESET pushbutton switch on the power control panel (Figure 3–3) must be pressed to reset the power sequencing circuits.

4.1.2. Turn-Off Procedure

Power turn off for the 8407 diskette drive unit is normally controlled at the host system with the LOCAL/REMOTE switch set to REMOTE position. However, if power is to be turned off at the drive due to other reasons, proceed as follows:

1. Set the POWER ON/OFF switch on the power control panel to OFF position. This setting aborts any attempt to turn on the drive either remotely or locally.

2. Set the MAIN POWER circuit breaker on the power control panel to the OFF (down) position. This turns off all primary power to the drive.

4.2. DISKETTE DRIVE OPERATION

A few precautions when handling diskette media assure long, trouble-free operation:

- Writing pressure may damage the diskette; therefore, avoid writing on the diskette envelope.
- Do not bend or attach paper clips to the diskette.
- Do not clean or touch the diskette surface.
- Replace the diskette into its protective envelope when it is removed from the diskette drive.
- If the diskette envelope is torn or bent out of shape, replace the envelope.
- Avoid placing diskettes near excess heat or storing them in direct sunlight.
- Be careful to avoid placing the diskette near any magnetic object or near any magnetic field.

4.2.1. Autoload Diskette Drive

Operation of the autoload diskette drive is simplified because the operator loads the diskette media and removes all diskettes upon completion. Each diskette is automatically loaded into the drive mechanism when a command is sent from the processor. However, occasions may arise when a diskette becomes jammed in the drive mechanism. The operator is responsible for clearing the jam.

4.2.1.1. Normal Operation

To operate an autoload diskette drive, proceed as follows:

1. Install the diskette media into the hopper with all labels facing the operator and the jacket slot of each diskette at the bottom (Figure 4–1a). Diskettes must be placed in proper sequence in the hopper so that the first diskette is nearest to the drive mechanism and the last is nearest to the hopper front (toward the operator).

2. When diskettes are in the hopper, pat them down so they are all even and the leading diskette is beneath the retainers and behind the keepers on each side as well as top and bottom of the hopper (Figure 4–1b).

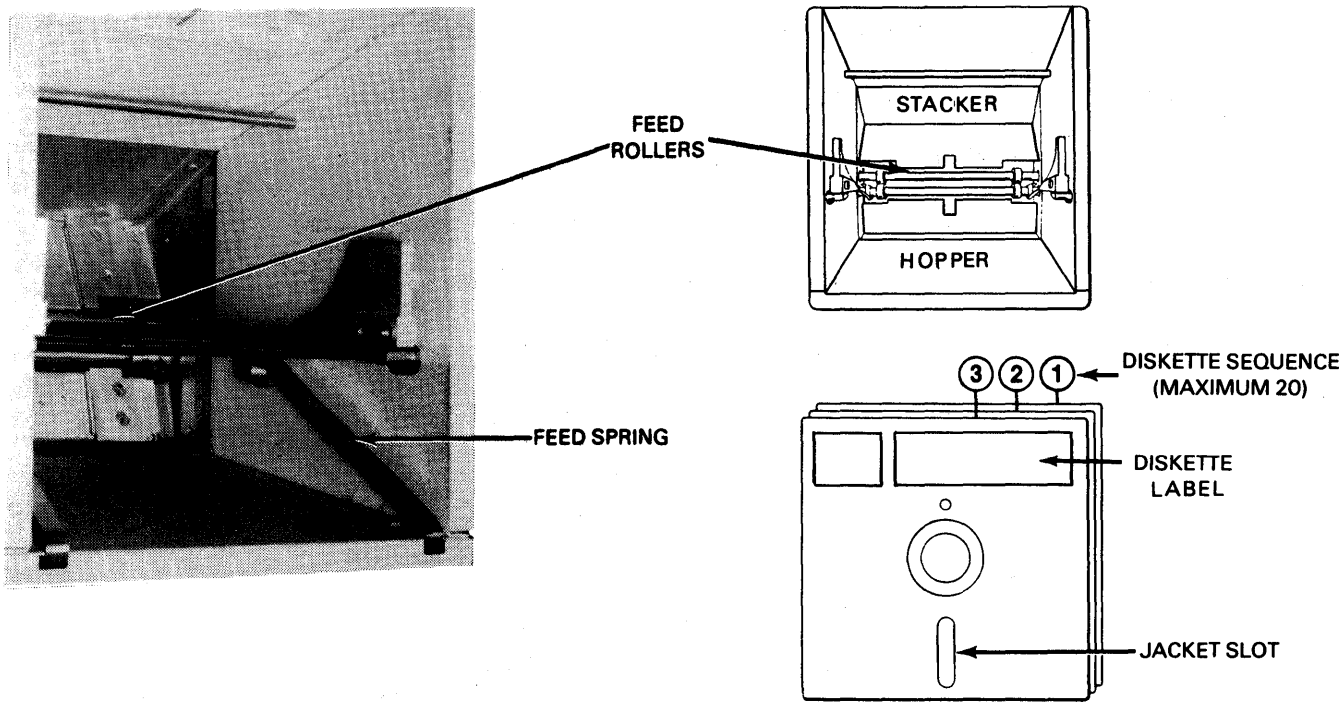
   NOTE:

