

FIGURE 1 LOCATION OF COMPONENTS (1)

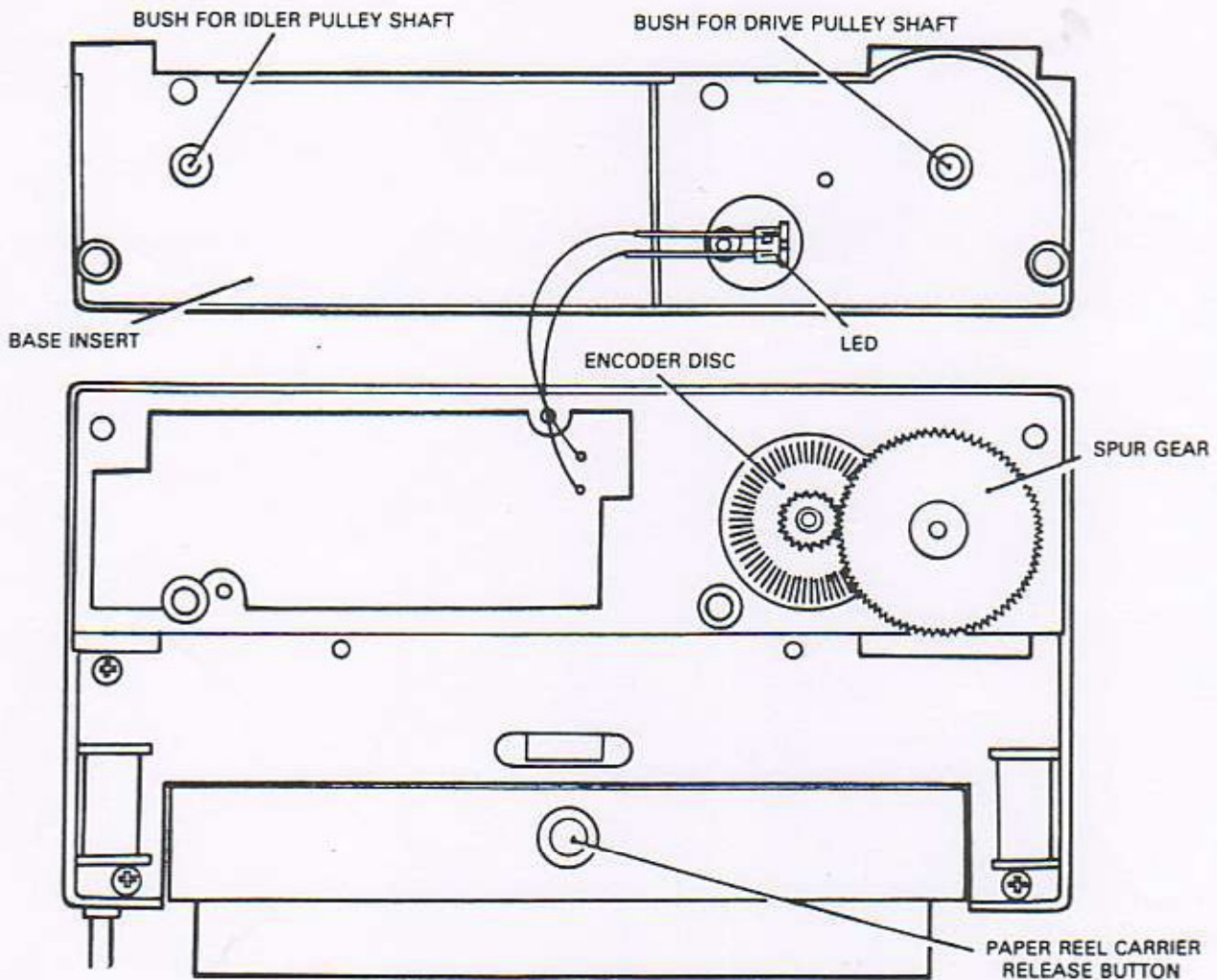
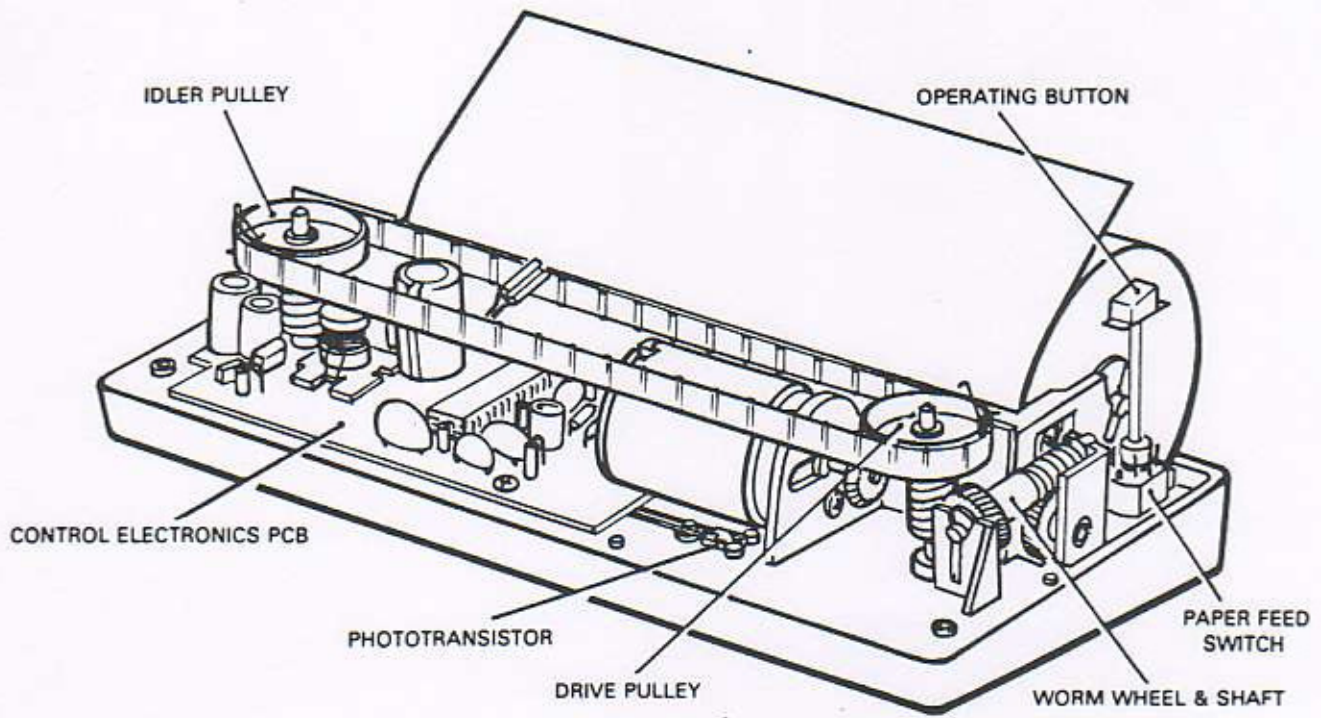


