HOTEL BILLING INFORMATION SYSTEM/CENTRALIZED CREDIT REFUND SYSTEM (HOBIS/CCRS)

ROUTINE OPERATING PROCEDURES FOR GENERICS 1 AND 2

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1. GENERAL

1.01 This section provides operating procedures for the Hotel Billing Information System/ Centralized Credit Refund System (HOBIS/CCRS) equipment.

1.02 This section is reissued to add preventive maintenance procedures. Revision arrows are used to emphasize the more significant changes. Equipment Test Lists are not affected.

1.03 Before any of the procedures in this section are performed, a release of the HOBIS/CCRS equipment should be obtained from the traffic department.

1.04 Refer to Section 201-903-301 for emergency action procedures and Section 201-903-303 for trouble sectionalizing procedures associated with HOBIS/CCRS equipment.

1.05 ***Lettered Steps:*** A letter a, b, c, etc, added to a step number in Parts 4 through 7, 9, and 10 of this section indicates a procedure which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the PROCEDURE column, and all steps governed by the same condition are designated by the same letter within a procedure. Where a condition does not apply, all steps designated by that letter should be omitted.

2. HANDLING MAGNETIC TAPE—PRECAUTIONS

2.01 The following are magnetic tape precautions:

(a) Always handle a tape reel by the hub hole. Squeezing the reel flanges can cause damage to the tape edges when winding or unwinding tape.

(b) Never touch the portion of tape between the beginning of tape (BOT) and end of tape (EOT) markers. Oils from fingers attract dust and dirt. Do not allow the end of the tape to drag on the floor.

(c) Never use a contaminated reel of tape. This spreads dirt to clean tape reels and can affect tape transport operation.

(d) Always store tape reels inside their containers. Keep empty containers closed so that dirt cannot get inside.

(e) Inspect tapes, reels, and containers for dust and dirt. Replace take-up reels that are old or damaged.

(f) Do not smoke near the transport or tape storage area. Tobacco smoke and ash are especially damaging to tape.

(g) Do not place the DEC magtape near a line printer or other device that produces paper dust.

(h) Clean the tape path frequently (see appropriate magtape documentation).

(i) Do not jerk the reel when winding tape by hand. This can distort or compress the tape on the reel and damage the tape.

3. ▶PREVENTIVE MAINTENANCE (PM) PROCEDURES

Note 1: Portions of these procedures have been reproduced from DEC's Site Management Guide with the permission of Digital Equipment Corporation.

Note 2: The customer should verify that the PM procedures are done in occurrence with this specification to ensure proper operation of the hardware.

3.01 The following PM procedures performed on the system should be performed quarterly:

(a) Clean air filters.

(b) Clean air vents and check fans.

(c) Clean exterior and interior of equipment.

(d) Check system-to-earth ground.

(e) Check ground between cabinets.

(f) Check module security.

(g) Check system cables for damage.

(h) Check backplanes for damage.

(i) Check for proper system cooling.

(j) Perform scheduled device PM procedures.

(k) Run system exerciser.

3.02 The PM procedure for the H745 regulator should be performed annually. The only PM required is to check for −15 Vdc voltage at J1-1 (ground J1-2 or J1-3). The measurement should be −15 ±0.75V 10A. If not, adjust R9.

3.03 The PM procedure for the H744 regulator should be performed annually. The only PM required is to check for +5 Vdc voltage at J1-2 or J1-5 (ground J1-3 or J1-4). The measurement should be +5 ±0.25V 25A. If not, adjust R14.

3.04 The following PM procedures for the DH11 multiplexer should be performed quarterly:

(a) Run DH11 Tx and Rx diagnostic (MAINDEC [MD]-11-DZDHC). The test point is SA:200 SR=0. The diagnostic should pass on first run.

(b) Run DH11 character and data test (MD-11-DZDHE). The test point is SA:200 SR=0. The diagnostic should pass on first run.

3.05 The following are the semiannual PM procedures for the DH11 multiplexer:

(a) Check for +5 Vdc to DH11 distribution panel at B04A2 (A04C2) to ground. The measurement should be +5 ±0.2 Vdc.

(b) Check for +15 Vdc to DH11 distribution panel at B04N2 to ground. The measurement should be +15 ±0.5 Vdc.

(c) Check for −15 Vdc to DH11 distribution panel at B04B2 to ground. The measurement should be −15 ±0.5 Vdc.

3.06 The PM procedure for the DZ11 multiplexer should be performed quarterly (based on Field Service Representative's experience).

3.07 The following PM procedures for the KW11-L line frequency clock should be performed quarterly:

(a) Check the LTC signal at D1R1. The measurement should be approximately a 4-volt signal for a 16.7 ms period.

(b) Run KW11-L clock test (MD-11-DZKWA). The test point is SA:200. The diagnostic should pass on first run.

3.08 The following PM procedures for the RP05/RP06 disk drive should be performed quarterly:

(a) Perform basic inspection.

(b) Check access cover.

(c) Clean tracks and stops.

(d) Check shroud area.

(e) Inspect read/write heads.

(f) Replace absolute filter (as needed).

(g) Clean carriage way.

(h) Check drive belt.

(i) Replace drive belt (as needed).

(j) Check pack cover sensor.

(k) Check spindle lock.

(l) Check power supplies.

3.09 The following are the semiannual PM procedures for the RP05/RP06 disk drive:

(a) Replace cams.

(b) Check head alignment.

(c) Align and adjust the heads (only if heads are far out of alignment). If head alignment is done, the generic disk pack should be reformatted by DEC. Hard errors should be checked and then the generic tapes should be loaded by DEC.

(d) Check circumferential alignment.

(e) Adjust tachometer gain.

(f) Run the following diagnostics:

- Diskless part number 1 (MD-11-DZRJG)
- Diskless part number 2 (MD-11-DZRJH)
- Functional controller part number 1 (MD-11-DZRJI)
- Functional controller part number 2 (MD-11-DZRJJ)
- Multidrive diagnostic (MD-11-DZRJD).

3.10 The PM procedures for the TU16, TJU16, or TWU16 magnetic tape should be performed quarterly or semiannually. The PM for TU16, TJU16, or TWU16 must be done as scheduled to reduce interfacing problems to the Revenue Accounting Office. The following are the quarterly PM procedures:

(a) Clean tape path and inspect it for wear.

(b) Lubricate and inspect reel hubs.

(c) Clean reel motor brakes.

(d) Check vacuum belt tension. The tension should be 11(+2) pounds.

(e) Check dc balance (R21 on H606) at TP2 on H606. The measurement should be 50-mV ripple (center ripple to 0 ±0.04 Vdc).

(f) Check forward tape speed (R13 on H606) at C4-U1. The measurement should be 56 μs negative pulses.

(g) Check reverse tape motion (R12 on H606) at C4-U1. The measurement should be 55 to 57 μs.

(h) Check forward jitter at C4-U1. The measurement should be less than 6 μs.

(i) Check reverse jitter at C4-U1. The measurement should be less than 6 μs.

(j) Check mechanical skew in forward at E4K1. The measurement should be less than 2.5 μs.

(k) Check mechanical skew in reverse at E4K1. The measurement should be less than 3.5 μs.

(l) Run drive function timer test (MD-11-DZTDU). The diagnostic should pass on first run.

(m) Run data reliability test (MD-11-DZTUA). This should be run for 10 minutes.

3.11 The following are the semiannual PM procedures for the TU16, TJU16, or TWU16 magnetic tape:

(a) Check forward acceleration ramp (−CUR) at P1-7 on H606 (ground TP on H606). The measurement should be a negative slope of 7 to 8 ms.

(b) Check reverse acceleration ramp (+CUR). The measurement should be a positive slope of 7 to 8 ms.

(c) Set up the TFG to perform a write function.

(d) Check industry tape tracking function.

(e) Check erase head function.

(f) Check read amplifier outputs.

(g) Perform residual amplitude check.

(h) Perform reverse amplitude check.

3.12 The following are the annual PM procedures for the TU16, TJU16, or TWU16 magnetic tape.

(a) Remove M8912 (TFG) from slot EF3 and extend it in slot AB3.

(b) Place SSRD, SSWRT, and WRT switches down.

(c) Check +5 Vdc voltage (R16) at D01A2 (red wire). The measurement should be +5.25 ±0.05V with a maximum ripple of 100 mV peak-to-peak (pp).

(d) Check +12 Vdc voltage (R37) at A04V1 (yellow wire). The measurement should be +12.05 ± 0.05V with a maximum ripple of 350 mV pp.

(e) Check −6.4 Vdc voltage (R44) at C04N2 (green wire). The measurement should be −6.35 ±0.05V with a maximum ripple of 200 mV pp.

(f) With S5-9 (M8912) ON, check the +12 Vdc (NRZ) drive voltage (R26) at C02J2 (orange wire). The measurement should be +11.875 ±0.125V with a maximum ripple of 350 mV pp.

(g) With S5-9 OFF, check the +5 Vdc (PE) drive voltage (R57) at C02J2 (orange wire). The measurement should be +5 ±0.1V.

(h) Replace vacuum motor belt. Run for 1 hour then recheck tension. Use a 29-22265 gauge or equivalent to check middle of belt. The tension should be set to 13 ±2 pounds.

3.13 The PM procedures for the H7420 power supply should be performed annually. The following are the annual PM procedures:

(a) Check the +15 Vdc voltage (supplied by upper H7420) at E13A1. The measurement should be +15 ±1.5V with a maximum of 1A.

(b) Check the +8 Vdc voltage (supplied by the upper H7420) at B01B1. The measurement should be +8 ±1.2V with a maximum of 3.4A.

(c) Check the −15 Vdc voltage (supplied by the lower H7420) at E13B2. The measurement should be −15 ±1.5V.

(d) Check the +5 voltage regular slots.

3.14 The PM procedure for the DN11 automatic calling unit interface should be performed quarterly. The only PM required is to run the DN11 dialex diagnostic (MD-11-D9JA). The test point is SA:200. The diagnostic should pass on first run.

4. TU16 MAGTAPE PROCEDURES

4.01 The TU16 magtape unit is shown in Fig. 1. Controls and indicators are shown in Fig. 2 and listed in Table A. Associated with each control or indicator is a description of its function. All controls and indicators are located in a control box mounted to the left of the file reel.

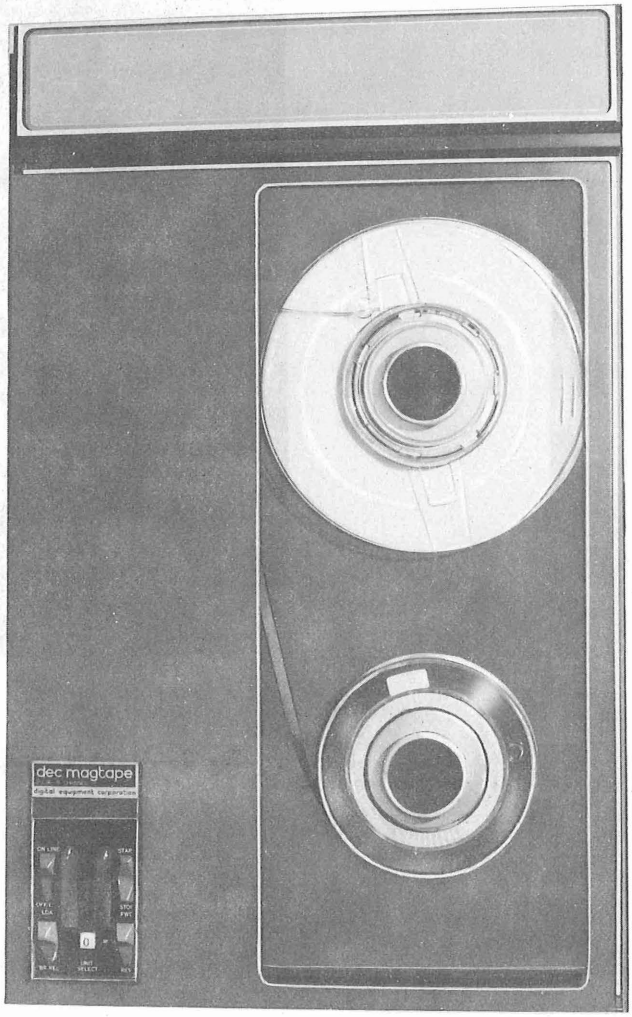

Fig. 1—TU16 Magtape Unit

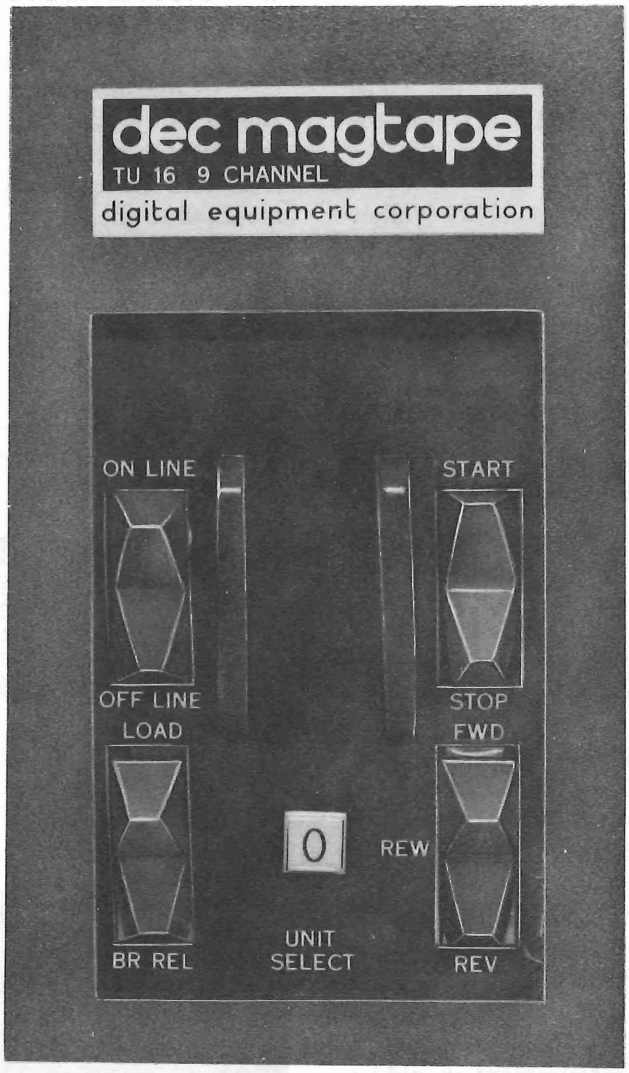

Fig. 2—TU16 Magtape Controls and Indicators

TABLE A

TU16 MAGTAPE CONTROLS AND INDICATORS

SWITCHES	FUNCTION
PWR ON/PWR OFF	Applies power to entire TU16. Also, supplies power to the bus terminators if the tape transport is the most remote unit on the bus.
LOAD/BR REL	
LOAD position	Enables vacuum motor, which draws tape into the buffer columns.
Center position	Disables vacuum motor, brakes are full-on.
BR REL position	Releases brakes.
ON LINE/OFF LINE	
ON LINE position	Selects computer controlled operation.
OFF LINE position	Selects manual controlled operation.
FWD/REW/REV	
FWD position	Selects, but does not initiate, forward tape motion when transport is off-line.
REW position	Selects, but does not initiate, tape rewind when transport is off-line.
REV position	Selects, but does not initiate, reverse tape motion when transport is off-line.
START/STOP	
START position	Initiates tape motion selected by FWD/REW/REV switch when transport is off-line.
STOP position	Clears any motion commands when transport is off-line.
UNIT SELECT	Selects the tape transport unit by number (0-7). This number is used in the program to address the tape transport.
INDICATORS	**FUNCTION**
PWR	Indicates power has been applied to the transport.
LOAD	Indicates that vacuum is on and the tape is loaded into the buffer columns.
RDY	Indicates that the tape transport is ready (vacuum on and settledown delay complete); there is no tape motion.
LD PT	Indicates that the tape is at load point (BOT).
END PT	Indicates that the tape is at end point (EOT).
FILE PROT	Indicates that write operations are inhibited because the write enable ring is not mounted on the file reel.