   The hopper and stacker each have a capacity of 20 diskettes. An empty hopper sensor or full stacker sensor halts operation when either of these conditions exists.

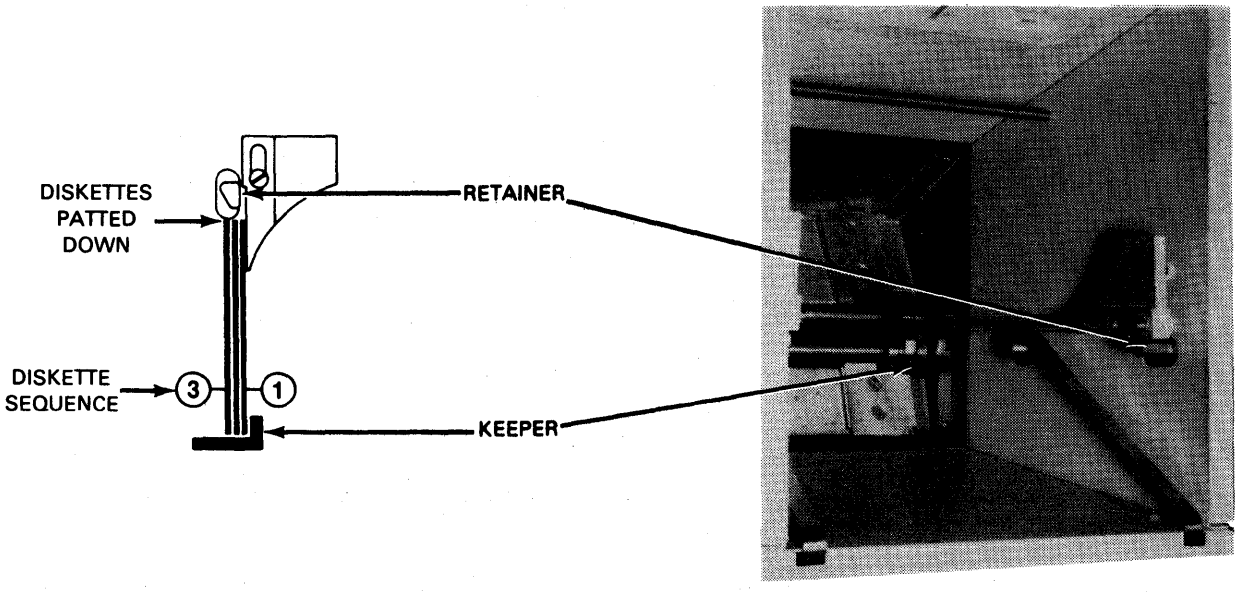
3. Press the bottom of the diskettes against the keepers at the bottom and on each side of the hopper (Figure 4–1b).

   NOTE:

   When properly inserted, diskettes are pressed against the keepers by a feed spring in the hopper. If diskettes are not adjacent to the keepers, the hopper-empty sensor does not engage and diskettes do not feed into the feed rollers.



a. Hopper/stacker bin and diskette sequence



b. Diskettes properly in place

Figure 4—1. Autoload Diskette Drive Operation

4.2.1.2. Suspended Operation

The FEED indicator remains lit if autoload operation does not complete successfully. The autoload operation may be suspended if:

- A diskette jam occurred because:

  1. A diskette did not load fully into the drive mechanism and is detected by the jam sensor.

  2. After a diskette is loaded into the drive mechanism, a second diskette becomes partly loaded into the drive and is detected by the jam sensor.