FIGURE 2 LOCATION OF COMPONENTS (2)

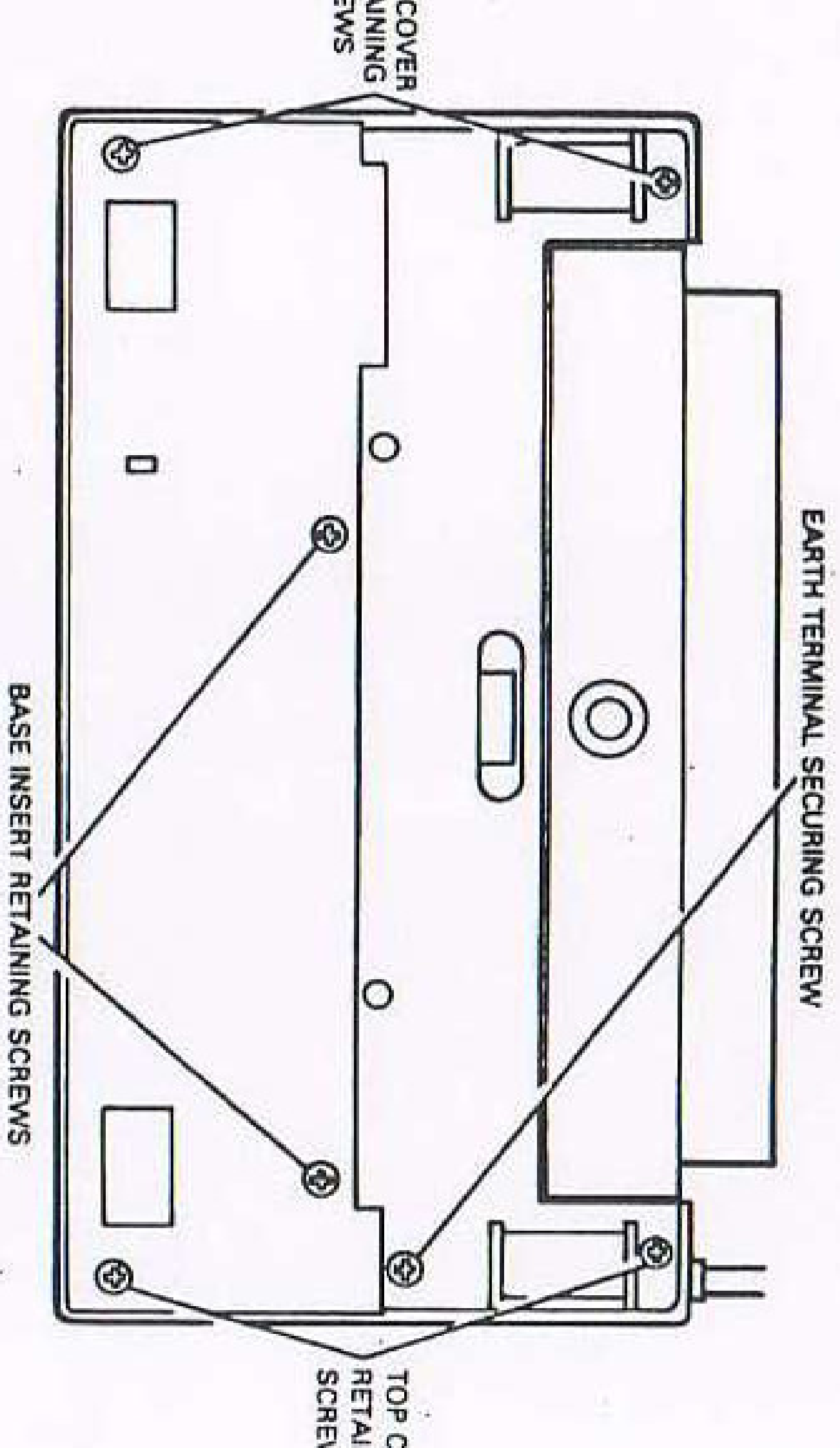
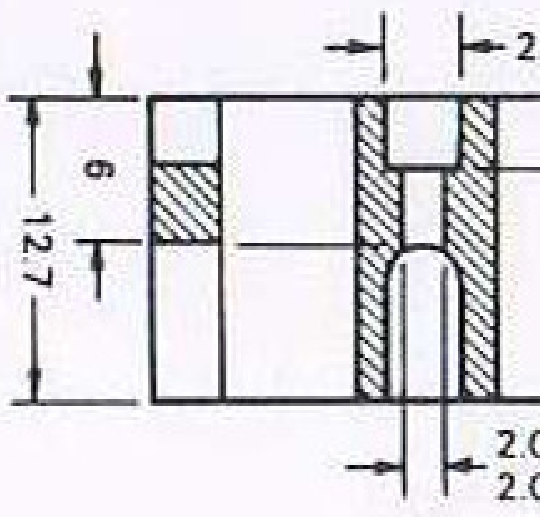
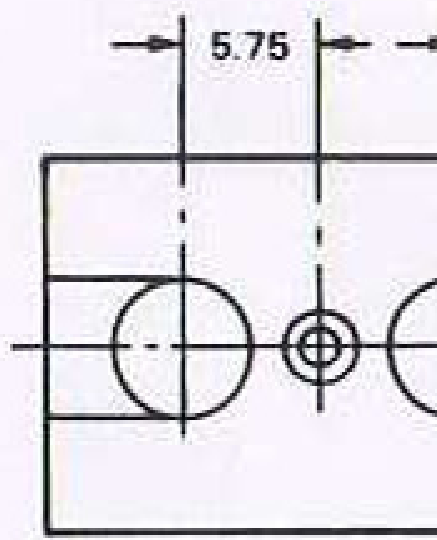
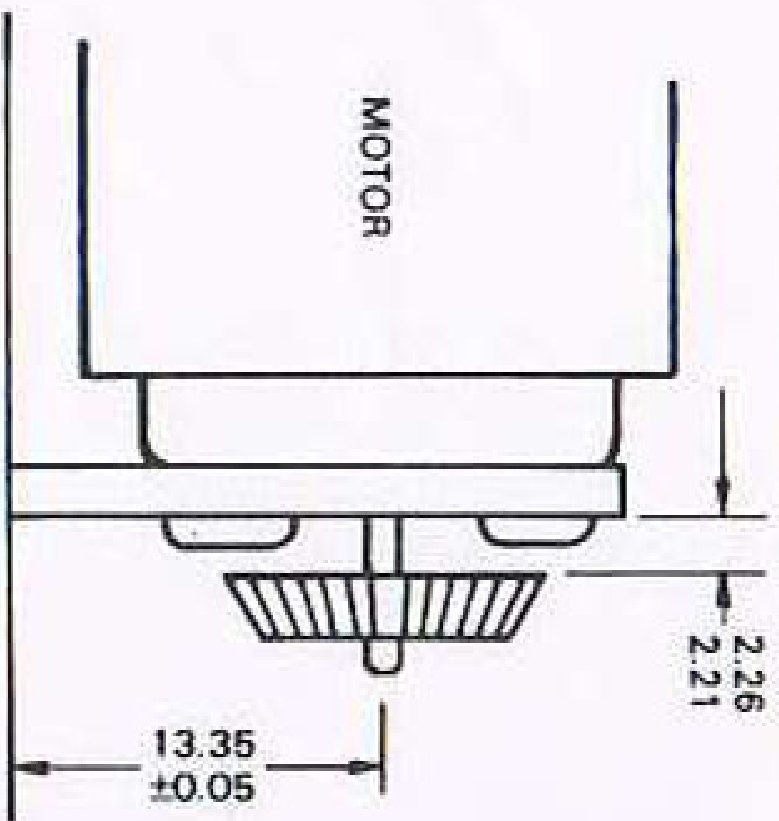