TABLE A (Contd)

TU16 MAGTAPE CONTROLS AND INDICATORS

INDICATORS	FUNCTION
OFF LINE	Indicates manual operation by the control box.
SEL	Indicates the tape transport is selected by the controller (program).
WRT	Indicates that the program has initiated a write operation in the tape transport.
FWD	Indicates that a forward command has been issued.
REV	Indicates that a reverse command has been issued.
REW	Indicates that a rewind command has been issued.

4.02 Power application, loading and unloading magnetic tape, restart, and cleaning are given in the following steps.

STEP	PROCEDURE
	A. Applying Power
1a	If the 861 power controller REMOTE ON/OFF/LOCAL ON switch is set to REMOTE ON, the power is controlled by the processor POWER key. This method is used in normal operation.
2b	If the processor POWER key is not activated, the power may be turned on locally by setting the 861 power controller REMOTE ON/OFF/LOCAL ON switch to the LOCAL ON position. This method may be used during maintenance.
	B. Loading Magnetic Tape
1	Operate ON LINE/OFF LINE switch to OFF LINE.
2	Operate LOAD/BR REL switch to BR REL.
3a	If data is to be written on the tape, place a write-enable ring in the tape reel groove.
4b	If data on the tape is ***not*** to be erased or written over, ensure that there is no ring in the groove.
5	Mount the file reel onto the lower hub (Fig. 3) with the groove facing toward the back (away from the operator).

STEP	PROCEDURE

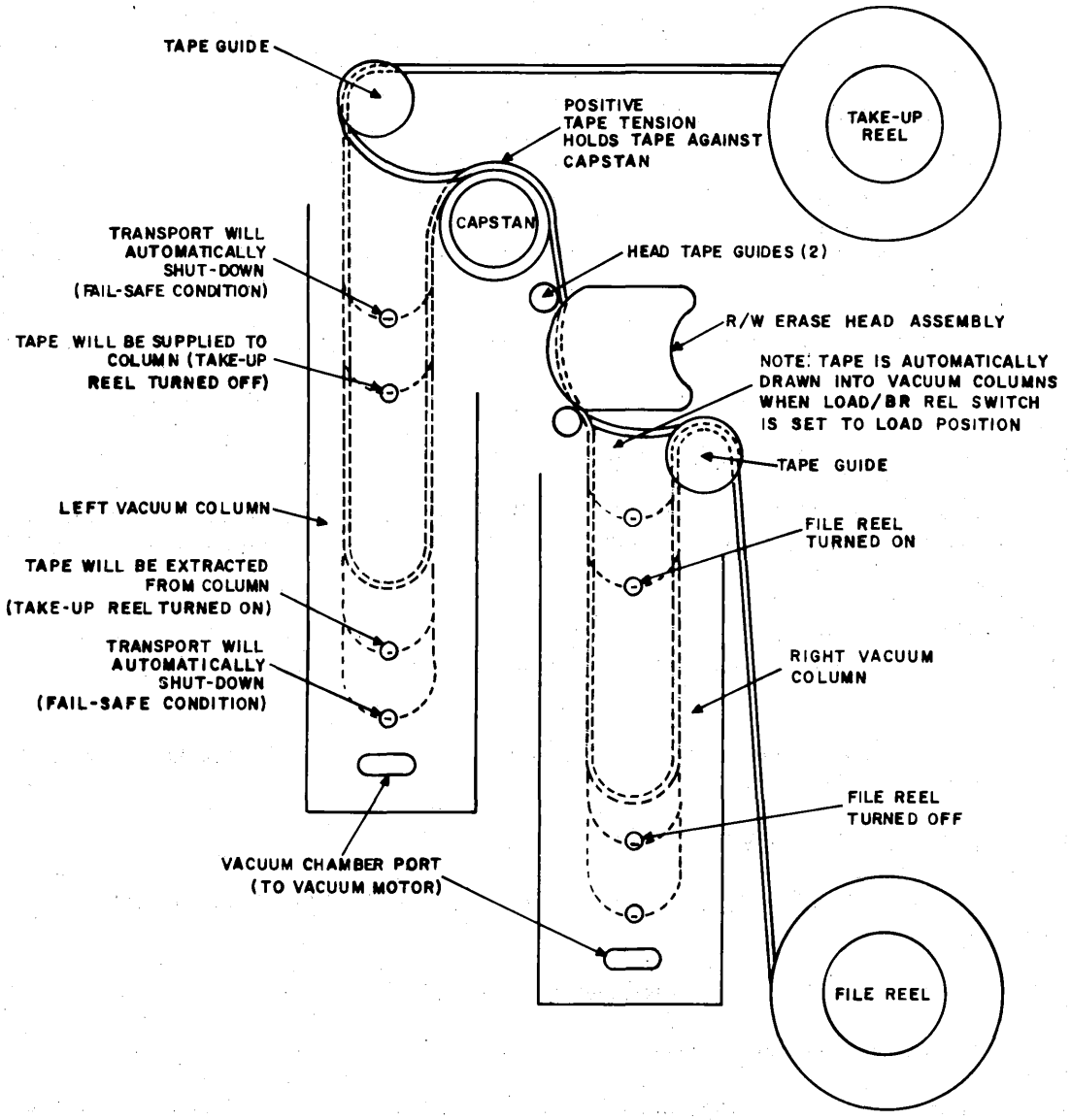

Fig. 3—TU16/TE16 Magtape Threading

STEP	PROCEDURE
6	Ensure that the reel is firmly seated against the flange of the hub and that the reel hub is securely tightened by hand. To tighten the reel hub, turn it clockwise.
7	Mount the take-up reel onto the upper hub, with the groove facing toward the back.
8	Ensure that the reel is firmly seated against the flange of the hub and that the reel hub is securely tightened by hand. To tighten the reel hub, turn it clockwise.
9	Manually unwind tape from the file reel and thread the tape by the tape guides and head assembly (Fig. 3).
10	Wind about four turns of tape onto the take-up reel. Ensure that the tape is in the tape guides.
11	Operate LOAD/BR REL switch to LOAD to draw the tape into the vacuum columns.
12	Operate FWD/REW/REV switch to FWD.
13	Operate START/STOP switch to START to advance the tape to the load point. When the BOT marker is sensed, tape motion stops, the FWD indicator extinguishes, and the LD PT indicator lights.
	Note: If tape motion continues for more than 10 seconds, there is either no BOT marker on the tape or too much leader has been wound on the take-up reel, thereby covering the BOT marker.
14c	If there is too much leader on the take-up reel covering the BOT marker, operate START/STOP switch to STOP.
15c	Operate FWD/REW/REV switch to REV.
16c	Operate START/STOP switch to START. The tape should move to the BOT marker (load point) and stop.
17c	Operate ON LINE/OFF LINE switch to ON LINE.
	C. Unloading Magnetic Tape
1a	If the tape is at the BOT marker, operate ON LINE/OFF LINE switch to OFF LINE.
2a	Operate LOAD/BR REL switch to BR REL.
3a	Gently hand wind the file reel in a counterclockwise direction until all of the tape is wound on the reel.
4a	Operate LOAD/BR REL switch to LOAD.
5a	Turn the hub on the lower reel counterclockwise to loosen the file reel.

STEP	PROCEDURE
6a	Remove the file reel from the hub assembly.
7a	Operate LOAD/BR REL switch to BR REL.
8b	If the tape is not at the BOT marker, operate ON LINE/OFF LINE switch to OFF LINE.
9b	Operate START/STOP switch to STOP.
10b	Operate FWD/REW/REV switch to REW.
11b	Operate START/STOP switch to START. The tape should rewind until the BOT marker is reached.
12b	Perform Steps 1a through 7a.
	D. Restart After Power Failure
	Note: In the event of a power failure, the TU16 automatically shuts down and tape motion stops without physical damage to the tape. However, if the TU16 was on-line and was either reading or writing at the time of the power failure, the last record was probably lost. Refer to system recovery procedures documentation if this happens.
1	Return of power is indicated when the PWR indicator lights.
2	Operate ON LINE/OFF LINE switch to OFF LINE.
3	Operate LOAD/BR REL switch to BR REL.
4	Manually wind the reels to take up any slack in the tape.
5	Operate LOAD/BR REL switch to LOAD to draw the tape back into the vacuum columns.
6	Operate ON LINE/OFF LINE switch to the desired position.
	E. Restart After Fail-Safe
	Note: If the tape loop in either vacuum column exceeds the limit shown in Fig. 4, the vacuum system automatically shuts down and tape motion stops without damage to the tape. When this fail-safe condition occurs, the TU16 does not respond to either on-line or off-line commands.
1	Operate ON LINE/OFF LINE switch to OFF LINE.
2	Operate LOAD/BR REL switch to BR REL.
3	Manually wind the reels to take up any slack in the tape.
4	Operate LOAD/BR REL switch to LOAD to draw the tape back into the vacuum columns.

STEP	PROCEDURE

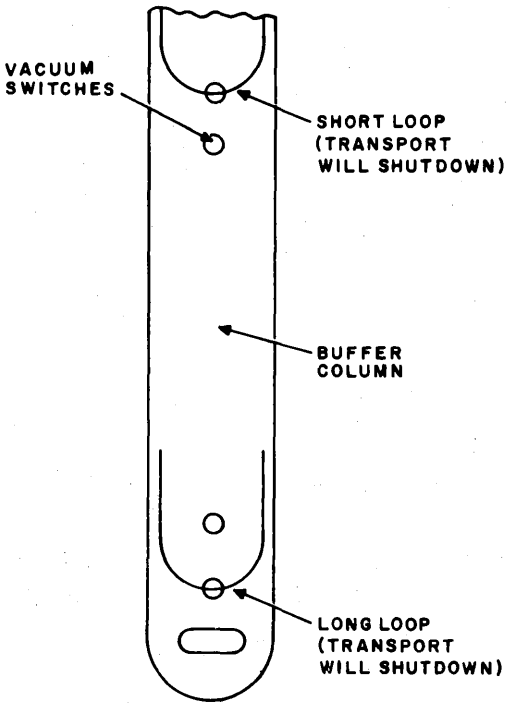

Fig. 4—TU16/TE16 Magtape Fail-Safe Limits

5 Operate ON LINE/OFF LINE switch to the desired position.

F. Cleaning Magtape Unit

1 Unload the tapes from the unit (Procedure C).

Warning: Be careful to keep cleaning fluid only on the tape-bearing surface of the tape guides to prevent degreasing the tape guide bearings.

2 Clean the following components of the transport (Fig. 5) using a foam-tipped swab soaked in cleaning fluid (KS-20406 or equivalent):

- Read/write head
- Erase head
- Tape cleaner
- Three tape guides.

