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Title:

RC3641/42/43 Line Printer
Operating Guide

Keywords:

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Abstract:

A brief description of the controls and their functions and of the operating procedures is given. Further, supplementary notes are included, for instance on maintenance.

(22 printed pages)

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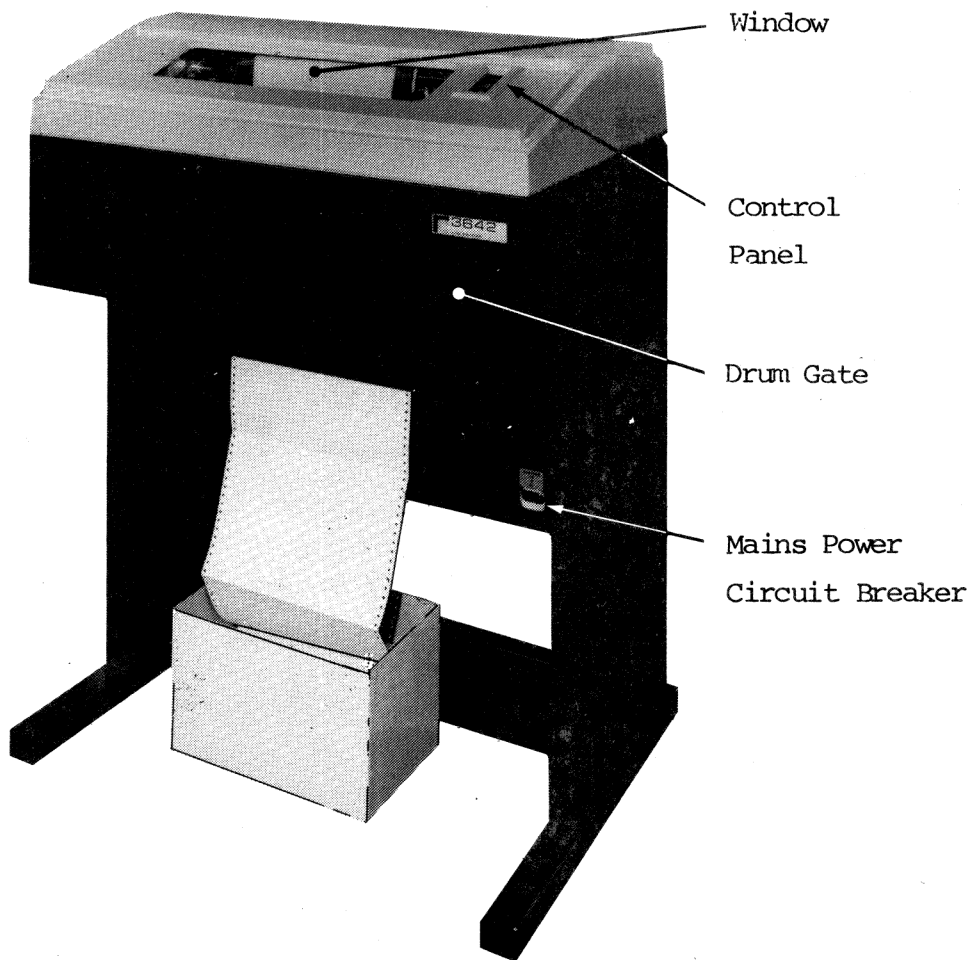


Figure 1: The line printer.

The mains power is switched on/off by means of the mains power circuit breaker located as shown. Note that the power-on switching always must be manually performed after having switched power on to the computer system (due to start peak currency).

The control panel can be attended directly whereas the top cover and the drum gate have to be opened in order to load paper, to adjust print position, etc. Caution: Opening the drum gate will expose rotating parts; wait for the rotation to stop before entering any operating procedures.

2. OPERATING CONTROLS

2.