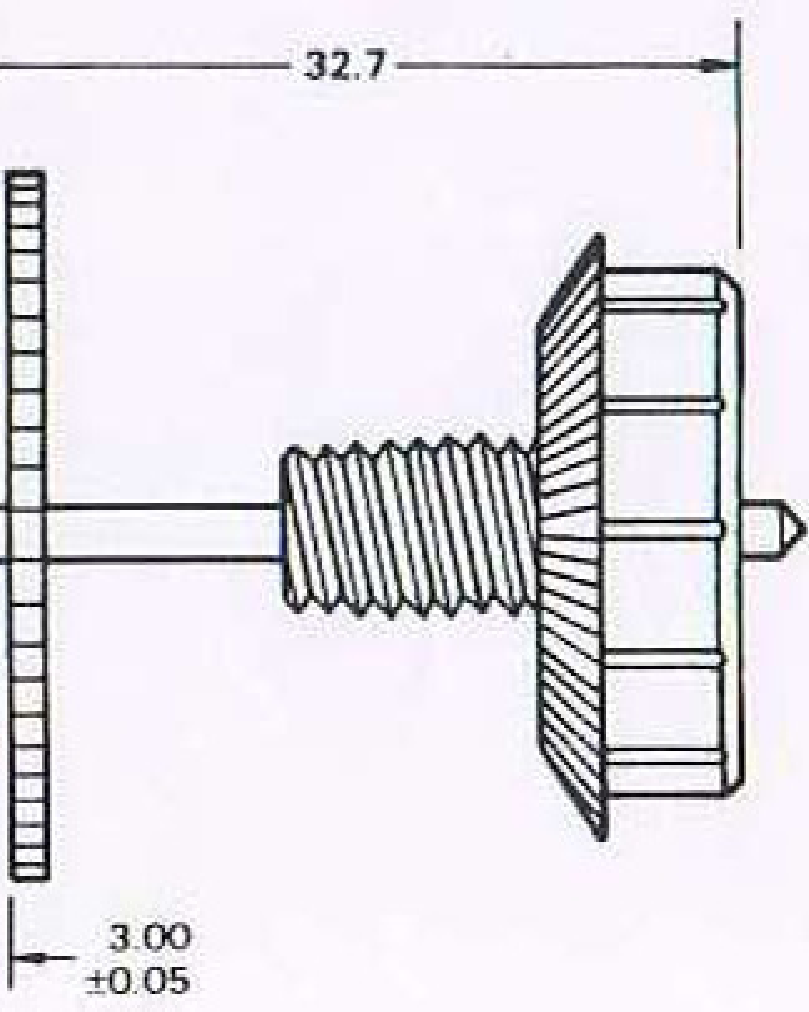


FIGURE 3 TOP COVER & BASE INSERT ATTACHMENT POINTS



Suggested jig for vertical setting of motor in early printers.