STEP	PROCEDURE

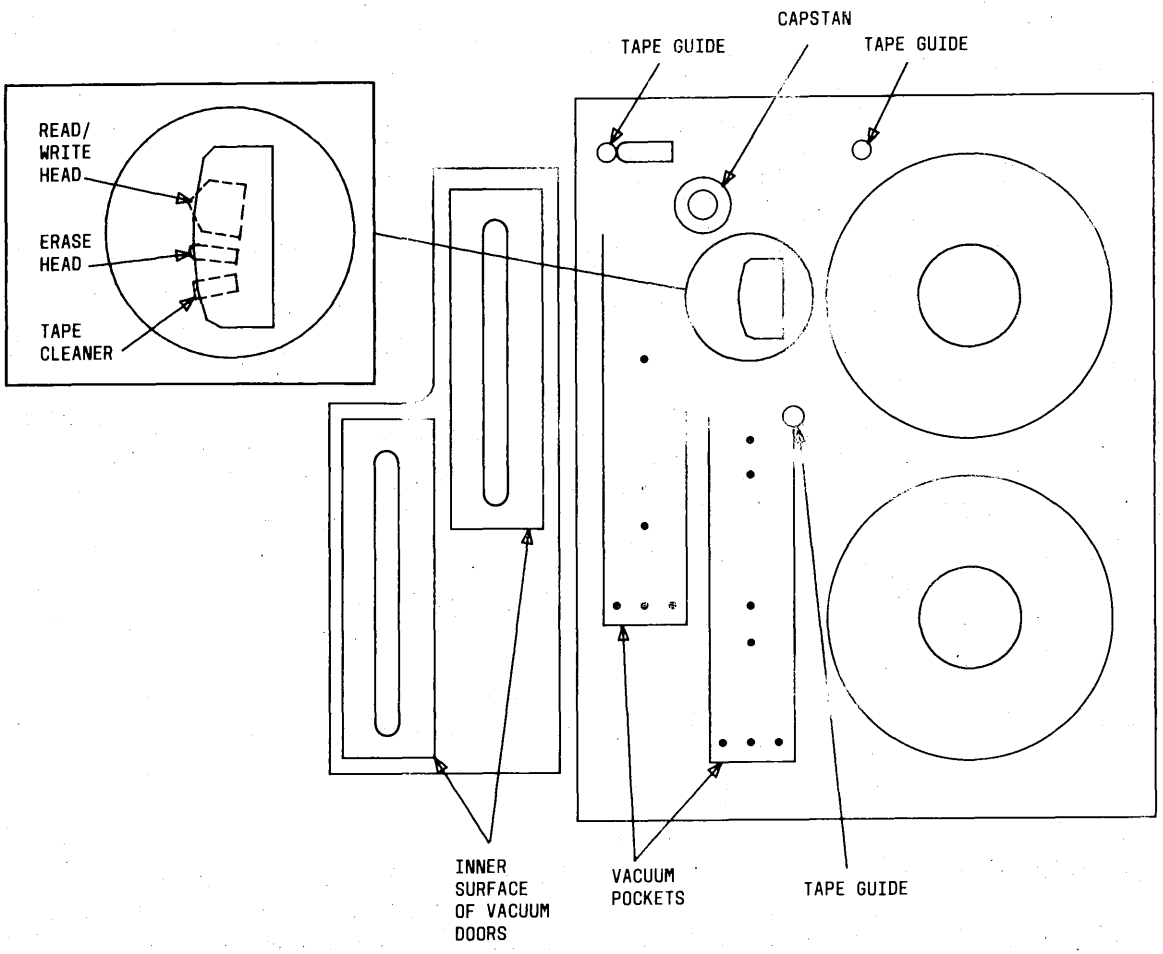

Fig. 5—Location of Areas That Need Cleaning on TU16/TE16

Note: When cleaning the head area, avoid the spring-loaded ceramic washers on the tape transport assemblies. It may be necessary to run the swab over the tape bearing surface of these guides to remove oxide deposits. If this is done, be sure that the washer is pressed tight against the tape guide surface (Fig. 6) after cleaning is complete.

3 Clean vacuum pockets, inner surface of vacuum door, and rubber capstan wheel using a lint-free cloth and cleaning fluid.

4 Remove any remaining deposits from the heads by using a polishing action with a lint-free cloth.

5 Clean the reel-contacting metal surfaces of the lower hub using a dry cloth.

Note: Dirt on these surfaces may result in slippage of the tape reel.

STEP	PROCEDURE

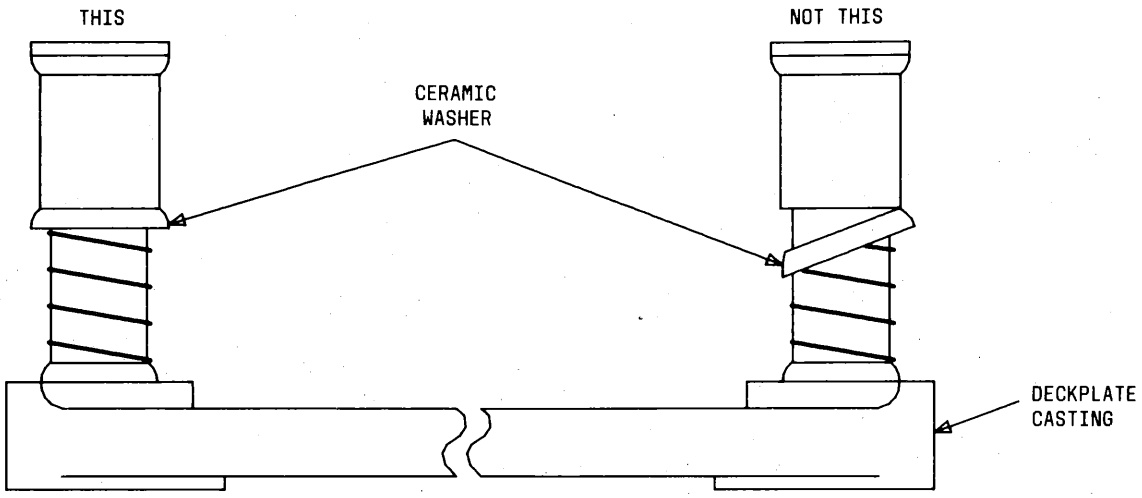

Fig. 6—Proper Ceramic Washer Positioning

5. TE16 MAGTAPE PROCEDURES

5.01 The TE16 magtape unit is shown in Fig. 7. Controls and indicators are shown in Fig. 8 and listed in Table B. Associated with each control or indicator is a description of its function. All controls and indicators are located in a control box mounted to the left of the file reel.

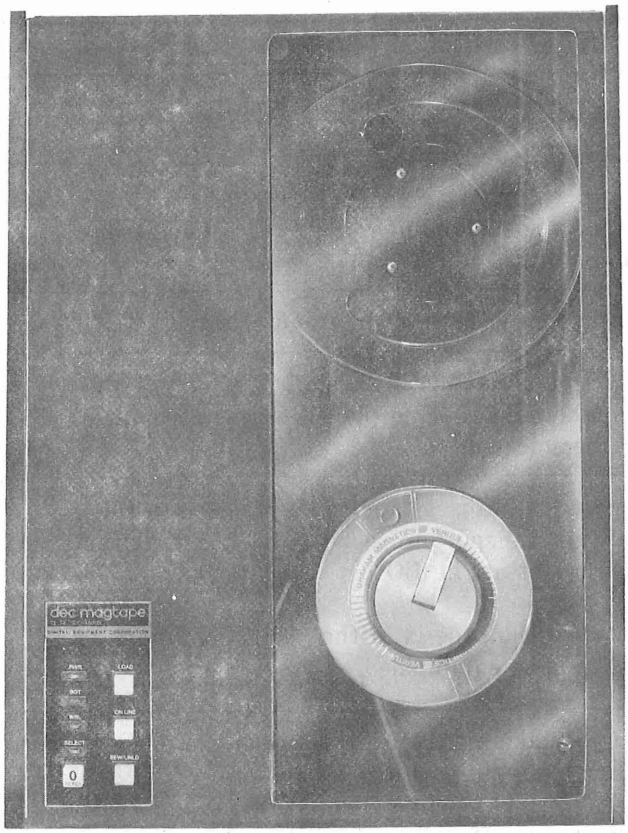

Fig. 7—TE16 Magtape Unit

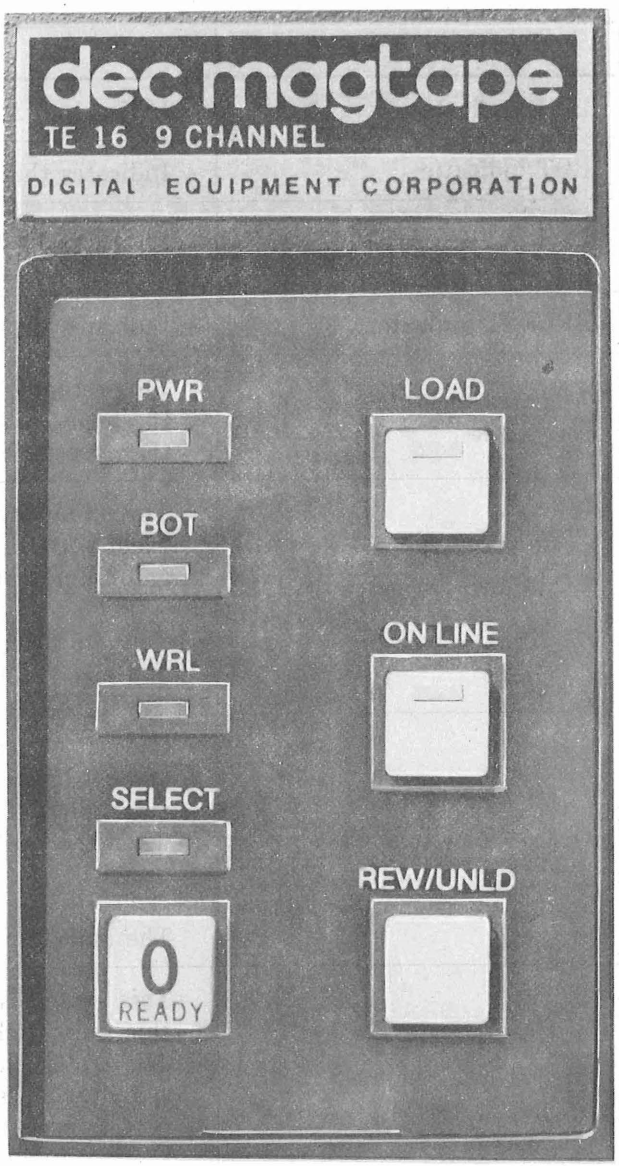

Fig. 8—TE16 Magtape Controls and Indicators

TABLE B

TE16 MAGTAPE CONTROLS AND INDICATORS

CONTROL OR INDICATOR	FUNCTION
PWR indicator	Indicates that ac power has been applied to the device.
BOT indicator	Indicates that the BOT marker is positioned over its sensor.
WRL indicator	Indicates either no tape reel is mounted or a reel is mounted without a write-enable ring.
SELECT indicator	Indicates that the transport is both on-line and selected.
Address selection plug receptacle	This receptacle accepts plugs labeled 0 through 7, which define the logical address of the device. If no plug is in the receptacle, the transport cannot be selected.
LOAD switch/indicator	Threading the tape correctly causes tape to be pulled into the vacuum columns and the transport to seek the BOT* marker and go on-line when it is at rest at the BOT. The indicator lights when the tape is in the vacuum columns and proper vacuum has been established.
ON LINE switch/indicator	Causes the transport to make a transition between the on-line and off-line states. For example, pushing the switch when the drive is off-line causes it to go on-line. This switch is inoperative when the LOAD indicator is off and no LOAD sequence is in process. The indicator lights when the transport is on-line.
REW/UNLD switch†	This switch is inoperative when the transport is on-line. Depressing this switch when the transport is off-line and not a BOT causes the drive to execute a high-speed rewind to BOT. Depressing this switch when the transport is off-line and at BOT causes the transport to execute an UNLOAD sequence.

* A seek-for-BOT sequence consists of 5 seconds of forward motion, followed by a rewind to BOT.

† Pushing this switch while the transport is executing a LOAD sequence (LOAD indicator on) and seeking forward for the BOT marker aborts the LOAD sequence and causes a normal off-line rewind procedure. Never push this switch before the BOT marker is sensed.

5.02 Power application, loading and unloading magnetic tape, restart, and cleaning procedures are given.

STEP	PROCEDURE
	A. Applying Power
1	Set the 861 power controller REMOTE ON/OFF/LOCAL ON switch to REMOTE ON. The magtape is controlled by the processor POWER switch.
	B. Loading Magnetic Tape
1a	If ON LINE indicator is lighted— Depress ON LINE switch. ON LINE indicator extinguished.
2b	If LOAD indicator is lighted— Depress LOAD switch. LOAD indicator extinguished.
3c	If data is to be written on the tape, place a write-enable ring in the tape reel groove.
4d	If data on the tape is ***not*** to be erased or written over, ensure that there is no ring in the groove.
5	Release the snap-lock lever on the lower hub by pulling it firmly outward on the rim end.
6	Mount the file reel onto the lower hub with the groove facing toward the back (away from the operator).
7	When the reel is firmly seated against the hub flange (press the reel firmly but not hard), close the snap-lock lever on the hub.
	Warning: Wind the tape flat onto the take-up reel. Do not bend tape back or place tape end outside of reel. While winding tape on take-up reel, simultaneously unwind the file reel to relieve tension on the tape. Do not jerk the tape, this will cause the tape to stretch.
8	Manually unwind tape from the file reel and thread the tape by the tape guides and head assembly (Fig. 3).
9	Wind about four turns of tape onto the take-up reel. Ensure that the tape is in the tape guides.
10	Depress LOAD switch. LOAD indicator lighted.
	Note: After 2 seconds, tape will be pulled into the vacuum columns and BOT sensing will begin. When the BOT marker is sensed, tape motion stops, and the transport goes on-line (ON LINE and BOT indicators lighted).
	C. Unloading Magnetic Tape
1a	If BOT indicator is lighted— Depress ON LINE switch if lighted. ON LINE indicator extinguished.
2a	Depress REW/UNLD switch. The tape executes a high-speed rewind operation. When the BOT marker is sensed, tape motion stops.

STEP	PROCEDURE
3a	Depress REW/UNLD switch. The unload sequence begins with the tape gently winding onto the lower file reel. When all the tape is on the file reel, tape motion stops.
4a	Remove the file reel by unlocking the snap-lock lever on the hub and gently pulling the reel off.
5a	Store per local instructions.
6b	If BOT indicator is ***not*** lighted— Depress ON LINE switch if lighted. ON LINE indicator extinguished.
7b	Depress REW/UNLD switch. The unload sequence begins with the tape gently winding onto the lower file reel. When all the tape is on the file reel, tape motion stops.
8b	Remove the file reel by unlocking the snap-lock lever on the hub and gently pulling the reel off.
9b	Store per local instructions.
	D. Restart After Power Failure
	Note: In the event of a power failure, the TE16 automatically shuts down and tape motion stops without physical damage to the tape.
1	Return of power is indicated when the PWR indicator lights.
2a	If ON LINE indicator is lighted— Depress ON LINE switch. ON LINE indicator extinguished.
3	Manually wind any loose tape onto the take-up reel so that it is snug in the tape loading path.
4	Depress LOAD switch. This causes the tape to be drawn into the vacuum columns, go forward for 5 seconds, and rewind to BOT.
	E. Restart After Fail-Safe
	Note: If the tape loop in either vacuum column exceeds the limit shown in Fig. 4, the vacuum system automatically shuts down, and tape motion stops without damage to the tape. When this fail-safe condition occurs, the TE16 does not respond to either on-line or off-line commands.
1a	If ON LINE indicator is lighted— Depress ON LINE switch. ON LINE indicator extinguished.
2	Manually wind any loose tape onto the take-up reel so that it is snug in the tape loading path.
3	Depress LOAD switch. This causes the tape to be drawn into the vacuum columns, go forward for 5 seconds, and rewind to BOT.