2.1 Control Panel

2.1

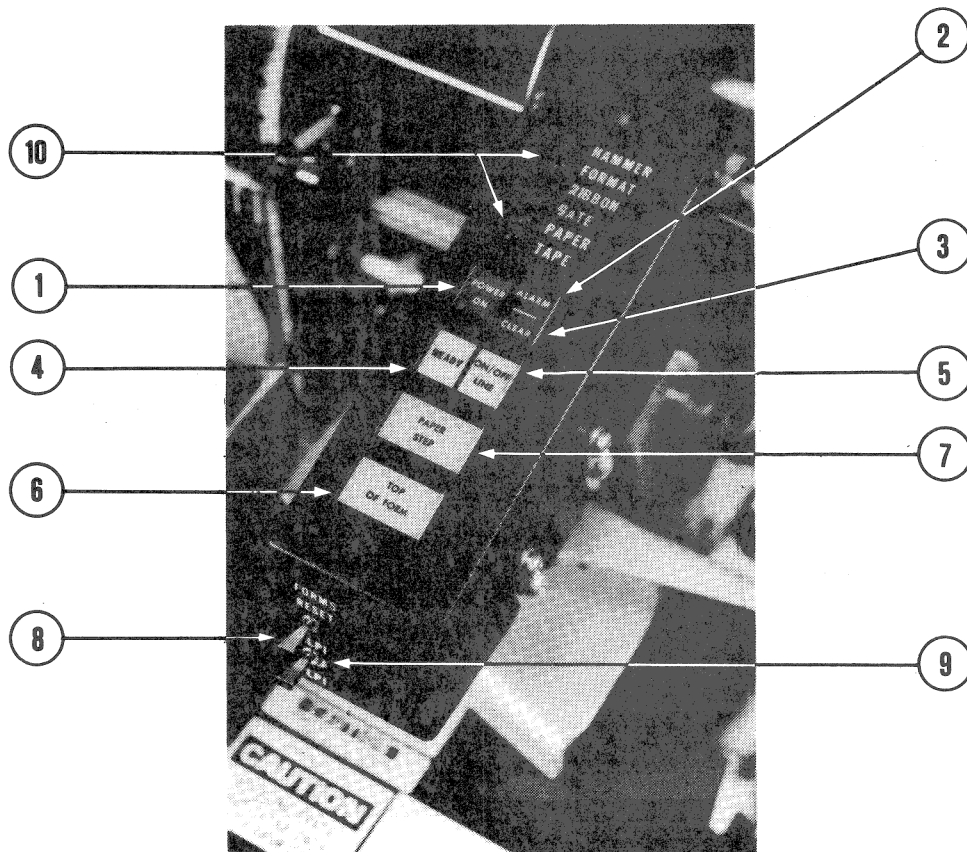


Figure 2: Control panel.

- | | |
|--------------------------|---|
| 1) POWER ON
indicator | - lights when power is applied to printer. Power must always be manually switched on/off with the mains power circuit breaker (see fig. 1). |
| 2) ALARM
indicator | - when lit indicates that a fault condition exists. A fault condition takes the printer off-line. |
| 3) CLEAR
switch | - pressing the CLEAR switch will master clear the printer logic. |

- 4) READY indicator
 - when lit indicates that no fault condition exists and that the printer is ready to be placed on-line.
- 5) ON/OFF LINE push-button/indicator
 - switches the printer on-line or off-line. The printer is on-line when the switch is illuminated. At initial power up the indicator will be off.
- 6) TOP-OF-FORM push-button
 - pressing the TOP-OF-FORM push-button advances the paper to the top of the next form. This control functions only when the printer is off-line.
- 7) PAPER STEP push-button
 - pressing the PAPER STEP switch advances the paper to the next line. This control only functions when the printer is off-line.
- 8) FORMS RESET switch
 - when held in the down position allows the paper to be repositioned with the VERTICAL ADJUSTMENT (COARSE) control when power is on.
- 9) 6 LPI / 8 LPI selector switch
 - for selecting vertical spacing of six lines per inch or eight lines per inch.
- 10) Fault indicators
 - when lit the fault conditions indicated are as follows:

HAMMER	- fault in the hammer circuitry;
FORMAT	- fault condition in the format controller - to reset use the FORMS RESET switch (8);
RIBBON	- fault in ribbon motor or torn ribbon;
GATE	- drum gate is unlatched;
PAPER	- paper is out or paper is torn;
TAPE (optional)	- fault in VFU (Vertical Format Unit).