  3. When an unload cycle is initiated, the diskette remains in the drive and fails to engage the exit rollers.

  4. Upon completion of an unload cycle, a diskette does not completely eject from the exit rollers and is detected by the jam sensor.

- The diskette drive did not reach the ready condition because:

  1. A diskette does not load into the drive mechanism.

  2. A diskette was incorrectly loaded into the hopper and is oriented in the wrong direction for loading into the drive mechanism.

  3. A defect has occurred in the drive mechanism, such as the motor is not turning, the belt slipped off the pulley, or a light-emitting diode is defective. These problems are corrected by your Sperry customer engineer.

- The hopper is empty. If a feed cycle is completed when the hopper is empty, the diskette currently in the drive mechanism is unloaded and the FEED indicator remains lit.

4.2.1.3. Clearing Jams

A diskette may be jammed in the feed rollers or reader mechanism – or in both. Proceed as follows to correct either of these jams:

1. Remove all diskettes from the hopper and stacker, but keep each diskette group separated to allow continuation of the operation when the jam is cleared.

2. Raise the top cover and open the front cabinet door (Figure 4–2a).

   NOTE:

   AC power is removed from the diskette drive when the top cover is raised. DC power is still on. ←

3. Tilt the hopper/stacker bin forward and allow it to rest on the cabinet (Figure 4–2b).

4. Note the location of the jammed diskette (Figure 4-2c) and select either of the following procedures:

CAUTION

If one diskette is jammed in the feed rollers and another in the reader mechanism (Figure 4—2c), remove the diskette from the feed rollers first. Otherwise, the diskette in the feed rollers may be damaged when the one in the reader mechanism is removed.

a. A feed roller jam is cleared as follows:

(1) While holding both ends of the diskette (Figure 4-2d), carefully pull it evenly through the bottom of the feed rollers.

(2) Examine the diskette jacket for wrinkles or tears. If necessary, replace the diskette as directed in 4.2.2. A wrinkled or torn jacket may prevent proper feeding into the reader mechanism.

(3) Proceed to step 5 if only a feed roller jam occurred. Otherwise, continue with clearing a jam in the reader mechanism.

b. A reader mechanism jam is cleared as follows:

(1) Turn the cam drive motor shaft (Figure 4-2b) manually until the reader door opens.

(2) Lift out the diskette from the reader mechanism (Figure 4-2e) and examine the diskette jacket for wrinkles or tears. Replace the diskette as directed in 4.2.2, if necessary.

5. Raise the hopper/stacker bin to its operating position (Figure 4-2a).

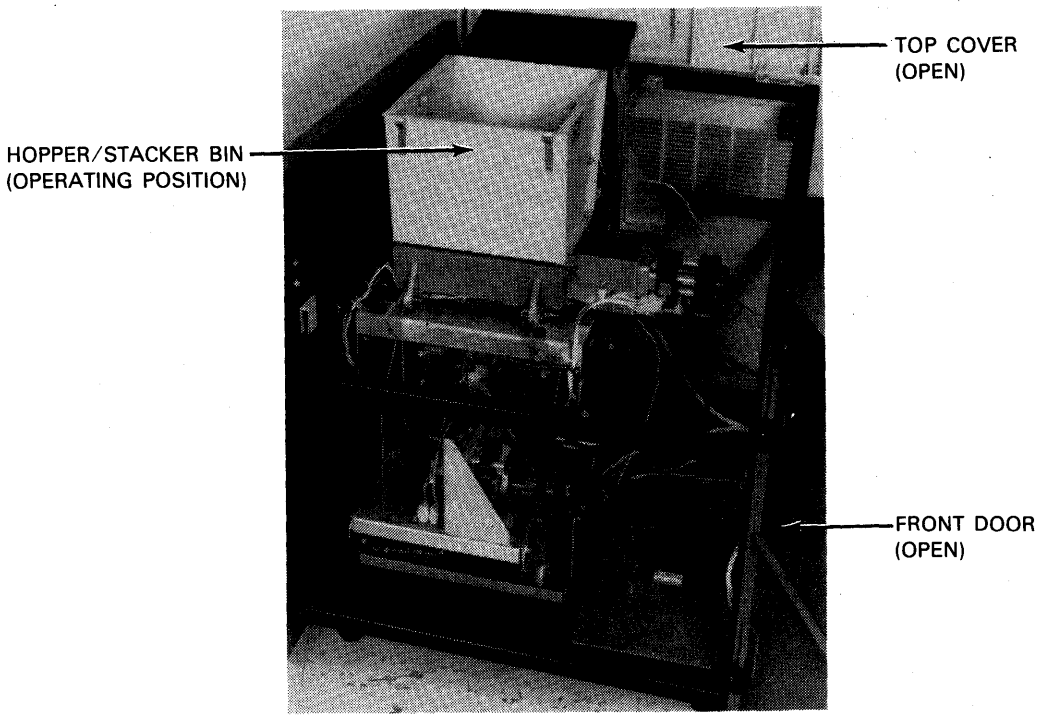
6. Close the front cabinet door and then the top cover. The diskette drive recycles to home position when the door interlocks are engaged and power is restored.