All dimensions are in millimetres



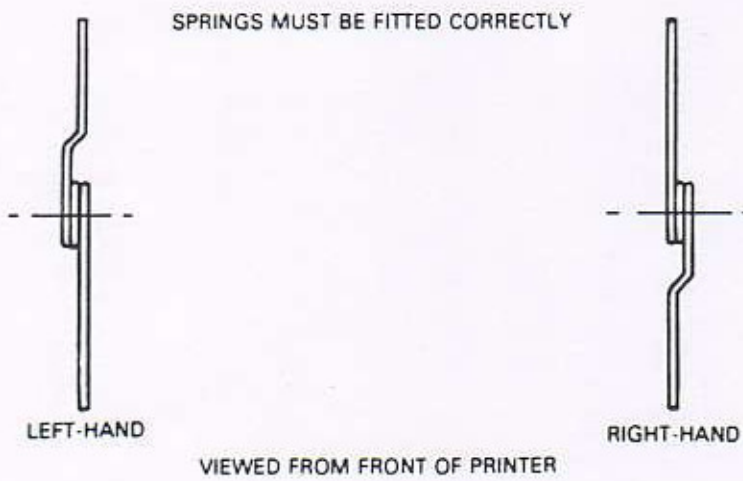
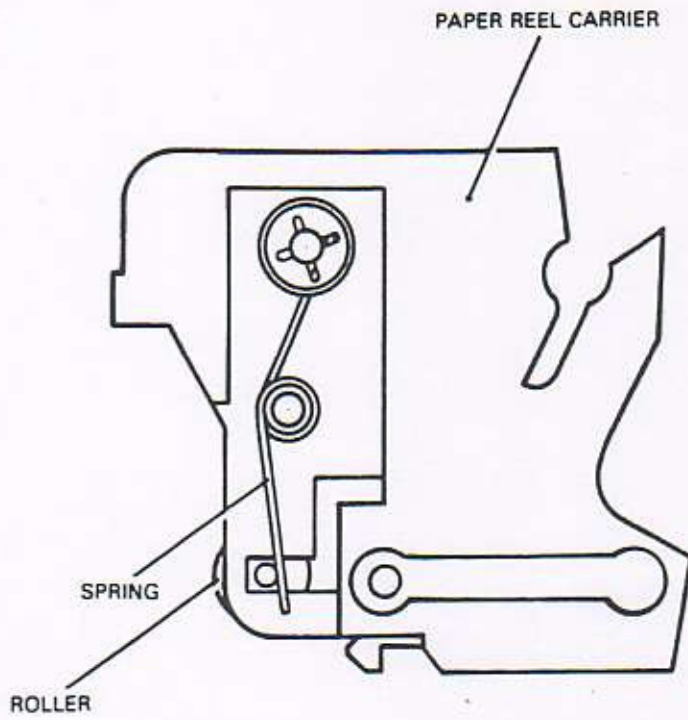