2.2 Paper Transport Unit

2.2

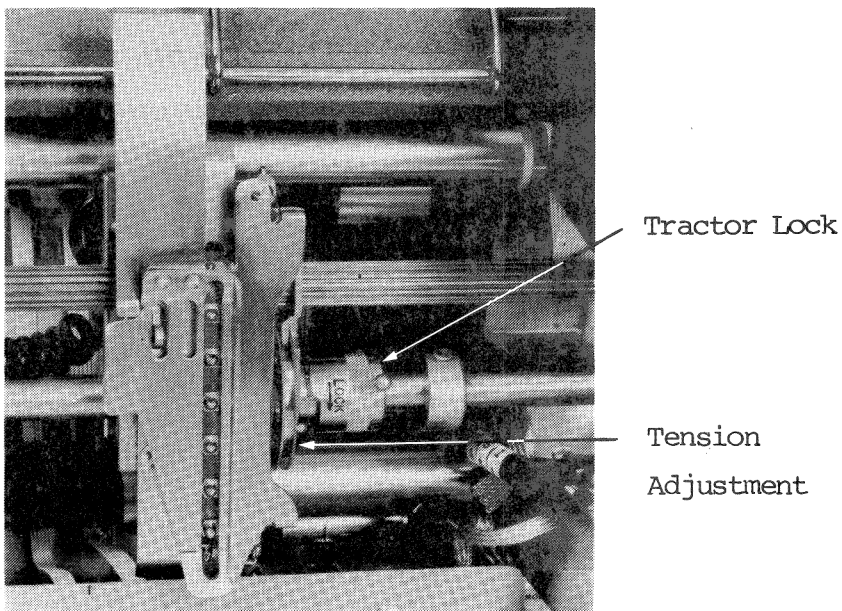


Figure 3: Paper transport; right-hand tractor.

The supply of print forms is positioned at the printer front below the drum gate. During printing the paper is advanced through the printer by means of the tractors and the print-outs leave the printer to the rear.

Paper is loaded to the sprocket belts of the tractors by opening the pressure plates, inserting the paper, and closing the pressure plates.

The tractors can be moved laterally when unlocking the tractor locks. Small corrections of the tractor positions, especially to achieve correct horizontal paper tension, can be accomplished using the tension adjustment wheels. Correct paper tension will cause the sprocket holes to be slightly deformed.

2.3 Printing Adjustment Controls

2.3

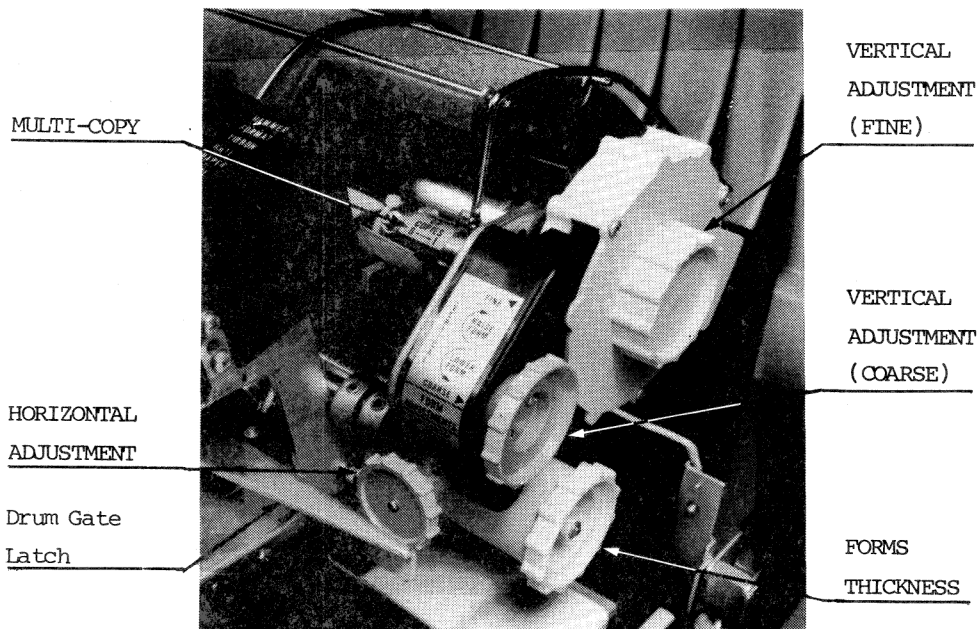


Figure 4: Printing adjustment knobs.

The position of the print form can be adjusted to obtain printing at precisely predetermined positions. The print form can be moved vertically and horizontally by means of the following adjustment knobs (located to the right of the control panel as shown in fig. 4):

VERTICAL ADJUSTMENT
(COARSE)
handwheel

- allows the operator to position the form in predetermined increments. To make a coarse adjustment, the FORMS RESET switch must be held in the down position.