7. Place the jammed diskettes in proper sequence with diskettes removed from the hopper.

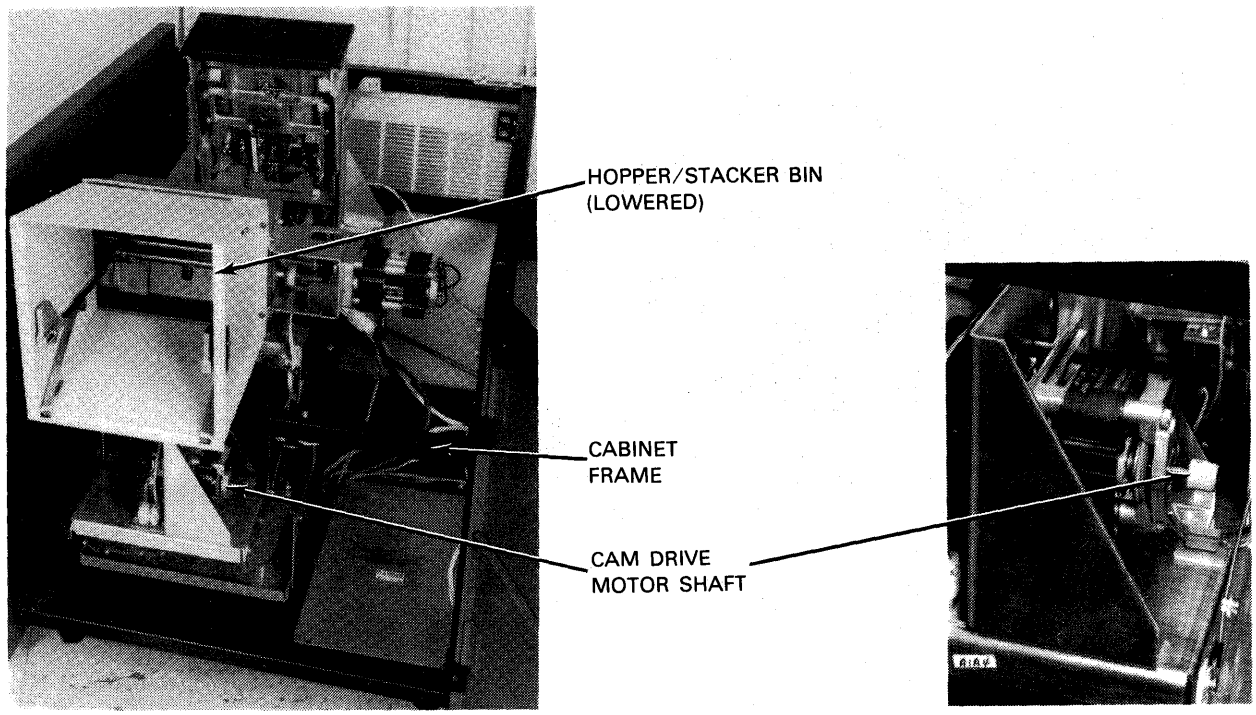
NOTE:

When a dual jam occurs, the diskette removed from the reader mechanism precedes the one removed from the feed rollers.