STEP	PROCEDURE

F. Cleaning Magtape Unit

1 Unload the tapes from the unit (Procedure C).

Warning: Be careful to keep cleaning fluid only on the tape-bearing surface of the tape guides to prevent degreasing the tape guide bearings.

2 Clean the following components of the transport (Fig. 5) using a foam-tipped swab soaked in cleaning fluid (KS-20406 or equivalent):

- Read/write head
- Erase head
- Tape cleaner
- Three tape guides.

Note: When cleaning the head area, avoid the spring-loaded ceramic washers on the tape transport assemblies. It may be necessary to run the swab over the tape bearing surface of these guides to remove oxide deposits. If this is done, be sure that the washer is pressed tight against the tape guide surface (Fig. 6) after cleaning is complete.

3 Clean vacuum pockets, inner surface of vacuum door, and rubber capstan wheel using a lint-free cloth and cleaning fluid.

4 Remove any remaining deposits from the heads by using a polishing action with a lint-free cloth.

5 Clean the reel-contacting metal surfaces of the lower hub using a dry cloth.

Note: Dirt on these surfaces may result in slippage of the tape reel.

6. LA36 "DEC "WRITER II TERMINAL PROCEDURES

6.01 Controls for operation of the LA36 DECwriter terminal (Fig. 9) are shown in Fig. 10 and listed in Table C (with the exception of the keyboard).

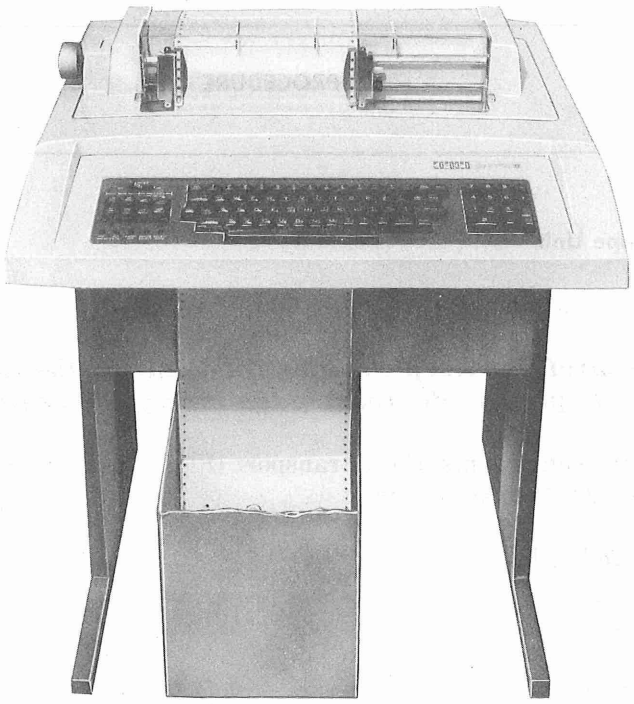

Fig. 9—LA36 DECwriter II Terminal

Fig. 10—LA36 DECwriter II Terminal Controls, Indicators, and Keyboard

TABLE C

LA36 "DEC"WRITER II TERMINAL CONTROLS

CONTROL	FUNCTION
PRINTER ON/OFF	
ON position	Allows normal unit operation.
OFF position	Removes power. The POWER switch should be in the OFF position when changing ribbon, changing paper, or adjusting the print head.
LINE/LOC	
LINE position	Enables the LA36 to transmit and receive data.
LOC position	The LA36 receive/transmit lines are disabled. Only local operation can be peformed when in the LOC position.
BAUD RATE 110, 150, 300	Selects the rate at which characters are transmitted and received over the communications line.
110 position	10 characters per second.
Both 110 and 300 positions	15 characters per second.
300 position	30 characters per second.
Numeric keypad	The numeric keypad enables numbers to be entered in an adding machine fashion. Each key in the numeric keypad generates the same ASCII character as the correspondng key in the main keyboard.

6.02 The following procedures describe the method for loading paper and changing the ribbon in the DECwriter terminal. When initially loading paper in the DECwriter terminal or when adjustments need to be made (paper positioning, impression adjustment, horizontal positioning adjustment, and fine vertical positioning), perform the loading paper procedure. When simply reloading paper and no adjustments are required, perform the paper reloading procedure.

STEP	PROCEDURE

A. Loading Paper

Paper Positioning

1 Operate PRINTER switch to OFF.

2 Open DECwriter terminal cover.

3 Place the tractor-feed paper on the floor between the legs of the DECwriter terminal.

Note: The term tractor-feed refers to the holes on either side of the paper.

4 Ensure that the leading edge of the forms is directly below and parallel to the feed slot.

5 Open the left tractor cover (Fig. 11) so that the tractor pins are exposed.

6 Move the carriage adjustment lever (Fig. 11) to the highest number.

7 Feed the paper through the load channel under the terminal and align the left paper margin holes over the left tractor pins.

8 Close the left tractor cover.

9 Loosen the tractor adjustment knob (Fig. 11) on the right tractor about 1/2 turn.

Caution: Ensure that the paper does not pull against the tractor pins or bow in the middle.

10 Open the right tractor cover (Fig. 11) and slide the tractor to a position where the holes on the right paper margin align directly over the tractor pins.

11 Close the tractor cover.

12 Tighten the tractor adjustment knob.

Impression Adjustment

Note: The carriage adjustment lever is normally set forward (to number 1) for single thickness paper. Steps 13 and 14 are applicable only for multipart forms.

13 Set the carriage adjustment lever to the number corresponding to the number of parts in the form.

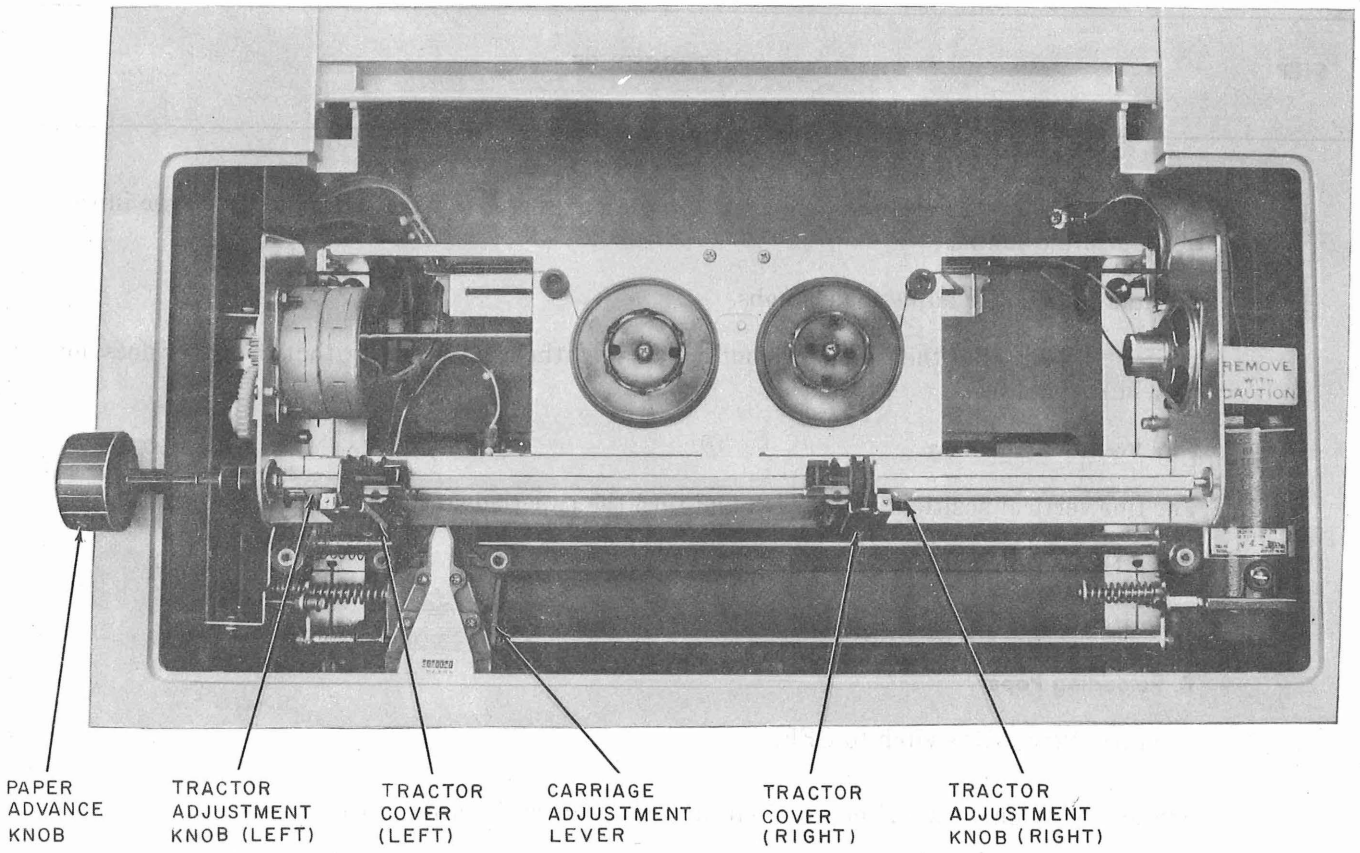

Fig. 11—LA36 DECwriter II Terminal Impression and Position Adjustments

STEP	PROCEDURE
14	Turn the paper advance knob (Fig. 11) counterclockwise while moving the carriage adjustment lever forward one notch at a time until the paper smudges. Move the lever back one notch at a time until the paper no longer smudges. ***Note:*** If the impression is unsatisfactory due to a worn ribbon, perform the changing ribbon procedure. An indication of a worn ribbon is that the first copy in a multipart copy is poor but the remaining copies are good.
	Horizontal Positioning Adjustment ***Note:*** The horizontal positioning adjustment enables the paper to be shifted left or right (1/2 inch maximum). Shifting the paper provides a simple means of aligning the type within the appropriate columns on the paper.
15	Loosen both tractor adjustment knobs about 1/2 turn.

STEP	PROCEDURE
16	Move the tractors the desired amount (1/2 inch maximum) to have the characters type in the appropriate columns.
17	Tighten the tractor adjustment knobs.
	Note: Ensure that the paper does not pull against the tractor pins or that the paper does not bow in the middle.
	Fine Vertical Positioning
18	For fine vertical positioning, press in and turn the paper advance knob to the desired position.
19	Close DECwriter terminal cover.
20	Operate PRINTER switch to ON.
	B. Reloading Paper
1	Operate PRINTER switch to OFF.
2	Store paper from DECwriter terminal in accordance with local instructions.
3	Open DECwriter terminal cover.
4	Place the tractor-feed paper on the floor between the legs of the DECwriter terminal.
	Note: The term tractor-feed refers to the holes on either side of the paper.
5	Open both tractor covers so that the tractor pins are exposed.
6	Ensure that the leading edge of the forms is directly below and parallel to the feed slot.
7	Feed the paper through the load channel under the terminal and align the paper holes over the tractor pins.
8	Close the tractor covers.
9a	If any adjustments are required— Refer to Procedure A.
10	Close the DECwriter terminal cover.
11	Operate PRINTER switch to ON.

STEP	PROCEDURE

C. Changing Ribbon

Note: The ribbon should last from 8 to 12 hours of actual printing at 30 characters per second. After 12 hours or when the print density becomes too light, the ribbon can be replaced or turned over, and the lower half of the ribbon can be used. After rethreading the same ribbon, another 4 hours (approximately) of printing time is possible before the ink is completely used. At this time, the ribbon must be replaced.

1 Operate LINE/LOC switch to LOC.

2 Wait until reel is completely emptied and ready to reverse.

3 Operate PRINTER switch to OFF.

4 Open DECwriter terminal cover.

5 Record the setting of the carriage adjustment lever.

6 Move the carriage adjustment lever to the highest number.

7a If the ribbon is to be replaced—
Remove the ribbon spools and ribbon. Save one spool to be used with the new ribbon.

8a Connect the hook on the end of the ribbon to the empty spool.

Caution: If the direction reversing rivet is not wound on the empty spool beyond the direction sensing guide, the ribbon will not reverse.

9a Wind 10 turns of ribbon on the empty spool. Ensure that direction reversing rivet on the ribbon is wound on the empty spool.

10b If the lower half of the ribbon is to be used—
Remove both spools and unthread the ribbon.

Caution: If the direction reversing rivet is not wound on the take-up spool beyond the direction sensing guide, the ribbon will not reverse.

11b Ensure that the direction reversing rivet on the ribbon is wound on the take-up spool.

12 Place the full spool on the left spindle (Fig. 12) and turn clockwise until it drops into position.

13 Guide the ribbon around outside of idler spool A (Fig. 12) through direction sensing guide B, and around the outside of idler spool C through E.