VERTICAL ADJUSTMENT
(FINE)
handwheel

- permits adjustment between the increments of the coarse adjustment. To make a fine adjustment, the FORMS RESET must be in the up position.

HORIZONTAL ADJUSTMENT
handwheel

- permits fine adjustments of the horizontal position of the form (coarse adjustments should be obtained by moving the tractors).

Controls are further provided for the following adjustments:

FORMS THICKNESS
handwheel

- located below the VERTICAL ADJUSTMENT (COARSE) handwheel (see fig. 4). Used to adjust the spacing between the character drum and the hammer bank between which the paper moves. This adjustment is used to compensate for the thickness of multipart forms. Position is indicated by MULTI-COPY indicator.

(MULTI-COPY)
scale

PHASE ADJUSTMENT

- located above the logic enclosure (see fig. 5). Allows the operator to adjust the hammer firing to maintain equal print density at the top and bottom of the character.

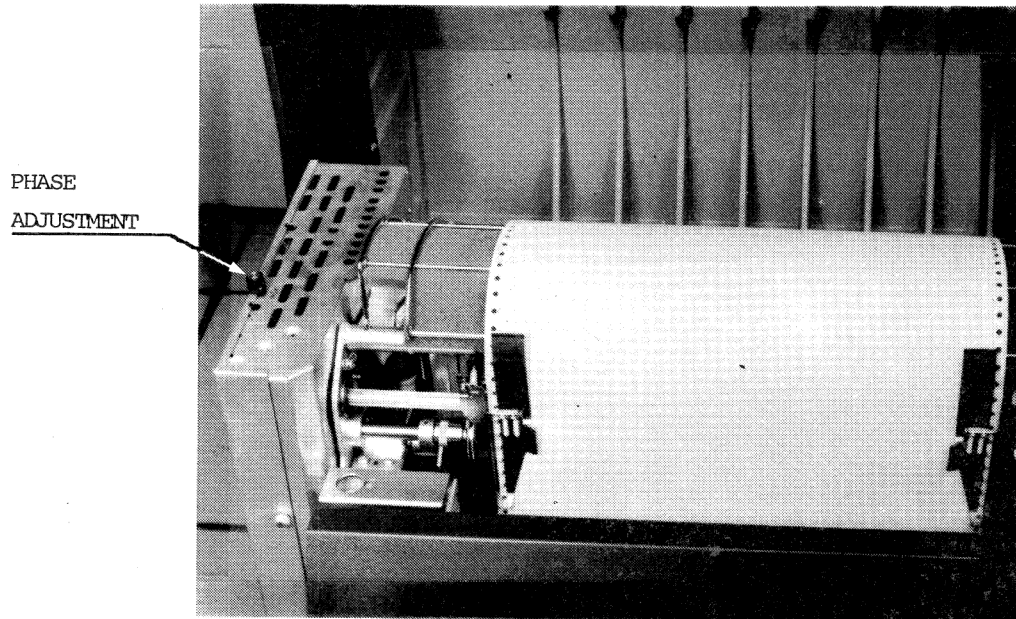


Figure 5: Phase adjustment.

2.4 Vertical Format Unit

2.4

See 4.1: VFU Tape Programming, and 3.2: Loading the VFU Tape.

2.5 Colour Ribbon

2.5

See 4.2: Colour Ribbon Replacement.

3. OPERATING PROCEDURES

3.

3.1 Power On/Off

3.1

Power on/off is controlled with the mains power circuit breaker and is indicated at the control panel by the POWER ON indicator.

Note: Power to the printer must always be switched on after having switched on power to the computer system. To maintain this succession, power should be switched off at the printer before switching off the system.

If the colour ribbon, the VFU tape and the paper forms are ready for operation, the printer is taken on-line using the ON/OFF LINE push-button.

3.2 Loading the VFU Tape

3.2

Having programmed the VFU tape as outlined in 4.1, the tape is loaded as follows:

1. Using the ON/OFF LINE push-button, the printer is taken off-line.
2. Open the printer top cover. Lift the tape loop reader handle until the drive sprocket shoe clears the drive sprocket teeth.
3. Place the tape loop over the tape loop reader capstan and fit the tape drive holes over the drive sprocket teeth with channel 1 towards the front of the printer (see fig. 6).
4. Close the tape loop reader and ensure that the tape remains properly attached to the drive sprocket while the drive sprocket shoe clamps it in place.
5. Press the TAPE START switch, and the tape will load.