FIGURE 5 PINCH ROLLER SPRINGS

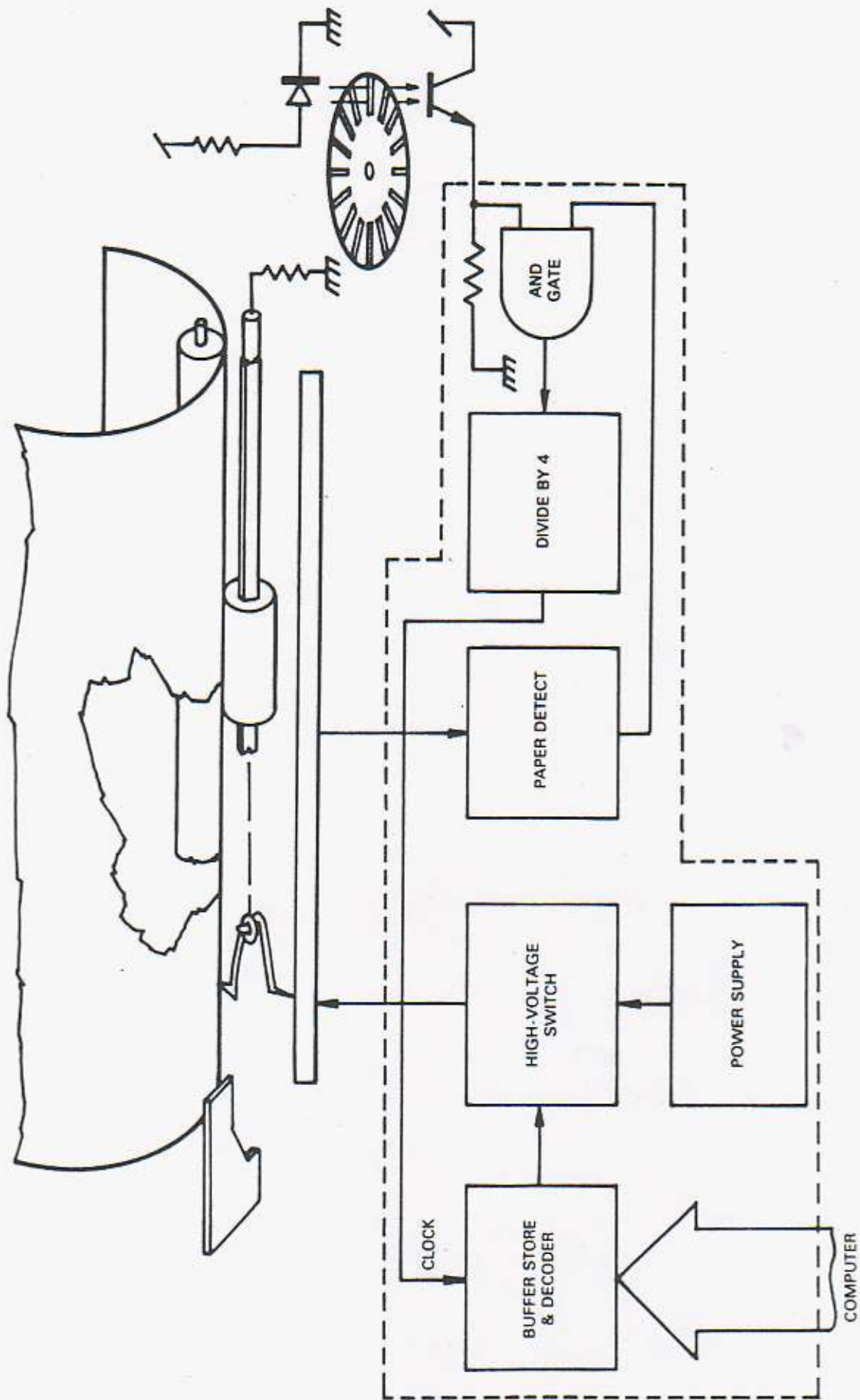
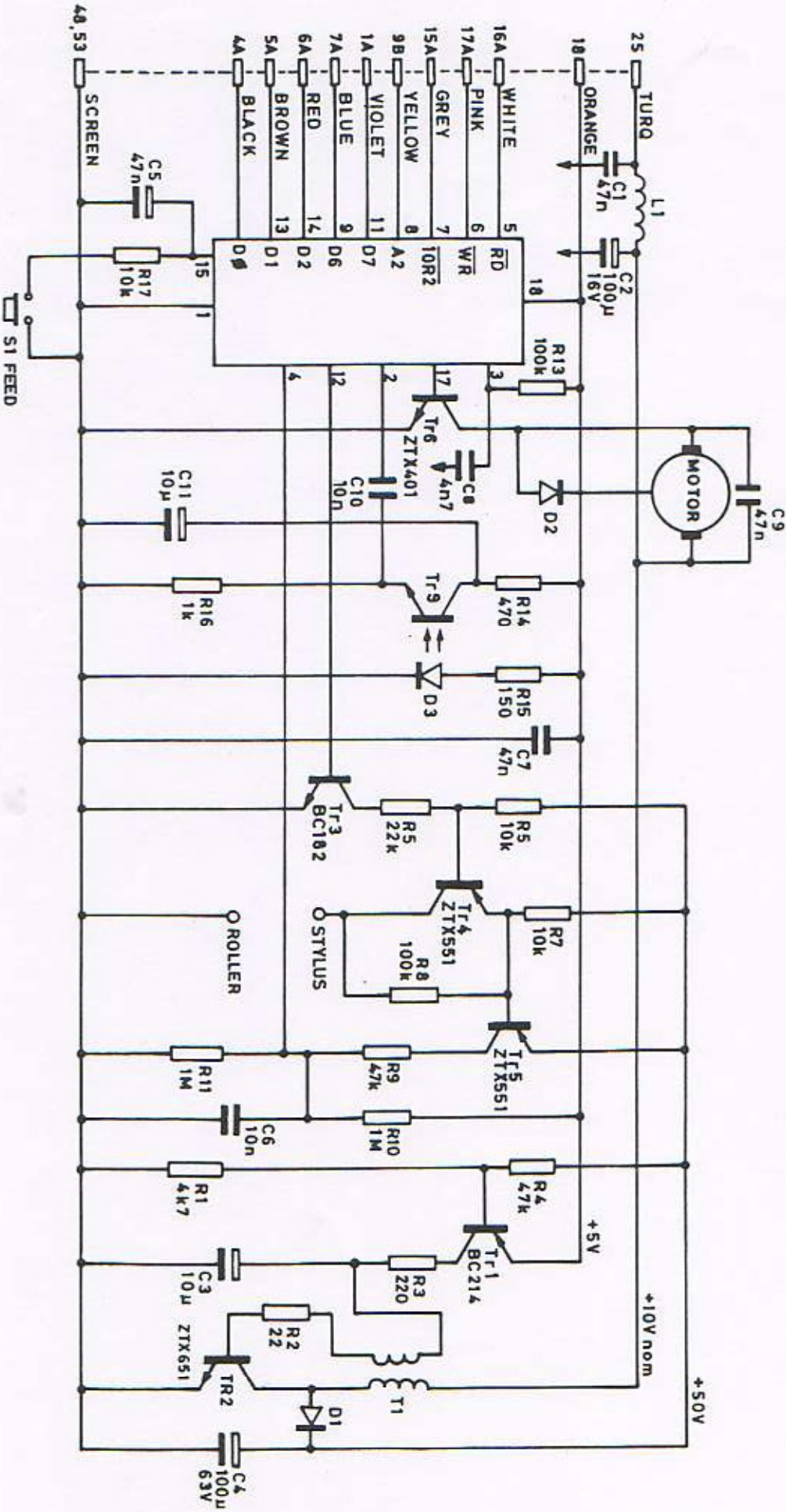


FIGURE 6 LOGIC CIRCUIT DIAGRAM

FIGURE 7 CIRCUIT DIAGRAM



## **WARNING**

Equipment generates and uses radio frequency energy and if not installed and used properly, the interference it causes may exceed the limits allowed by the FCC. The equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the requirements of subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against interference to residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reposition the receiving antenna.