8. Replace the diskettes removed from the hopper and stacker (step 1) into the hopper/stacker bin and resume operation.

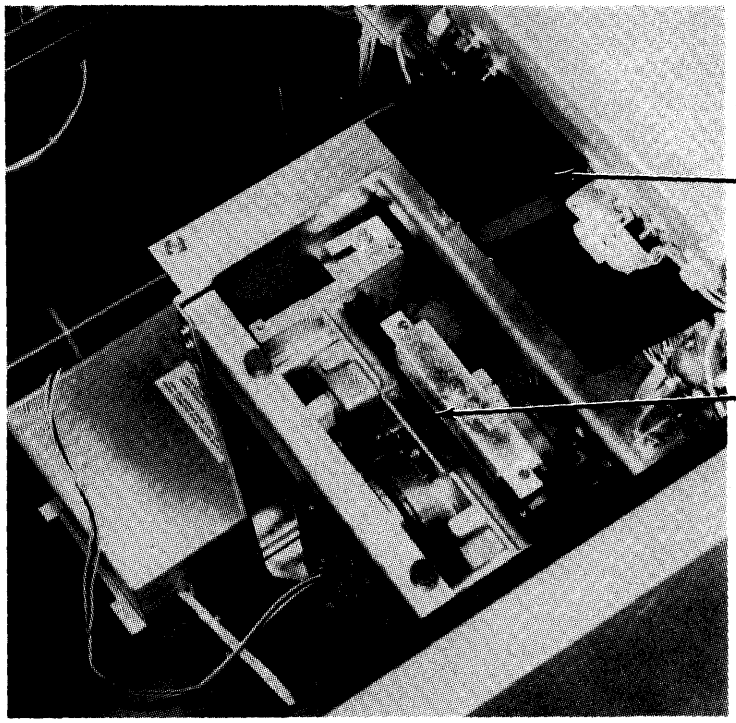


a. Diskette media removed and cabinet doors open

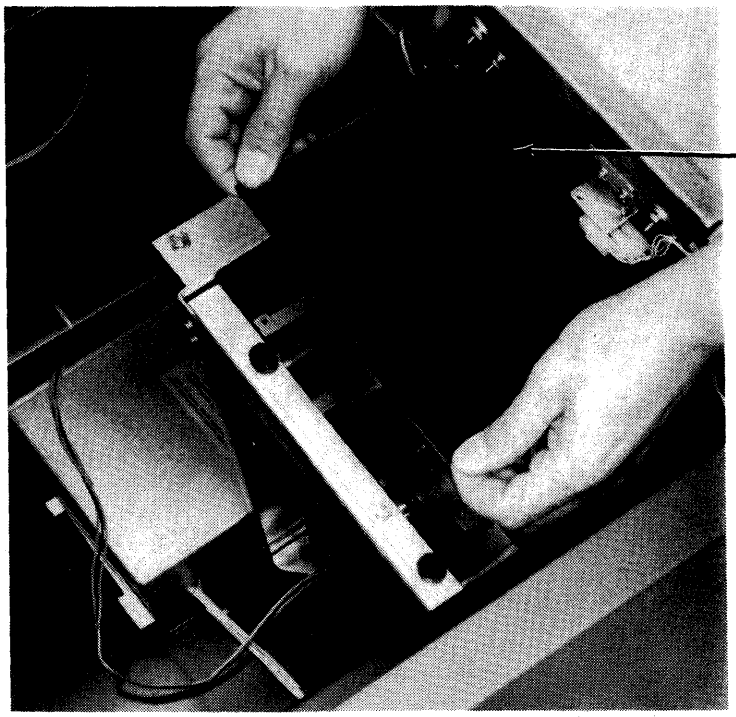


b. Hopper/stacker bin lowered to access jammed diskette

Figure 4—2. Clearing Jams in Autoload Diskette Drive (Part 1 of 3)