14 Guide the ribbon around the front of head F and idler spools G through I.

STEP	PROCEDURE

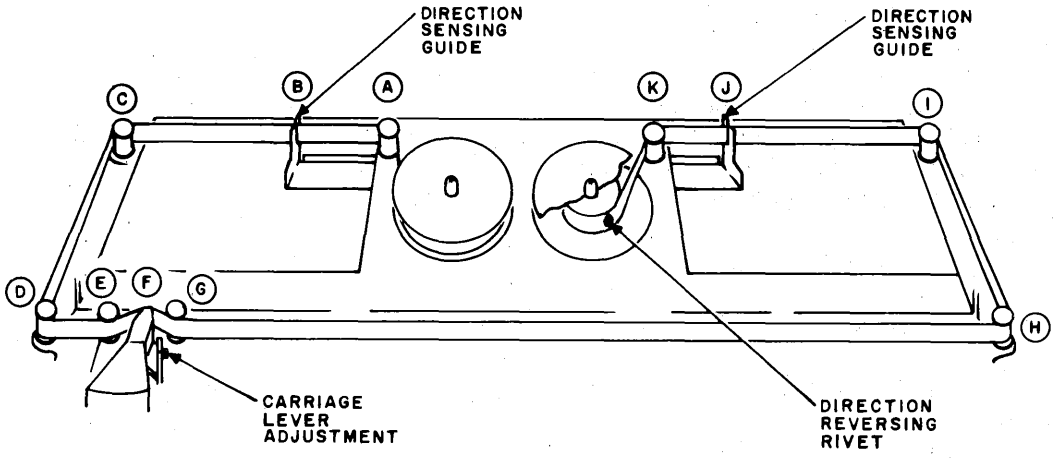

Fig. 12—LA36 DECwriter II Terminal Ribbon Threading Diagram

15 Guide the ribbon through direction sensing guide J and idler spool K.

16 Place the spool on the right spindle and turn clockwise until it drops into position.

17 Take up the slack in the ribbon by turning the free-moving spool.

18 Return the carriage adjustment lever to its original setting.

19 Close the DECwriter terminal cover.

20 Operate PRINTER switch to ON.

21 Operate LINE/LOC switch to LINE.

7. RP06 DISK DRIVE PROCEDURES

7.01 Controls and indicators for operation of the RP06 disk drive (Fig. 13) are shown in Fig. 14 and listed in Table D.

Fig. 13—RP06 Disk Drive

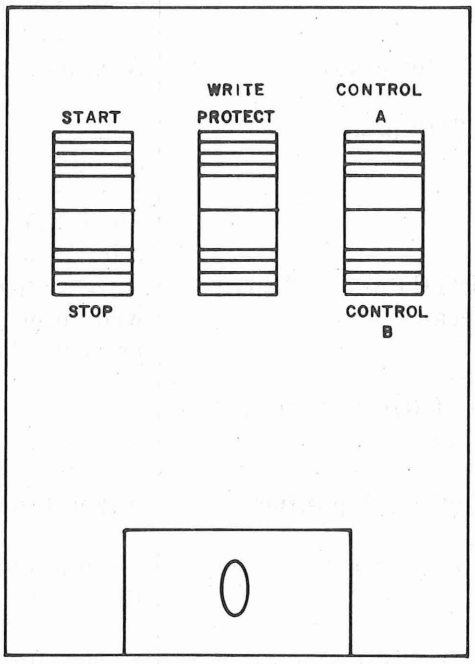

Fig. 14—RP06 Disk Drive Controls and Indicators

TABLE D

RP06 DISK DRIVE CONTROLS AND INDICATORS

CONTROL	FUNCTION
START/STOP switch	
START position	Enables the drive power-controlled network to remotely respond to the system power control signals (sequence pick, sequence enable, and controlled ground) to execute the drive power-up and power-down sequences when a disk pack is installed, the operator cover is closed, the drive is not in a standby mode, and the primary circuit breaker (CB1) is on.
Center position	Allows disk to be spinning, but not accessed.
STOP position	Removes ac power from the drive motor and initiates the power off sequence.
WRITE PROTECT switch/ indicator	The WRITE PROTECT switch sets the write protect latch if the drive is not selected or when the drive is negated after the switch is set to establish the drive write protect mode. The WRITE PROTECT indicator lights when the write protect mode is established in the drive. The write protect mode prevents the execution of write commands.
CONTROL A/CONTROL B switch	
Control A position	Enables the dual-control A locked line on the drive/DCL (MDLI) interface.
Center position	Asserts a high dual-control A locked line and a high dual-control B locked line on the drive/DCL (MDLI) interface.
CONTROL B position	Enables the dual-control B locked line on the drive/DCL (MDLI) interface.
Unit select	The drive number LED display converts the binary logical address of the drive (DCL display 1, 2, and 4) into a numeric display from 0 to 7. The drive numeric address does not perform any other function in the drive.
INDICATOR	**FUNCTION**
START indicator	Lights when the START switch is selected.
READY indicator	Lights when disk is at correct speed.
DOOR LOCKED indicator	Lights when door is locked and no attempt should be made to open the door (when illuminated).

7.02 The following recommendations should be followed:

(a) Do not affix label to side of cover. It can touch heads and paper dust can enter disk.

(b) Do not affix paper label to disk pack. Use a felt tip pen to mark the pack by writing on the top of the disk label.

(c) Always place free hand under disk pack (with bottom cover installed) when moving disk pack.

7.03 The following procedures describe the disk pack restoral, disk pack removal, and drive start-up for the RP06 disk drive.

STEP	PROCEDURE
	A. Disk Pack Restoral
1	Verify that a disk pack is not installed and that the spindle is stopped.
2	Operate and release operator cover latch. The operator cover will slide back into top of the drive.
3	Push operator cover straight back to fully expose drive spindle area (Fig. 15).
	Note: A solenoid operated latch locks the operator cover closed until spindle rotation has stopped.
4	Remove disk pack bottom cover by squeezing bottom cover release mechanism.
5	Place disk pack on spindle.
6	Rotate disk pack top cover handle (Fig. 16) in a clockwise direction until it comes to a complete stop. Continue to rotate, even though cover may disengage, to ensure that full stop point is reached and pack-on switch is closed.
7	Remove disk pack cover carefully to avoid damage to equipment.
8	Close and latch operator cover.
9	Reassemble disk pack top and bottom covers and store in a designated area.
	B. Disk Pack Removal
1	Operate the drive START/STOP switch to STOP.
2	With READY and START indicators extinguished, wait for disk pack to come to a complete stop (approximately 20 seconds) before opening operator cover. DOOR LOCKED indicator is extinguished.
3	Operate and release operator cover latch. The operator cover will spring open.

STEP	PROCEDURE
	Caution: Do not touch disk pack with hands.
4	Push operator cover straight back to fully expose the disk pack. ***Note:*** A solenoid operated latch locks the operator cover closed until disk pack rotation has stopped. ***Warning: To avoid damage to the shroud, heads, disk pack, etc, do not allow disk pack cover to strike these areas during disk positioning of the cover over the disk pack.***
5	Very carefully position disk pack cover over top of disk pack.

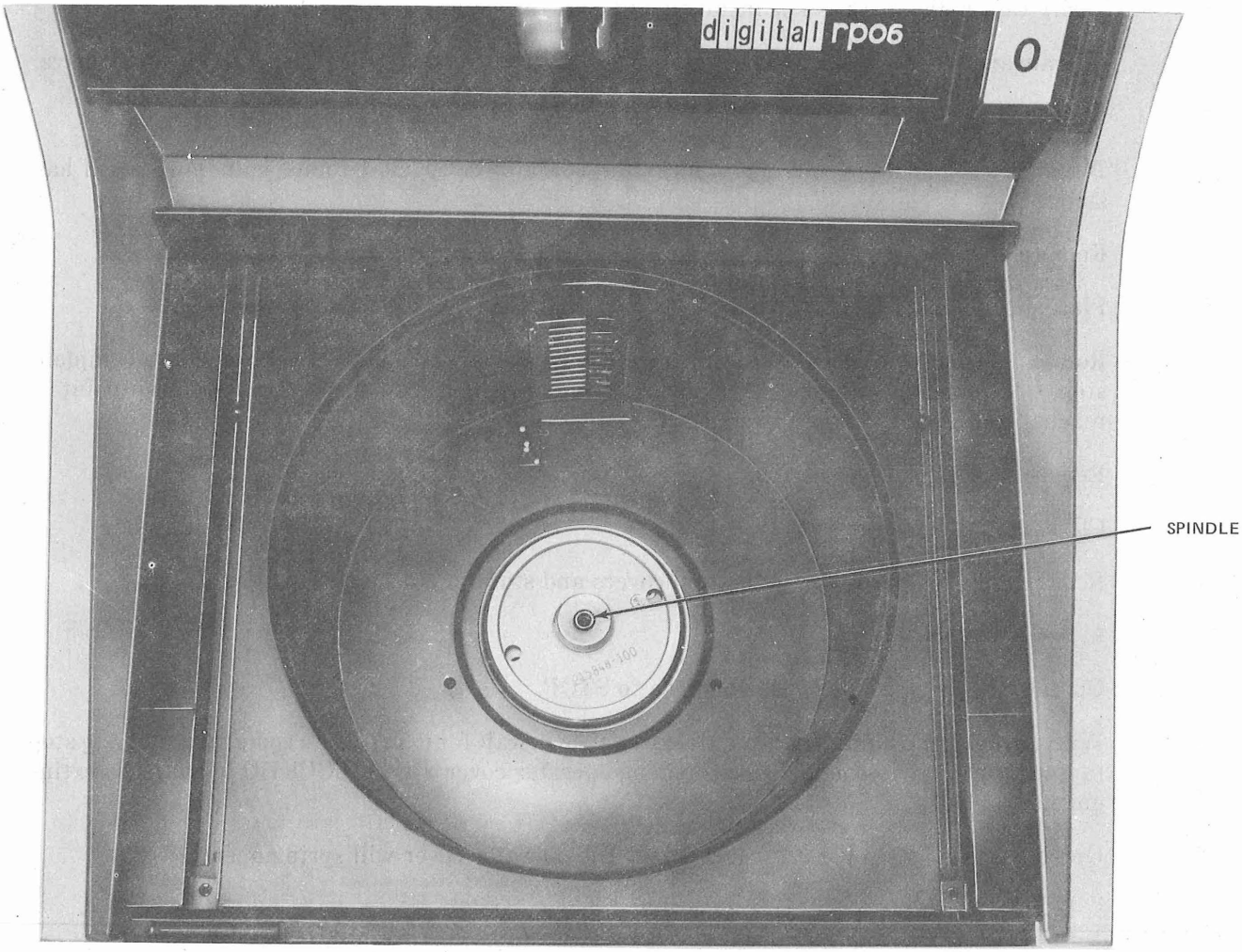

Fig. 15—RP06 Disk Pack Spindle

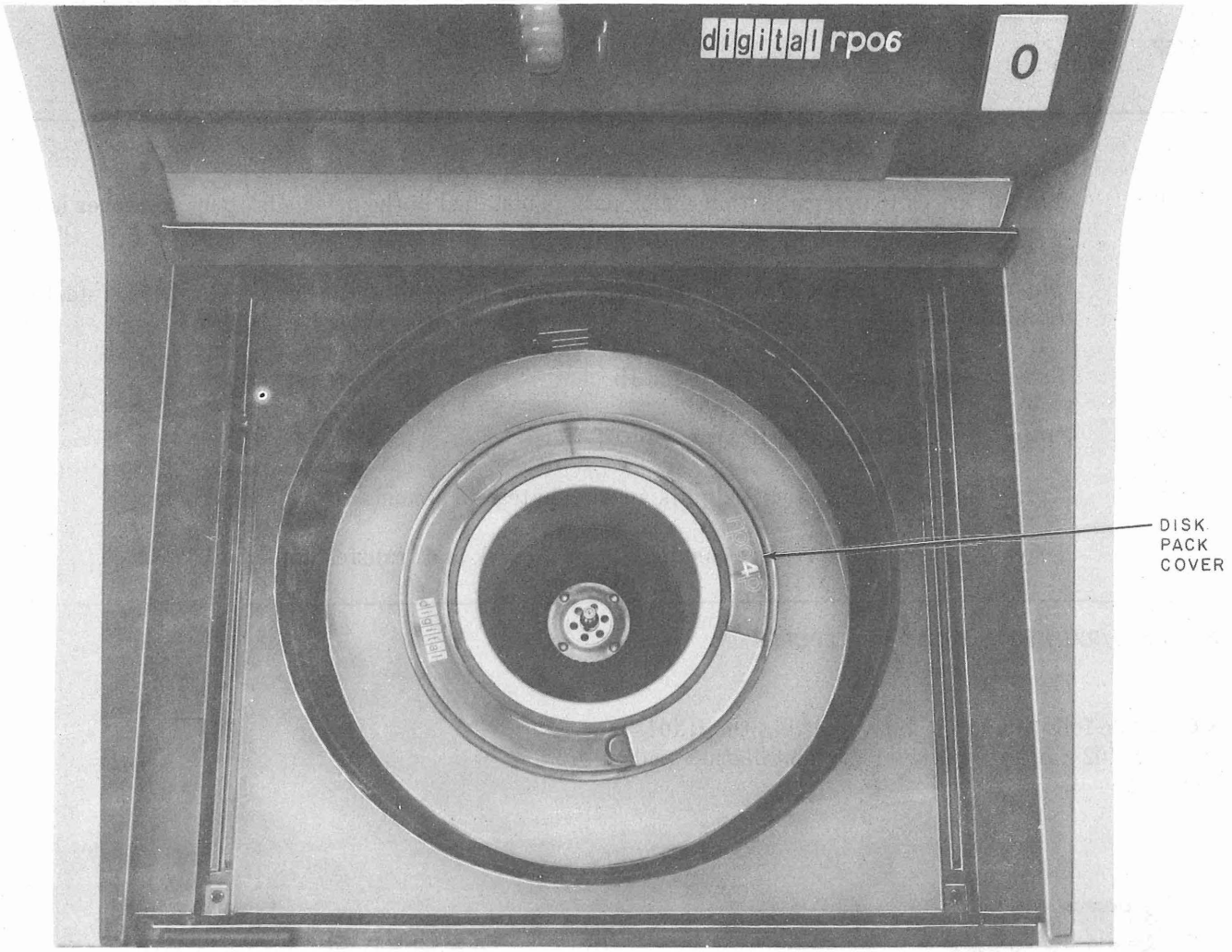

Fig. 16—RP06 Disk Pack Cover

STEP	PROCEDURE
6	Turn cover in a counterclockwise direction for two full turns so that cover becomes securely fastened to disk pack.
7	Remove disk pack by its top cover handle.
8	Immediately attach bottom cover to create a positive dust seal, and store in a designated area.
9a	If another disk pack is not to be installed at this time— Close and latch operator cover.

STEP	PROCEDURE
	C. Drive Start-Up
1	Visually check to determine that a disk pack is installed in the drive, disk pack top cover is removed, and operator cover is closed and latched. Turn drive on. ***Note:*** If the operator is responsible for recording usage meter time before the drive is started, it should be done now.
2	Select CONTROL switch (either A or B).
3	Operate drive START/STOP switch to START.
4	Verify that READY indicator lights approximately 15 seconds after drive starts.
5	Drive is now ready to receive commands and to seek and transfer data.