• Reposition the printer with respect to the receiver.

• Move the printer away from the receiver.

• If the printer power supply into a different outlet so that printer and receiver are on different branch circuits, the user should consult the dealer or an experienced radio-television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

## **TIMEX**

**Computer Corporation**

**Waterbury, Connecticut 06725**



**TIMEX**

**signal**

**Personal F  
Oppe  
M**

**TIMEX** ■ **signal** ■ **810140**

**ON**  
**OFF**  
**ON**

## CAUTION

The 2040 Personal Printer gives a permanent finish to anything your Timex Sinclair Computer can print on the TV screen.

When used with the printer are 1) these instructions, 2) a roll of paper and 3) a power supply unit.

## CAUTION

The printer is enclosed in an extra-protective ABS plastic molded case which is highly resistant to impact damage. The transparent paper cover is also made of ABS. The fine matte case finish requires special care, and should be handled with necessary care, and should be cleaned with a damp cloth. Do not use any harsh or wax cleaner.

**Figure 1** illustrates the major components of the printer. The paper cover (1) is hinged to permit the paper to be loaded and positioned.



For more information on the printer, see the manual or contact your local retailer for important FCC information.

ADVANCE switch (2) turns on the power and advances the paper as long as the pressed. The OFF switch (3) turns off the printer.

On slots are provided in the top and bottom convection cooling of the internal computer should always be placed on a hard the cooling vents will not be obstructed in

## CONNECTING TO YOUR COMPUTER

Connecting anything to your computer, PULL PLUGS POWER PLUG OUT. If you are using a pack, disconnect it from the computer. The at on the end of the printer's cable snaps into a regular slot in the back of the computer. If you RAM pack, snap it into the rectangular slot the printer connector. Now plug the power into the back of your printer and press the ADVANCE button once. You are now ready to paper.

## LOADING PRINTING PAPER

The printer is designed to use standard thermal graphic printing paper in roll form. Included with printer is a roll of Timex Sinclair Printer paper with a 1.9" diameter. Replacement rolls of this paper available at outlets carrying the Timex Sinclair and by mail order from Timex.

Make sure that the correct paper is always sensitivity and smoothness of the paper is important for correct operation of the printer. Incorrect, low quality paper may result in poor heat transfer, ing, and poor print contrast. IMPORTANT: Avoid of abrasive papers, which can cause severe damage in less than two hours of printing. For quick ing and longer head life, use only the recommended grades of paper listed in the Appendix.

### WARNING

This product contains no user serviceable parts and the user should not open the protective plastic case. All normal operations can be conducted without opening the case. If the plastic cover is damaged through breakage, discontinue use of the applic until the unit can be examined and repaired by factory service center.

## LOADING PAPER INTO THE PRINTER

Loading may be easily accomplished by the steps shown in **Figures 1, 2 and 3.**

Open the paper receptacle cover.

For convenience in paper insertion, it is suggested that the paper roll be placed in the fully opened receptacle cover with about 6" of paper coming beneath the roll. Insert the leading edge of the paper below the rubber platen, and press the ON/ADVANCE button. The paper will feed automatically.

To close the transparent cover roll the paper back into the receptacle. Grasp the leading edge of the paper and hold it toward the front of the printer unit, then close the transparent cover.

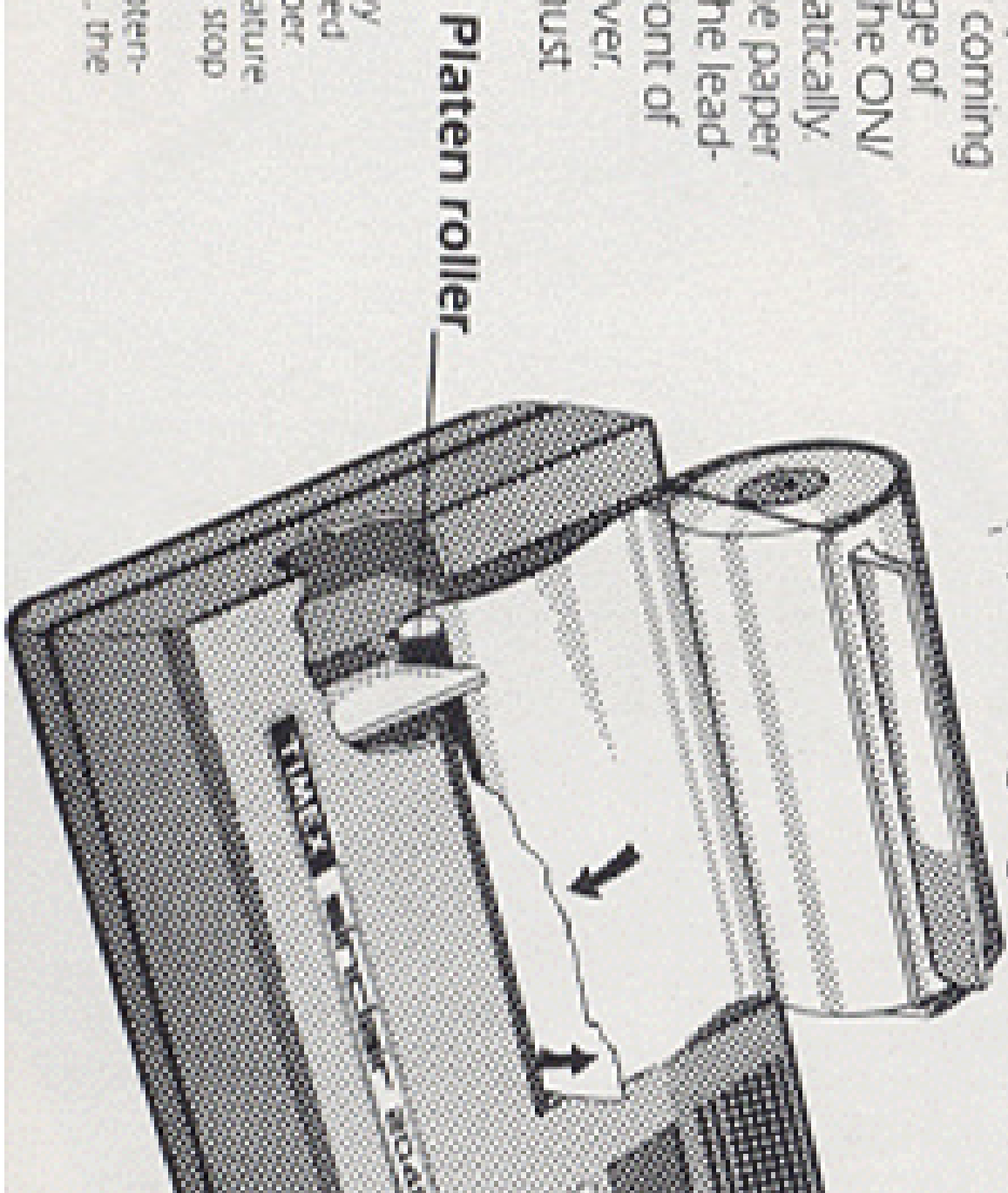
**NOTE:** The leading edge of the paper must be centered on the outside of the cover.