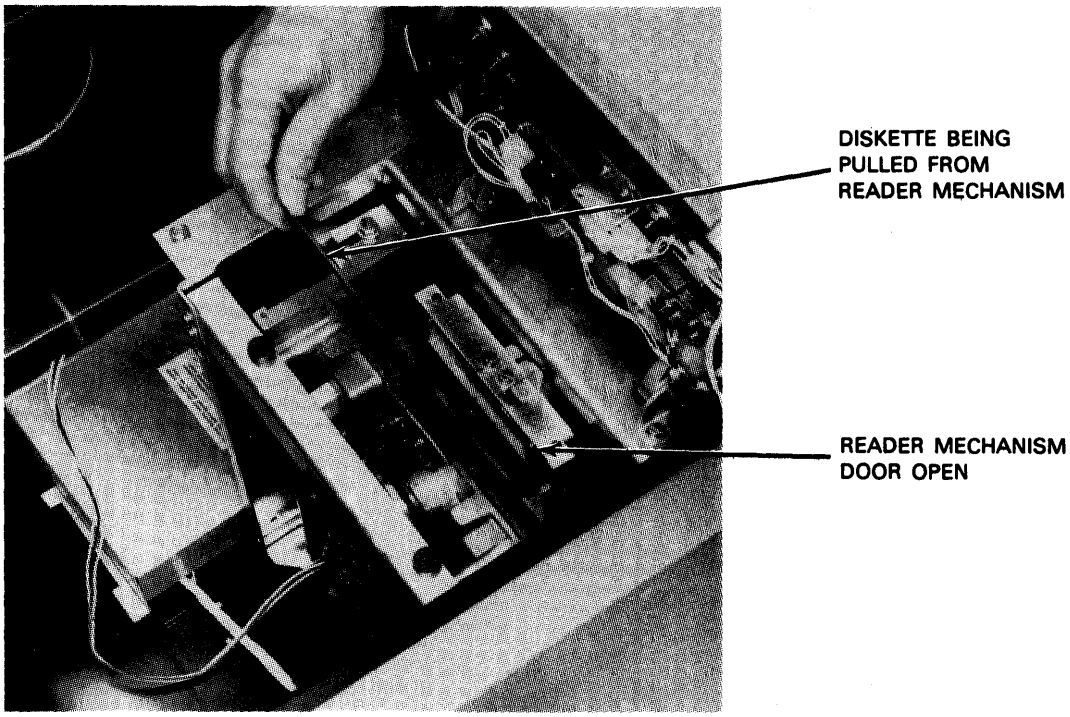


c. Jammed diskettes in feed rollers and reader mechanism



d. Removing jammed diskette from feed rollers

Figure 4—2. Clearing Jams in Autoload Diskette Drive (Part 2 of 3)



e. Removing jammed diskette from reader mechanism

Figure 4—2. Clearing Jams in Autoload Diskette Drive (Part 3 of 3)

4.2.2. Replacing Damaged Diskette

Diskettes are replaced with a new diskette when the diskette jacket is wrinkled or torn or the diskette is bent. Operating with a damaged diskette in the autoload diskette drive can cause a diskette jam because the diskette does not feed properly through the hopper or may not enter the reader mechanism during an autoload cycle. Proceed as follows to replace a damaged diskette:

1. Straighten the jacket wrinkle or bend as straight as possible without cracking the diskette. If the jacket is torn, carefully tape the loose ends together without allowing adhesive on the tape to contact the diskette. Use additional paper fragments, if necessary.

CAUTION

If adhesive on patching tape sticks to diskette, the diskette will not turn during operation and may overload and damage the diskette drive motor. Check that the diskette moves freely within its jacket after repairing a damaged jacket.

2. Insert the damaged diskette into a manual diskette drive.

3. Read out the contents of the damaged diskette into a buffer or storage device.

4. Remove the damaged diskette from the manual diskette drive.

5. Insert a new unused diskette into the manual diskette drive.

6. Write out the contents in storage onto the new diskette.

7. Remove the diskette from the manual diskette drive.

8. Mark the diskette jacket of the new diskette with the same designations noted on the old diskette.

9. Place the new diskette in the same sequence location of the pack from which the damaged diskette was removed. Check for proper operation and readout of the new diskette and then discard the old diskette.

4.2.3. Cleaning Diskette Heads

The operator is required to periodically clean the read/write heads on diskette drives. Cleaning should be performed routinely each month or more often if read error rates are abnormally high.

Head cleaning is performed with cleaning diskettes that have been provided with the system. Two cleaning diskettes are provided with each kit. The kit can also be obtained from your Sperry sales representative, using Sperry part number 2893177–00. Kits can also be obtained from:

Innovative Computer Products
Tarzana, California 91356
(part number FD–08)

Proceed as follows to clean the diskette read/write heads:

1. Obtain the special cleaning diskette and remove the perforated tab on the diskette jacket to clean the dual read/write heads (read/write on both sides of diskette).

2. Using the cleaning solution provided with the kit, dispense a fair amount of solution through the large cutouts on both sides of the jacket onto the cleaning material inside the jacket.

CAUTION

The cleaning material should be saturated, but not excessively enough to cause the cleaning solution to drip inside the machine.

3. Remove all diskettes from the hopper/stacker bin. Separate hopper diskettes from those in the stacker to return to proper sequence after cleaning is complete.