6. Ensure that paper and ribbon are properly installed.
7. After the cover is secured and the door closed, the printer is ready to operate.

Note: With no tape loop installed, tape loop instructions will behave as if all holes are punched in all channels.

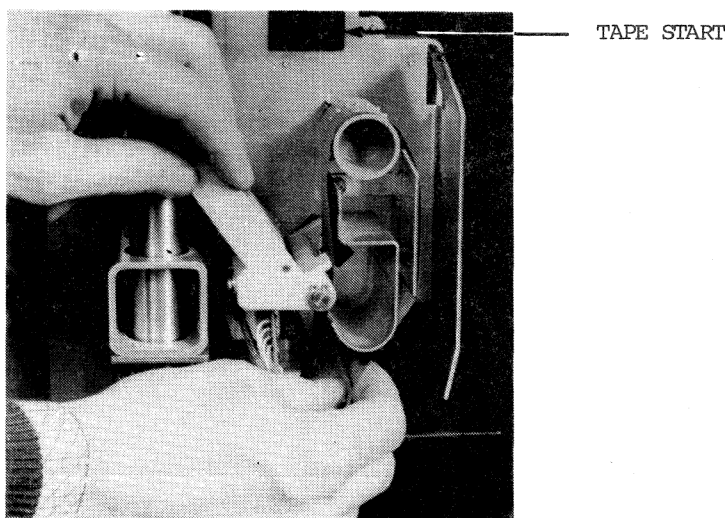


Figure 6: Loading the VFU tape.

3.3 Loading the Paper Form

3.3

1. Switch power on, but let the printer stay in the off-line mode.
2. Press and release the TOP-OF-FORM push-button (whereby the tractors are advanced to the top of form position).
3. Lift the printer cover and open the drum gate (for position of drum gate latch, see fig. 4).

CAUTION: Wait for character drum to stop rotation before proceeding to the next step.

4. Open the spring-loaded pressure plates on the tractors.

5. Place the paper in the tractors and close the pressure plates.
If necessary, loosen the tractor locks and move the tractors laterally to adjust for correct paper width and for coarse horizontal positioning of paper form. Tighten the tractor locks. Adjust for correct lateral paper tension (sprocket holes slightly deformed) using thumbwheels.
6. Align the paper perforation to the top of form position by depressing FORMS RESET switch and rotating the tractor shaft using the VERTICAL ADJUSTMENT (COARSE) handwheel.
7. Fine adjustments of the paper form can be accomplished using the VERTICAL ADJUSTMENT (FINE) and the HORIZONTAL ADJUSTMENT handwheels. To support the adjustments the print line index and the left margin index are provided as indicated in fig. 7.

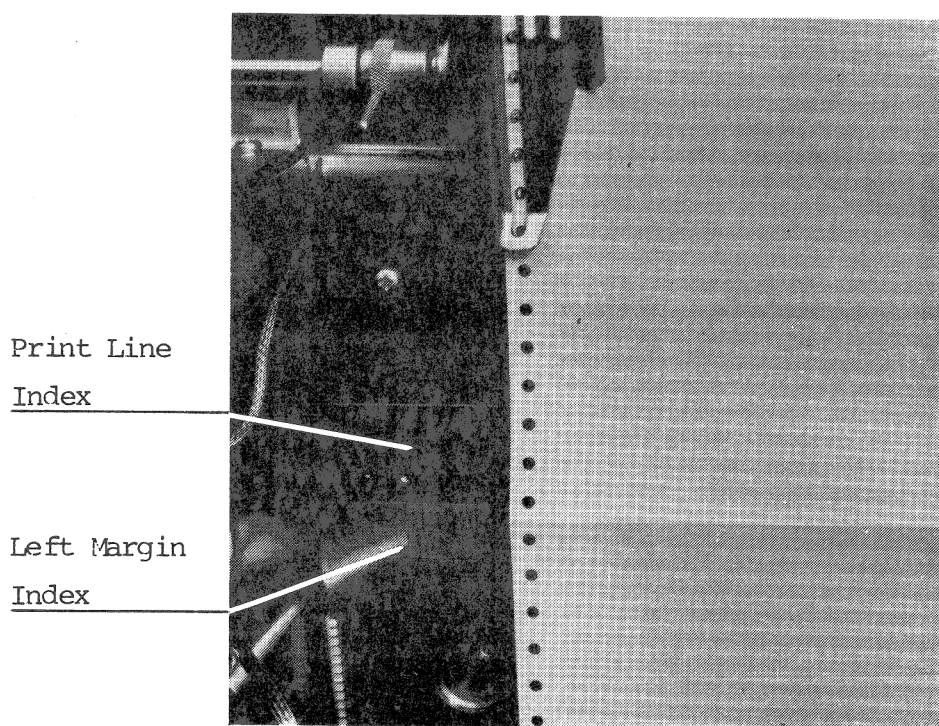


Figure 7: Adjustment indexes.