### CAUTION

Some rolls of paper for your TS-2040 printer supplied by other manufacturers may have an "end of paper" indicator which is a red stripe printed on the left hand side of the paper. If your printer has this feature, be sure to use only paper from other suppliers might not have this feature. If you use a roll of paper as this stripe becomes visible, you should stop using it and change paper, installing a fresh roll.

If you experience a failure to do so will cause a paper jam and potential damage to the printing mechanism. In this event, the responsibility is void.

Confirm that the paper is feeding correctly by turning the ON/ADVANCE switch. Check that the paper remains properly centered within the thermal print area. When you are satisfied that the thread is correct, the excess paper may be removed by pulling the built-in paper tearing edge.



## 5 A PARTIAL ROLL OF PAPER

Print that a partially used roll of paper

oval, follow these simple steps:

ar off any excess paper protruding from  
d, using the built-in paper tearing edge.  
pen the paper receptacle cover. Cut the

paper web with scissors behind the lead-in slot  
printer. The partially used roll may then be lifted  
and the paper in the print head area ejected by  
ing the manual ON/ADVANCE switch until all  
paper has passed through the print head area.

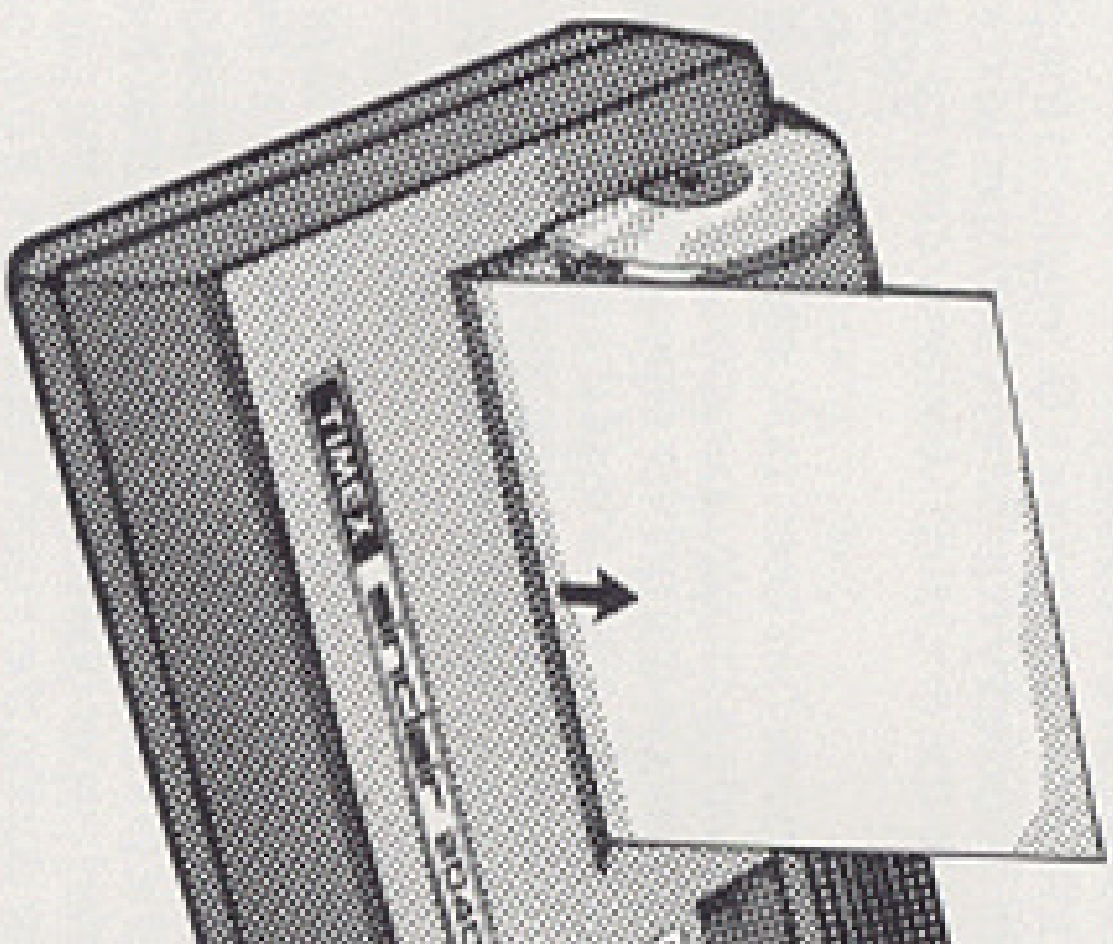
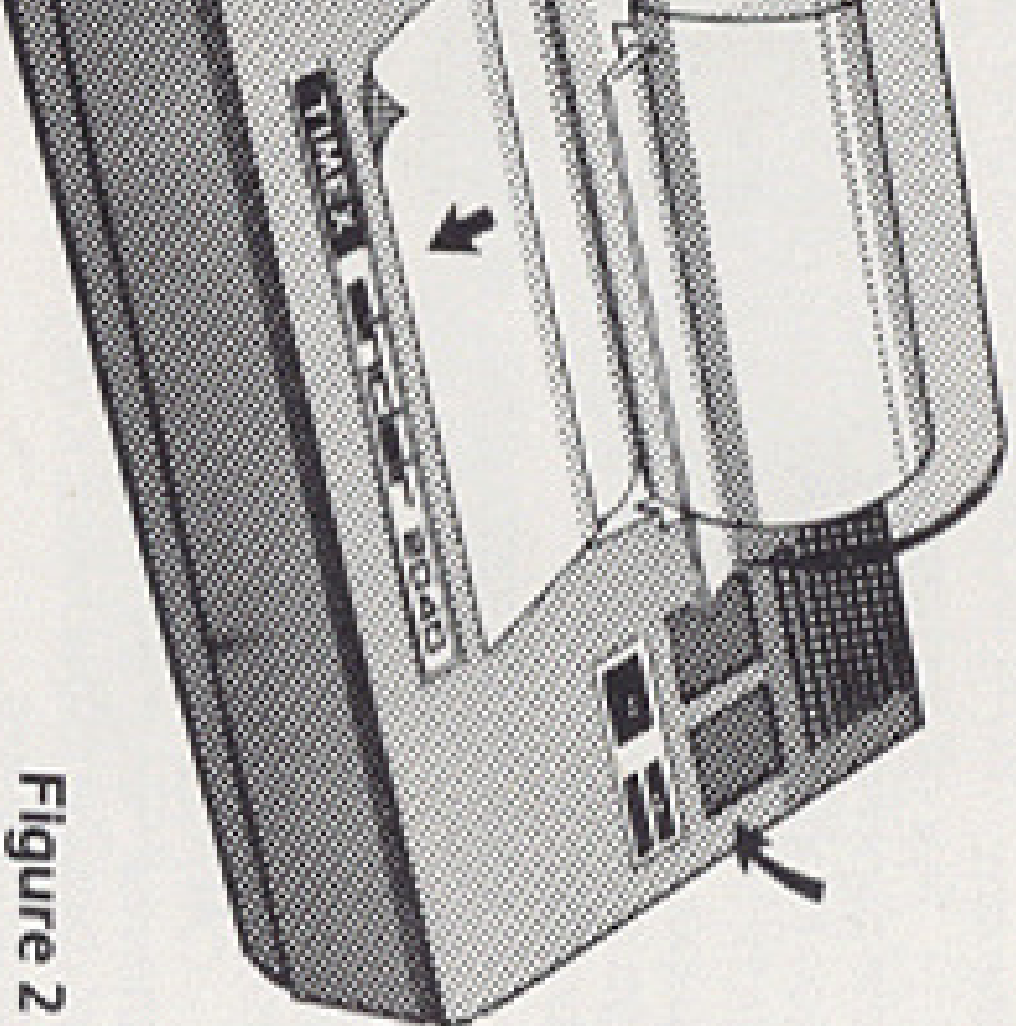


Figure 2

## NEVER SERVICING OPERATIONS

Normal use, your printer should operate properly on an extended period without requiring any servicing. Following service operations are described so they might eventually be required and we want you to know how to perform them correctly if you should become necessary.

Additional maintenance or repairs to the printer require laboratory equipment and special components. Refer to the enclosed Warranty card for details.