8. RX01/RX02 FLOPPY DISK PROCEDURES

8.01 The following procedure describes the RX01/RX02 floppy disk (Fig. 17) installation and removal.

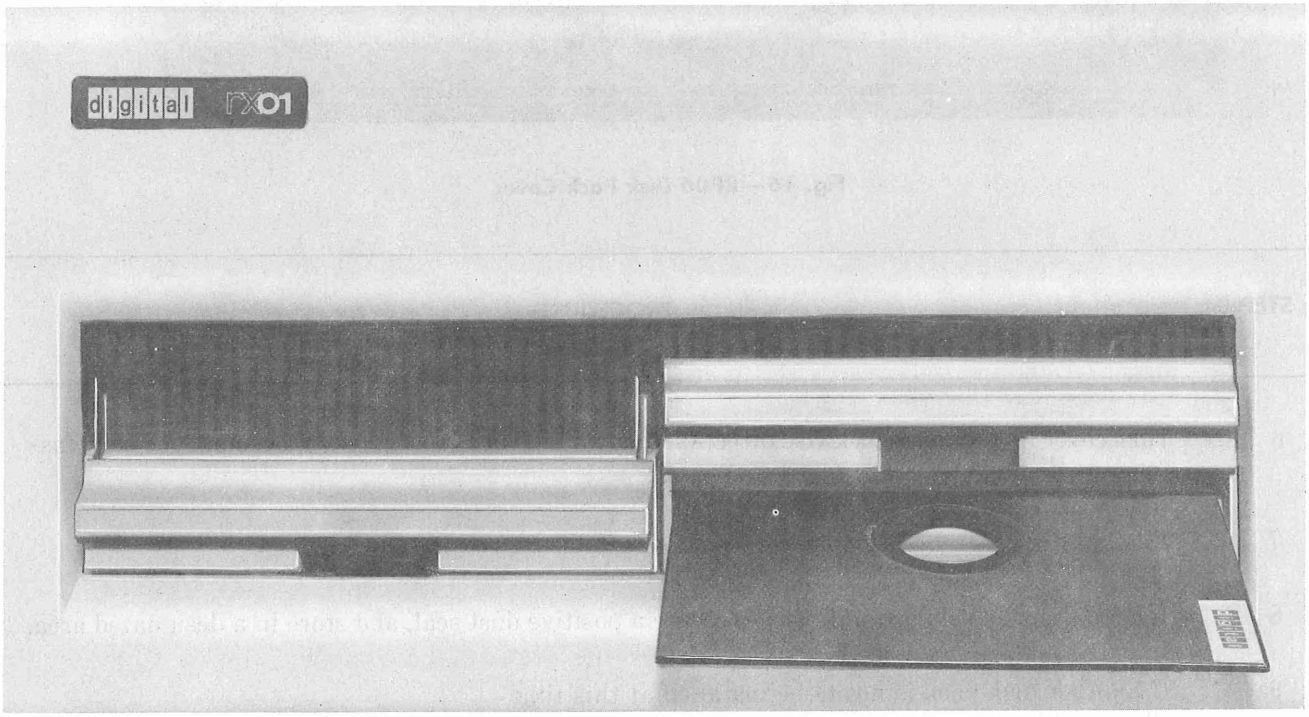

Fig. 17—RX01/RX02 Floppy Disk

STEP	PROCEDURE
	Caution: Do not open drives while they are being accessed. Data may be incorrectly recorded resulting in a CRC error when the sector is read.
1	Depress the pushbutton at front of disk unit. The spring loaded front cover will open.
2	Insert the diskette with label up and elongated slot entering first.
3	Close the cover. The cover will automatically lock when the bar is pushed down.

8.02 To prolong the diskette life and prevent errors when recording or reading, reasonable care in handling should be used. The following handling recommendations should be followed to prevent unnecessary loss of data or interruptions of system operations:

(a) Keep drive covers closed, even if no diskette is inserted.

(b) Do not write on the envelope containing the diskette. Write any information on a label prior to affixing it to the diskette.

(c) Paper clips should not be used on the diskette.

(d) Do not use writing instruments that leave flakes, such as lead or grease pencils, on the jacket of the media.

(e) Do not touch the disk surface exposed in the diskette slot or index hole.

(f) Do not clean the disk in any manner.

(g) Keep the diskette away from magnets or tools that may have become magnetized. Any disk exposed to a magnetic field may lose information.

(h) Do not expose the diskette to a heat source or sunlight.

(i) Always return the diskette to the envelope supplied to protect the disk from dust and dirt. Diskettes not being used should be stored in the file box, if possible.

(j) When the diskette is in use, protect the empty envelope from liquids, dust, and metallic materials.

(k) Do not place heavy items on the diskette.

(l) Do not store diskettes on top of computer cabinets or in places where dirt can be blown by fans into the diskette interior.

(m) If a diskette has been exposed to temperatures outside the operating range, allow 5 minutes for thermal stabilization before use. The diskette should be removed from its packaging during this time.

9. PROCEDURES FOR "DATASPEED" 40 PRINTER

9.01 The following describes the paper and ribbon loading procedures for the receive only printer (ROP).

STEP	PROCEDURE
	A. Loading Paper
1	At left rear of printer cabinet, set power switch down (off).
2	Open cover.
3	Release paper guides and open tractor covers (Fig. 18).
4	Feed paper up through printer and guide paper in back of ribbon and between upper paper guides (Fig. 19).
5	Pull paper up and align holes on paper with pins on left tractor.
6a	If left margin requires changing— Loosen left tractor release knob (Fig. 20).
7a	Slide left tractor to desired left margin using scale on printer as reference.
8a	Tighten left tractor release knob.
9a	Close left tractor cover.
10a	Loosen right tractor release knob.

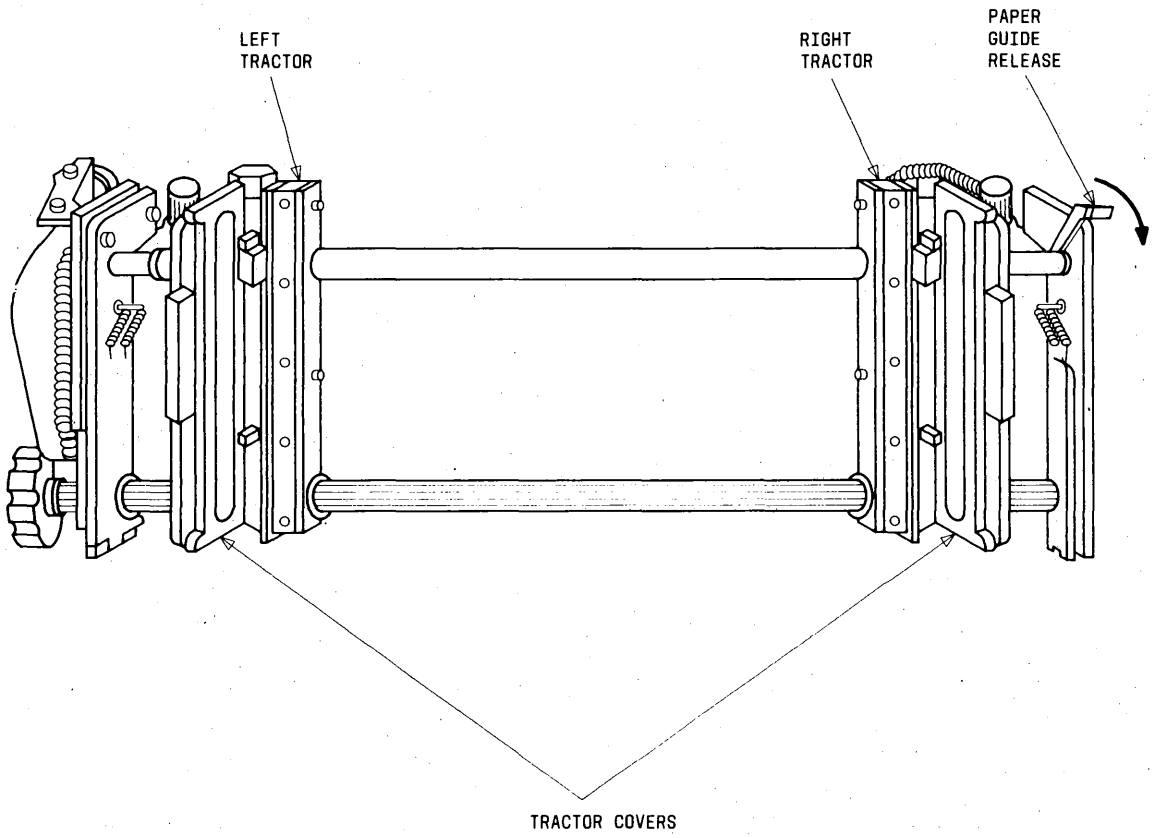

Fig. 18—DATASPEED 40 Printer Carriage Assembly (Without Paper)

STEP	PROCEDURE

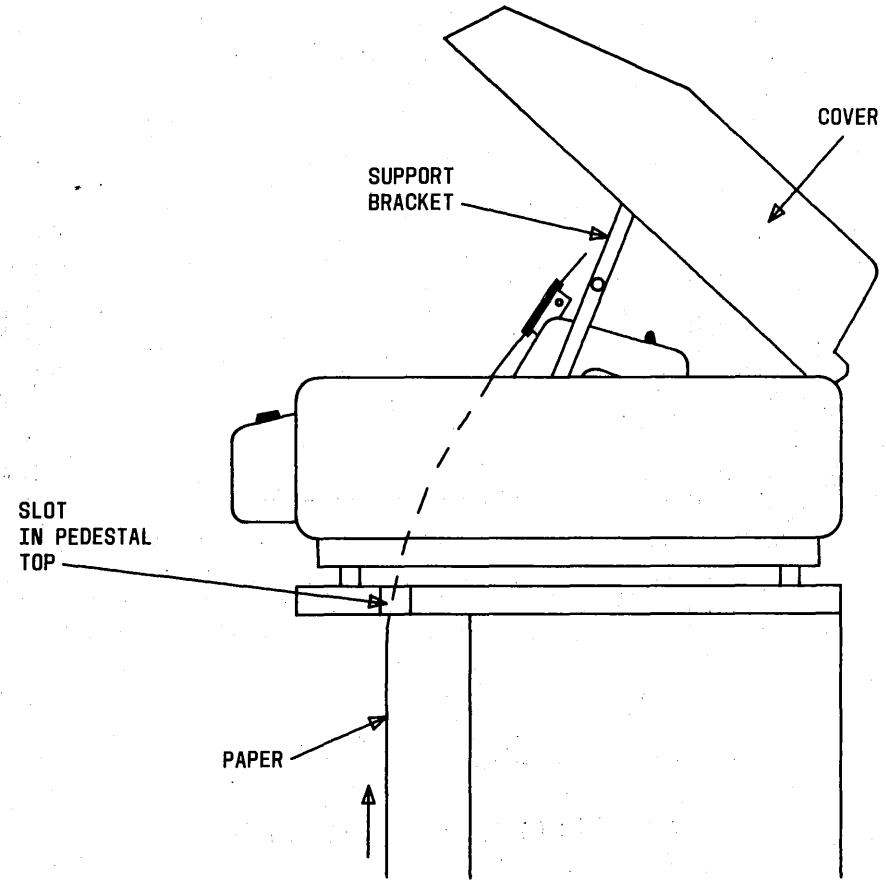

Fig. 19—DATASPEED 40 Printer Side View

11a	Align tractor pins with holes in paper.
12a	Tighten right tractor release knob.
13a	Close right tractor cover.
14	Pull out paper-adjusting knob.
15	Position paper so that first line to be printed is just above paper positioning shaft.
16	Make a pencil reference mark on paper in line with top of alignment clip on right tractor (Fig. 21).
17	Using blue paper-adjusting knob, move paper down so that reference mark is in line with bottom of alignment clip.

STEP	PROCEDURE

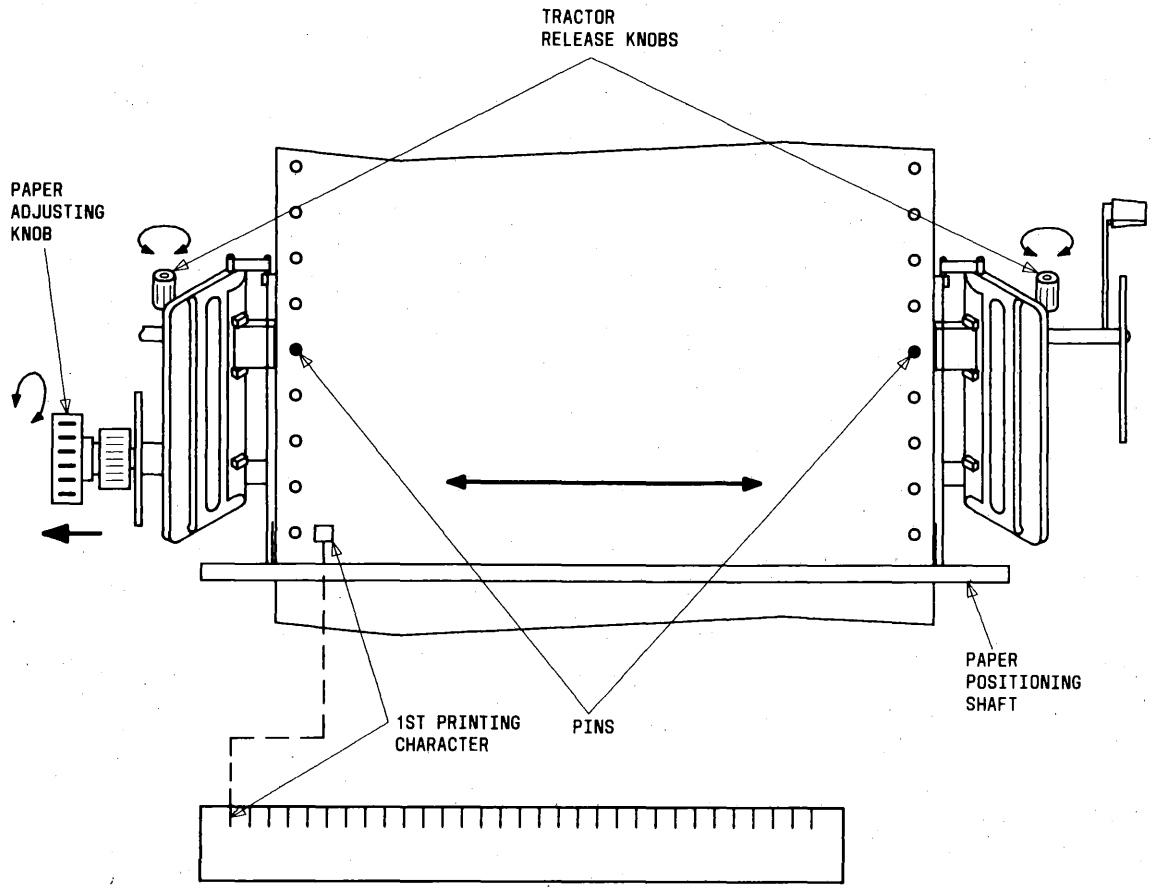

Fig. 20—DATASPEED 40 Printer Carriage Assembly (With Paper)