8. Also check that the FORMS THICKNESS control as indicated by the MULTI-COPY scale (see fig. 4) is set correctly for the form being used.

9. Close the drum gate and lower the printer cover.
10. The READY indicator should now light and the printer is ready to be taken on-line.

4. SUPPLEMENTARY INFORMATION

4.

4.1 VFU Tape Programming

4.1

The printer applies a 12-channel tape in the vertical format unit (VFU). The VFU tape can be programmed as follows using a hand punch device:

1. Calculate the length of the VFU tape using the following:
 - a) number of holes in VFU tape = $6 \times \text{length of the form in inches}$ for forms requiring 6 lines per inch,
 - or
 - b) number of holes in VFU tape = $8 \times \text{length of the form in inches}$ for forms requiring 8 lines per inch.
2. Place the VFU tape in the hand punch device and punch a hole in channel 1 corresponding to top of form.

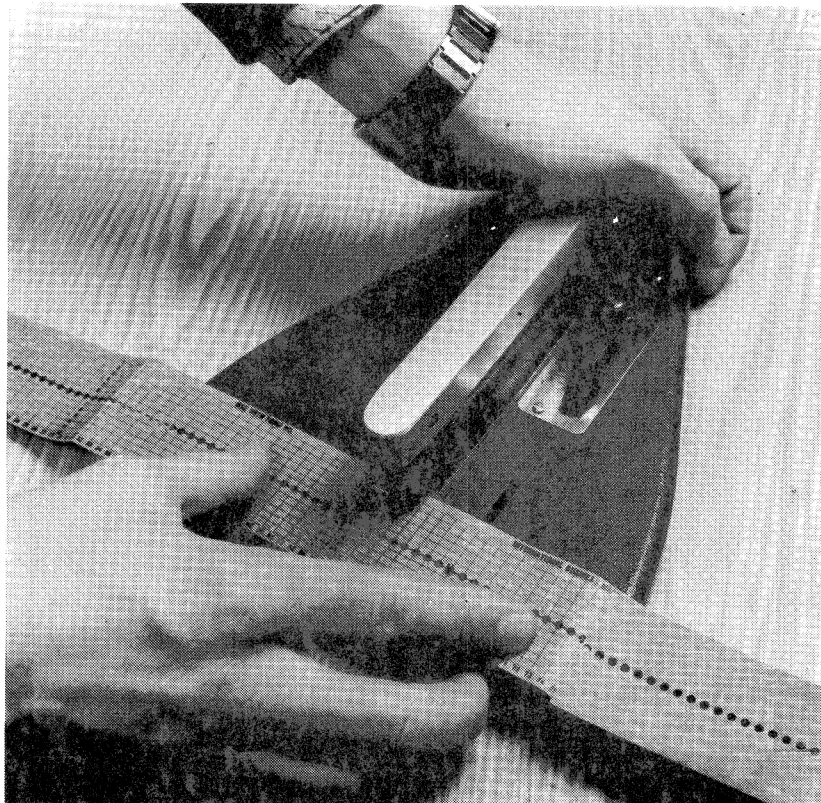


Figure 8: Hand punch device.

3. If vertical tab hole(s) are required then count forward to the desired point and punch a hole in any other channel except channel 1. The actual channel used depends on the print-out program.
4. Count forward to the next vertical tab position, if more are required, and punch a hole in another channel.

Note: The VFU tape loop should be a minimum of 10 inches in circumference. If the form is too short, make the VFU tape loop two or three form lengths long to permit the tape loop to ride freely on the tape loop reader.

Having programmed the tape, it is spliced the following way:

5. Overlap the two ends of the tape so that the sprocket holes coincide to properly align the two ends. Take care to ensure that the length of the tape (in number of holes) is equal to (or a multiple of, in the case of two or more forms on one VFU tape) the form length in lines.
6. Glue the ends of the tape together or secure with adhesive splicing tape.