4. Install the cleaning diskette in the hopper with the jacket slot at the bottom (Figure 4–1a). Be sure that the top of the diskette is beneath the retainers on each side of the hopper (Figure 4–1b) and the bottom of the diskette is against the keepers.

5. Press the FEED switch on the top cover to allow the cleaning diskette to enter the reader mechanism.

6. Perform the diskette diagnostic routine from the console workstation keyboard, as directed in the operator maintenance guide. (current version). Allow the diskette to operate in the reader mechanism for 15 to 30 seconds.

7. Press the FEED switch on the diskette drive to unload the cleaning diskette from the reader mechanism.

8. Remove the cleaning diskette from the stacker. Mark the diskette jacket to indicate that cleaning has been performed.

9. Replace the diskettes that were removed in step 3; that is, put them back into the hopper/stacker bin. Be sure to maintain the proper sequence in the hopper and stacker.

NOTE:

Each cleaning diskette may be reused for further cleaning until it becomes discolored, or for approximately 15 diskette cleanings.

4.3. OPERATIONS RECOVERY

The operator is provided with a variety of indicators that guide toward rapid correction of operating errors. Table 4-1 lists the indications that should be observed by the operator when the subsystem malfunctions, along with suggested remedies that may restore normal operation.

Table 4—1. Operations Recovery (Part 1 of 2)

Indication*	Probable Cause and Recovery Procedure
OPERATOR CALL	A diskette may be jammed in the diskette drive mechanism. Clear the jammed diskette as directed in 4.3.
DOOR OPEN	A cabinet door is not fully closed. Check the back cabinet door. Check that the top cover is closed after the front cabinet door is closed.
STACKER FULL	Twenty diskettes have accumulated in the stacker. Remove the diskettes.
BIN EMPTY	All diskettes in the hopper have passed to the stacker. Load additional diskettes into the hopper if the job is to continue.

*Operator control panel indicator is lit.

Table 4—1. Operations Recovery (Part 2 of 2)

Indication*	Probable Cause and Recovery Procedure
CTRLR CHECK	A controller check condition occurred. Proceed as follows: 1. Open the front cabinet door and note the indicator conditions as follows: a. VOLTAGE CHECK indicator lit. Press DC SUPPLY and 24 VAC pushbutton circuit breakers and then press RESET switch. (Note whether CTRLR CHECK indicator on operator control panel extinguishes.) b. OVER TEMP indicator lit. Open top cover and front and rear cabinet doors to allow subsystem to cool to normal operating temperature. Set the MAIN POWER circuit breaker to OFF. Check to determine that the air inlet opening at the bottom of the frame is free of foreign matter. After a cooling period, set the MAIN POWER circuit breaker to on and then press the RESET switch on the power control panel. Note whether the CTRLR CHECK indicator on the operator control panel extinguishes. c. If the VOLTAGE CHECK and OVER TEMP indicators are not lit: perform a system reset procedure, or, using the POWER ON/OFF switch, turn power to the drive off, then on. 2. If CTRLR CHECK indicator is now extinguished: a. close all doors and covers; b. ensure that diskette is in disk drive; and c. press the RUN switch on the operator control panel. NOTE: If the CTRLR CHECK indicator remains lit after performing the recommended procedures, contact the Sperry customer engineer and describe all the abnormal indications noted on the subsystem.
STOP	The drive has been placed in stop mode. Ensure that diskette is in disk drive then press the RUN switch on the operator control panel. Note that the RUN indicator lights. If it does not, check further malfunction indications described in this table.
OFF LINE	The subsystem cannot accept commands from the host system. The power-on-confidence tests were not successfully completed during the power-up cycle.
All indicators on operator control panel are extinguished.	Circuit breaker is tripped or power is turned off. Proceed as follows: 1. Check that MAIN POWER circuit breaker is in ON position. 2. Press and release the 24 VAC and DC SUPPLY pushbutton circuit breakers on the power control panel. Verify the position of the POWER ON/OFF and LOCAL/REMOTE switches. 3. Turn on power as directed in 4.1.1.1 for remote power control and note that the STOP indicator lights on operator control panel while all other indicators are extinguished. **CAUTION** *If power turns off again after it has been turned on, leave all switch settings intact and contact the Sperry customer engineer. Do not attempt to operate the drive when a circuit breaker trips or any other malfunction causes power cutoff after the preceding procedures were followed. Damage may result to the subsystem.*

*Operator control panel indicator is lit.

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