18 Return paper guide to operating position.

19 Close cover.

20 At left rear of printer cabinet, set power switch up (on).

B. Loading Ribbon

1 At left rear of printer cabinet, set power switch down (off).

2 Open cover.

3 Rotate spindles. Place new ribbon on spindle that rotates freely.

4 Hold take-up spool in one hand and thread ribbon (Fig. 22). Rotate five times.

5 Place take-up spool on spindle. Take up slack.

6 Close cover.

7 At left rear of printer cabinet, set power switch up (on).

STEP	PROCEDURE

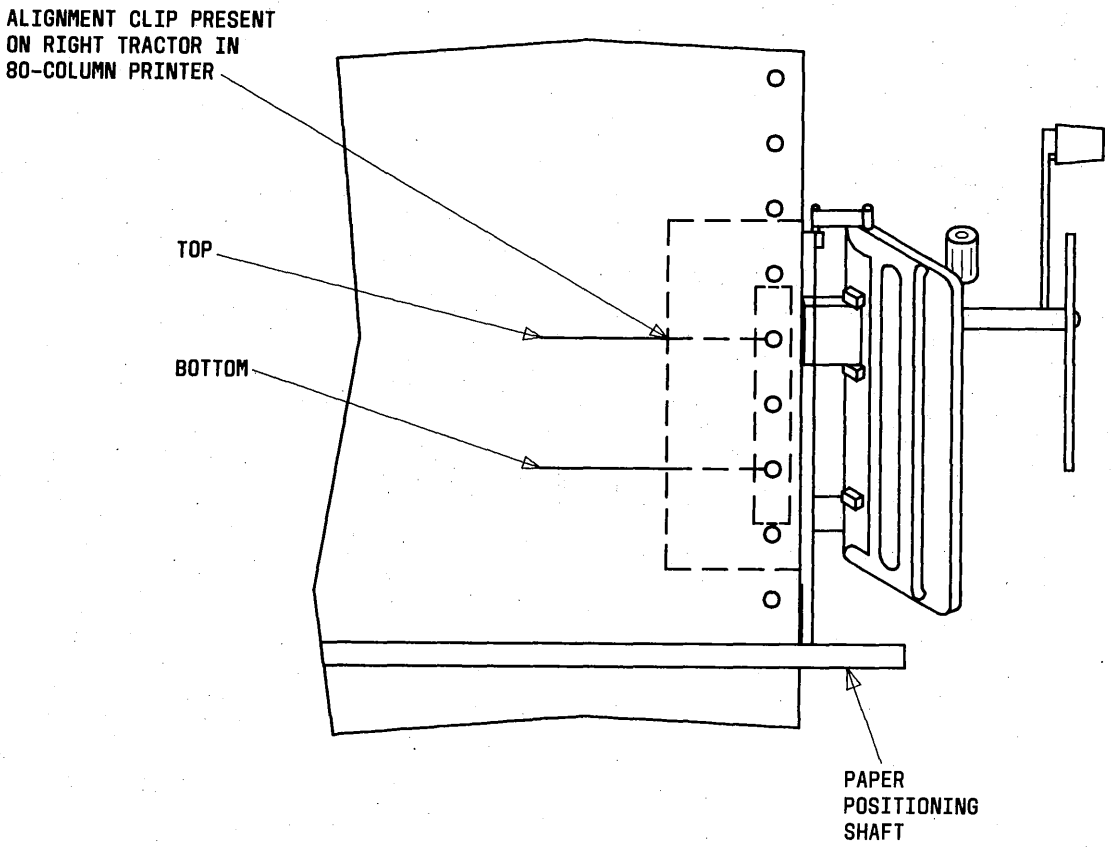

Fig. 21—DATASPEED 40 Printer Alignment Clip

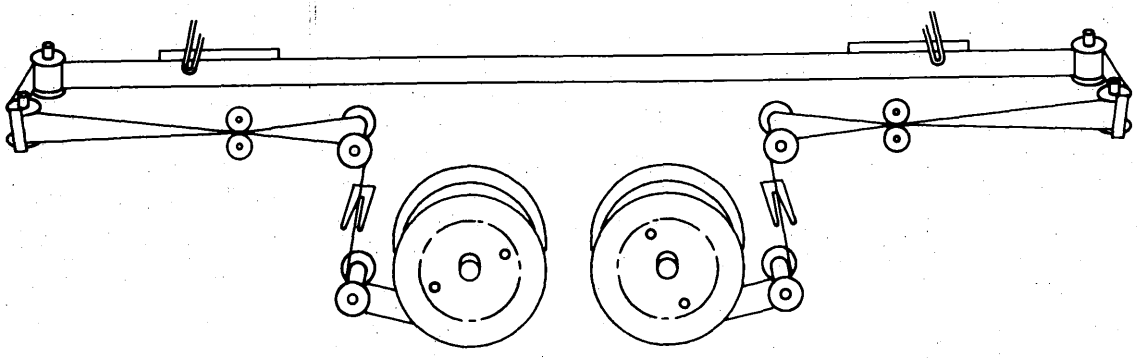

Fig. 22—DATASPEED 40 Printer Ribbon Assembly

10. VT100 TERMINAL SETUP PROCEDURES

10.01 The following describes the setup procedures for the VT100 terminal (Fig. 23 for Generic 1 sites and Fig. 24 for Generic 2 sites.) The Generic 1 setup procedures apply to Generic 2 sites if the special keycaps and lockout are not yet installed.

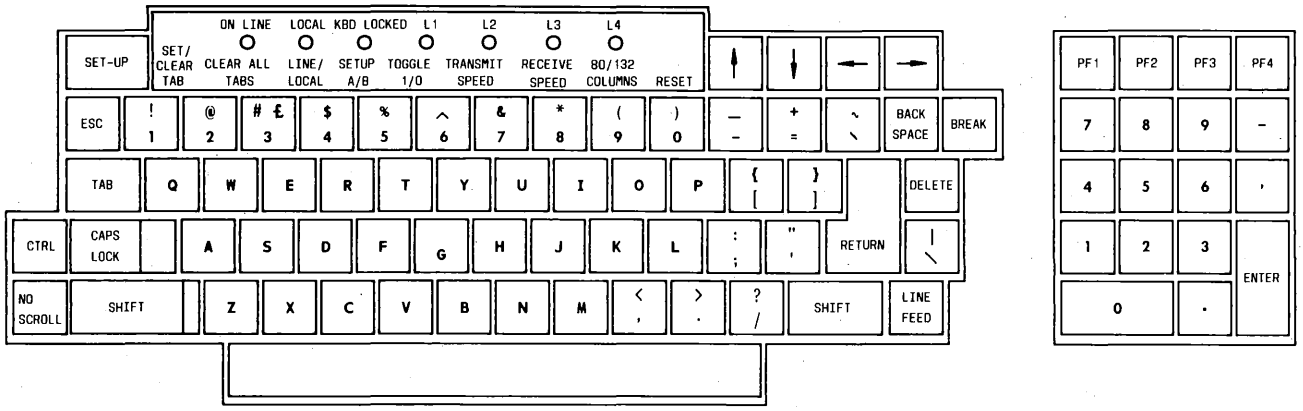

Fig. 23—VT100 Keyboard (Generic 1)

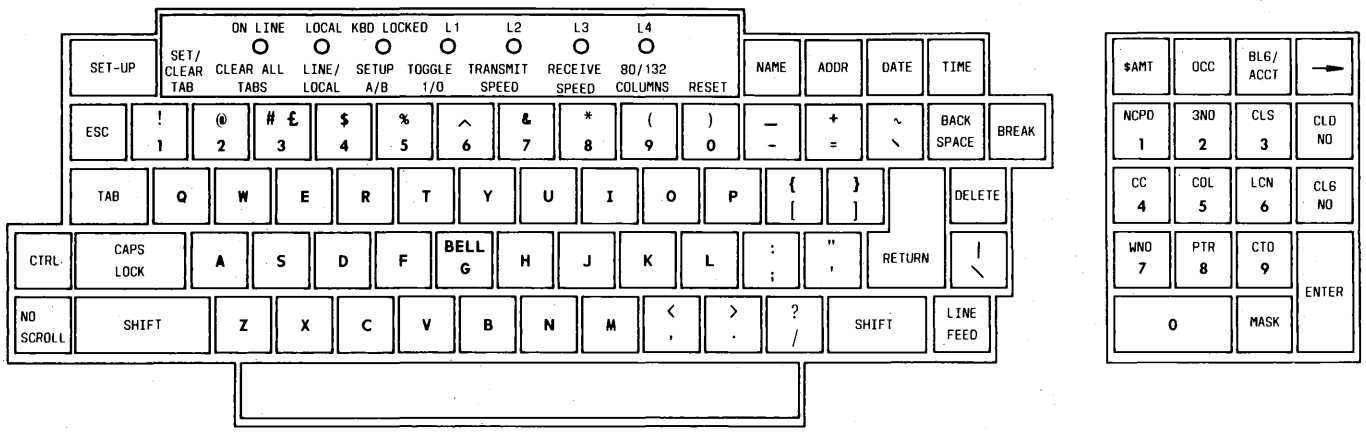

Fig. 24—VT100 Keyboard (Generic 2)

STEP	PROCEDURE
	Setup A
1	At rear of terminal cabinet, set power switch to on.
2a	If Generic 1, or if the special Generic 2 keycaps are not provided— Depress SET-UP key. Display shown in Fig. 25 is displayed.
3a	Depress the ↑ or ↓ key for the desired brightness.
4b	If the special Generic 2 keycaps are provided— Remove the SET-UP key and pull the lockout from the key. Replace the SET-UP key and depress it. Display shown in Fig. 25 is displayed.
5b	Depress the NAME or ADDR key for the desired brightness.
6	Depress the 9 key until 80 characters per line are displayed.
7	Depress the 3 key. This removes the tabs (T) on the display.
8	Depress space bar, →(Generic 1), or TIME (Generic 2) key eight times. This moves the cursor to the 8th position.

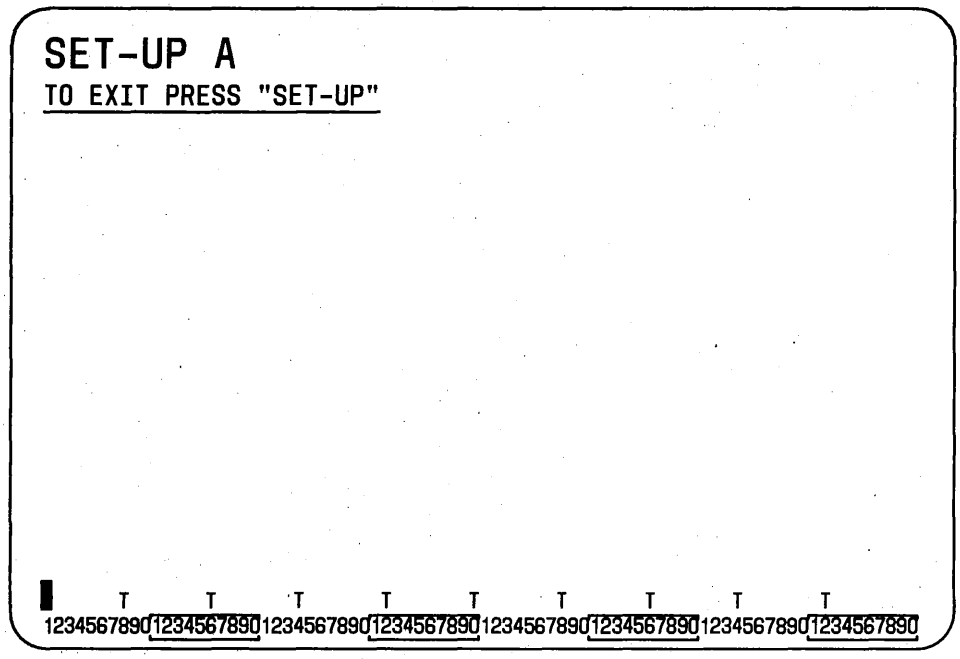

Fig. 25—Setup A Mode Presentation

STEP	PROCEDURE
9	Depress the 2 key. A tab (T) appears above the 8th position.
10	Repeat Steps 8 and 9 until nine tabs (T) are displayed.
11	Depress the RETURN key. This returns the tab to the first position.
12	Depress the 4 key. ON LINE LED extinguished and LOCAL LED lighted.
	Setup B
13	Depress the 5 key. Display is similar to one shown in Fig. 26.
14	Locate option (at bottom of display) to be changed by depressing the space bar, →(Generic 1), TIME (Generic 2), ←(Generic 1), or DATE (Generic 2) key until cursor is over the appropriate option. The available options set by the customer are shown in Fig. 27.
15	Depress the 6 key. This changes the 1 to a 0 or the 0 to a 1.
16	Repeat Steps 14 and 15 for other options.
17	Depress the 7 key continuously until a transmit (T) speed of 1200 is indicated.