The VFU tape can then be loaded as described in 3.2.

4.2 Colour Ribbon Replacement

4.2

To remove the old ribbon and load a new one, proceed as follows:

1. Lift the printer cover, and swing the drum gate fully open.

CAUTION: Wait for the character drum to stop rotating before proceeding to the next step.

2. Holding the paper tensioner with one hand (see fig. 9), pull the paper tensioner plunger knob, and remove the paper tensioner from drum gate.

3. Using the gloves provided, remove the old ribbon by pushing the upper ribbon core against the ribbon core spring. Repeat for lower ribbon core.

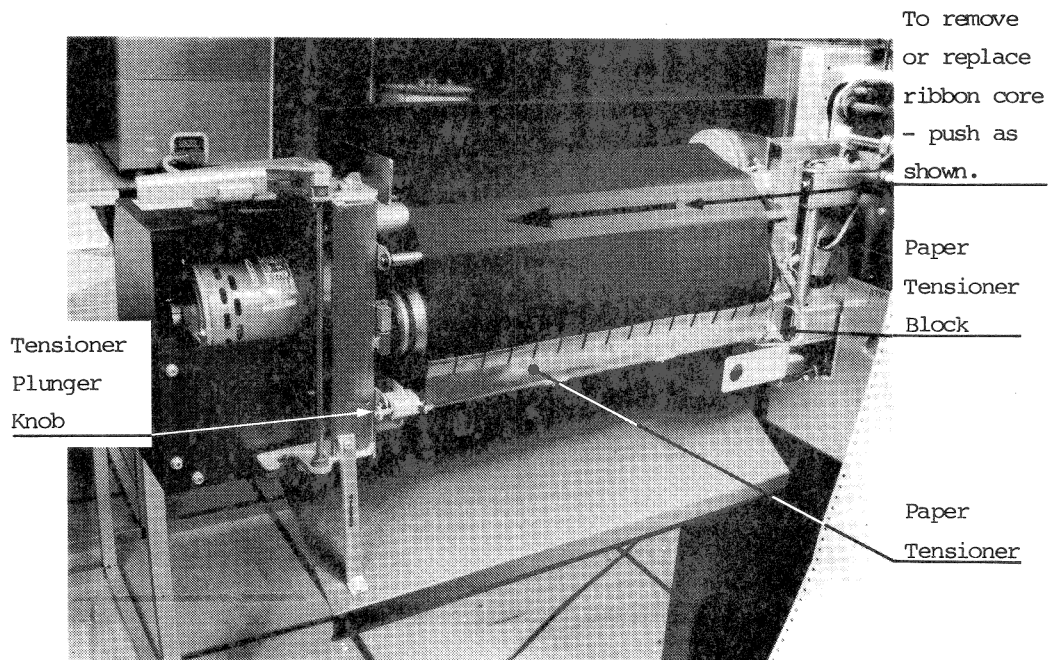


Figure 9: Drum and ribbon assembly.

4. Still using the gloves provided, hold the ribbon cores together and remove the new ribbon from the box.

Note: The ribbon is installed so that it unwinds from top of core.

5. Place the fully wound ribbon core over the top floating ribbon holder.
6. Push the ribbon core against the floating ribbon holder spring and place the opposite ribbon core end over the top fixed ribbon holder. Ensure that the holder guide pin slips into the slot on the core end.
7. Unwind the second ribbon core and bring the ribbon down over the character drum and the ribbon guide bars. Once in position, install the ribbon core on bottom ribbon holders as outlined for the upper ribbon core.

8. Install the paper tensioner by inserting the paper tensioner block into position and pushing the tensioner against the tensioner knob indexing slot while pulling the knob to allow slot engagement. Once engaged, release knob.
9. If printer paper is installed, close and latch drum gate; lower printer cover. If power is on, press the CLEAR switch.

4.3 Maintenance

4.3

1 time per week (per 40 running hours)

The paper transport mechanism and the area around it is cleaned using a vacuum-cleaner.

The print drum is cleaned using a brush damped with isopropyl alcohol. Afterwards the drum is wiped with a lintfree cloth.

Do not use too much fluid; the excessive fluid may easily penetrate the bearings and damage these.

The colour ribbon guides are cleaned using a cloth damped with isopropyl alcohol.

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