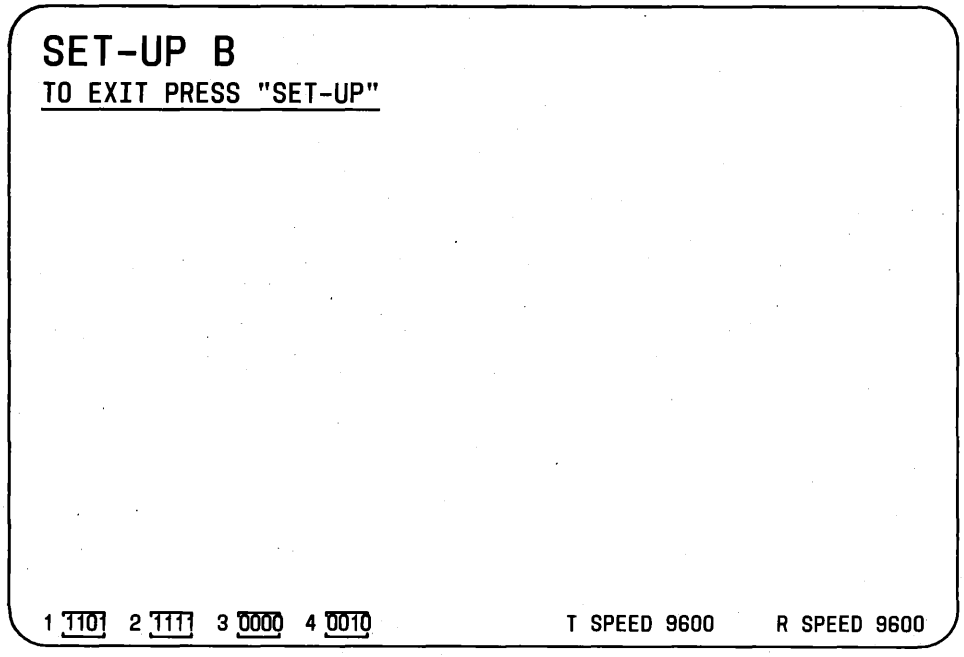

Fig. 26—Setup B Mode Presentation

STEP	PROCEDURE

Field 1	Scroll	(1) smooth	*(0) jump
	Autorepeat	(1) on	*(0) off
	Screen	(1) light	*(0) dark
	Cursor	*(1) block	(0) underline
Field 2	Margin bell	(1) on	(0) off
	Keyclick	(1) on	(0) off
	ANSI/VT52	*(1) ANSI	(0) VT52
	Auto Xon Xoff	(1) on	*(0) off
Field 3	Shift	(1) £	*(0) #
	Wrap around	*(1) on	(0) off
	New line	(1) on	*(0) off
	Interface	(1) on	*(0) off
Field 4	Parity sense	(1) even	(0) odd
	Parity	(1) on	*(0) off
	Bits per Char.	*(1) 8 bits	(0) 7 bits
	Power	(1) 50 Hz	*(0) 60 Hz

Note: The * indicates the required options.

Fig. 27—VT100 Available Options

18 Depress the 8 key continuously until a receive (R) speed of 1200 is indicated. The recommended options are shown in Fig. 28.

Saving or Recalling Setup Features

19 Depress SET-UP key. Display is shown in Fig. 25.

20c If setup features are to be saved—
Depress the SHIFT and S keys simultaneously. Display disappears, then **Wait** is displayed in the upper-left corner. After **Wait** disappears, Fig. 25 is displayed.

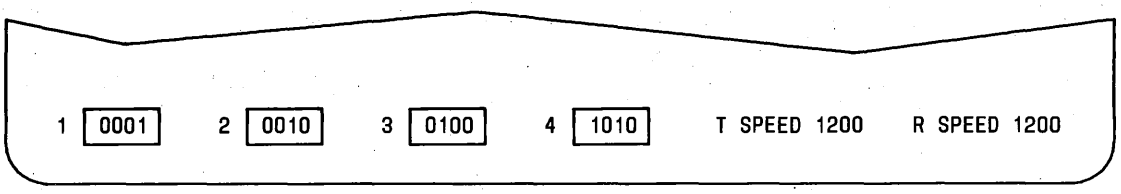

Fig. 28—VT100 Recommended Options

STEP	PROCEDURE
21d	If setup features are to be recalled— Depress the SHIFT and R keys simultaneously. Display disappears, then **Wait** is displayed in the upper-left corner. After **Wait** disappears, Fig. 25 is displayed.
22	Depress the 4 key. ON LINE LED lighted and LOCAL LED extinguished.
23	Depress SET-UP key. **LOGIN:** should be displayed.
24	Depress the RETURN key.
25b	If the special Generic 2 keycaps are provided— Remove the SET-UP key and insert the lockout under the key. Replace the SET-UP key and verify that it cannot be depressed.

11. LA120 "DEC"WRITER III TERMINAL PROCEDURES

11.01 Controls and indicators for operation of the DECwriter terminal are shown in Fig. 29 and listed in Tables E and F.

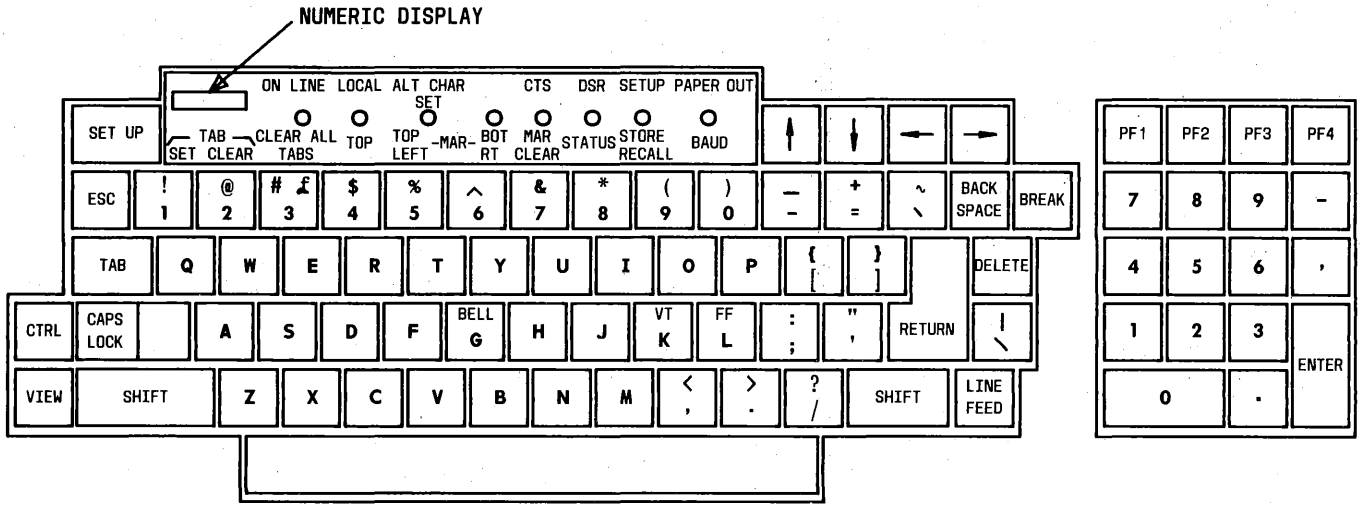

Fig. 29—LA120 DECwriter Terminal Controls and Indicators

TABLE E

LA120 "DEC"WRITER TERMINAL KEYS

KEYS	FUNCTION
SET UP	Is used to examine or change the terminal features.
LINE/LOCAL	Switches the terminal to or from line and local, as indicated by the line and local lights.
HERE IS	Transmits the answerback message.
LOCAL LINE FEED	Advances the paper one line at a time without transmitting a code to the host computer.
LOCAL FORM FEED	Performs a form feed without transmitting a code to the host computer.
ESC	Generates the code for escape.
BREAK	Transmits a break signal.
BACKSPACE	Generates the code for backspace.
TAB	Generates the code for space.
DELETE	Generates the code for delete.
CTRL	Modifies function of other keys when held down.
CAPS LOCK	Causes the 26 alphabetic keys to transmit shift codes, regardless of the position of the SHIFT key. The CAPS LOCK key does not affect numeric or other keys.
RETURN	Generates the code for carriage return or the codes for a carriage return and line feed sequence (in auto line feed mode). In half duplex with code turnaround, the RETURN key also generates the turnaround character following its normal code or codes.
VIEW	Allows the operator to view the last character printed.
SHIFT	Functions the same as a shift key on a typewriter.
LINE FEED	Generates the code for line feed.
ENTER	Same function as the RETURN key.

TABLE F

LA120 "DEC"WRITER TERMINAL INDICATORS

INDICATOR	MEANING
Numeric display	The numeric display indicates the next column number during normal operation. In setup mode the numeric display may also indicate line number, baud rate, form length, etc.
ON LINE	Indicates terminal on-line. Data is transmitted and received only while on line.
LOCAL	Indicates terminal is in local mode. Terminal does not transmit or receive data in this mode.
ALT CHAR SET	Indicates that an optional alternate character set, such as APL, is in use.
CTS	Indicates that transmission of data is enabled (clear to send).
DSR	Indicates that the modem is in data mode (data set ready).
SETUP	Flashes to indicate that the terminal is in setup mode.
PAPER OUT	Flashes to indicate that the printer is not ready, due to any of the following conditions: • Paper out • Cover open • Print head jam.

11.02 The procedures for loading paper and changing ribbon for the DECwriter terminal are given in Part 6. The following procedures describe the method for setting up the DECwriter terminal and checking the printer.

STEP	PROCEDURE

A. Setup Procedure

1 Repeatedly depress LINE LOCAL key until LOCAL lamp lights.

2 Depress and hold CTRL key while depressing SET UP key. The SET UP lamp should flash. Release keys; lamp continues to flash.

3 Set perforation of form halfway between the line indicator and the top of print head using paper adjust knob (Fig. 30).

4 Depress and hold SHIFT key while depressing 4 key to set top of form.

5 Depress and hold SHIFT key while depressing £ /3 key to clear horizontal and vertical tabs.

6 Repeatedly depress R key until numeric display indicates either of the following:

- 0 for no automatic character repeating
- 1 for automatic character repeating.

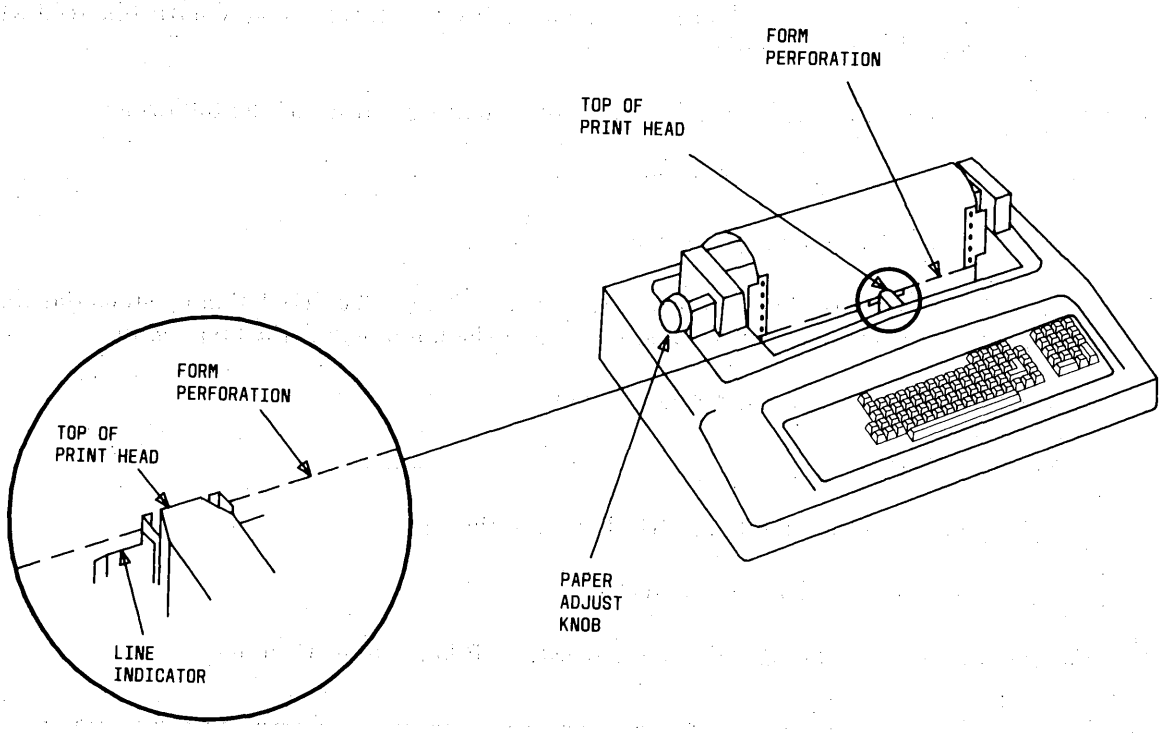

Fig. 30—LA120 DECwriter Terminal Setting Top-of-Form Margin

STEP	PROCEDURE
7	Repeatedly depress G key until numeric display indicates either of the following: • 0 for a low bell volume • 1 for a high bell volume.
8	Repeatedly depress K key until numeric display indicates either of the following: • 0 for a silent keyboard • 1 for a key click.
9	Repeatedly depress B key until numeric display indicates either of the following: • 0 for a small buffer when used as an interactive DECwriter • 1 for a large buffer when used as a printer only.
10	Repeatedly depress E key until numeric display indicates 1 to permit character to be transmitted and printed.
11	Repeatedly depress L key until numeric display indicates 1 to add an automatic line feed whenever the RETURN key is depressed.
12	Repeatedly depress M key until numeric display indicates either of the following: • 1 for a full duplex, no modem • 2 for a full duplex with modem.
13	Depress and hold SHIFT key while depressing the '/9 key. The SET UP lamp stops flashing to indicate that all settings have been stored. Then the lamp begins flashing again.
14	Depress LINE LOCAL key. LINE lamp lights.
	B. Printer Self-Test
1	Depress CTRL and SET UP keys. SET UP lamp flashes.
2	Depress T key. A self-test pattern prints.
3	To stop the self-test, depress SET UP key. SET UP lamp stops flashing.