## TEST

Test mode has been built into your T/S 2040 to provide a simple operational check. When in this mode the printer repeatedly prints a line of numeral "8" and a line of the numeral "1". The test is entered by pressing the OFF button once and holding the ON/ADVANCE button down.

## AMMS

In normal operation there should be no problem with paper jamming in the mechanism. In the event small roll-ends of paper are removed or reinserted into the printer, care should be taken that the paper does not wrap under the paper guides or during the loading operation. If this occurs,

the paper may begin to wrap around the platen, a thick roll of paper builds up between the platen and the platen, thereby stalling the printer in a difficult situation to remedy, since the platen readily rotate backwards. It is best avoided by following loading practices.

If a paper jam does occur, disconnect the printer and try the following techniques to remove the jam:

1. Tear off and remove the supply roll of paper from the paper compartment. Press the ON/ADVANCE button to advance the platen, thus unwinding the paper from the outside of the spiral. As the free edge of the paper becomes visible, grasp with fingers and gently as you continue to press the ON/ADVANCE button.

2. If the above method fails, slicing the paper by-layer with a very sharp knife, may have to be attempted. Do not cut into the platen, but cut enough layers of paper to allow the remainder to be more easily unwound.

**CAUTION:** Never use or place tools between the thermal heads and the platen. The probability of damage to the heads is very high under the above circumstances.

st cure for paper jamming, naturally, is PRE-  
— by careful loading of the printer, and  
correct paper feeding at the start of print-  
ing situations can be avoided.

## INTERFACE

Information is provided for those who are inter-  
technical operation of the printer. A com-  
prehending is not necessary for proper  
of the printer.

er is wired as a Z80 I/O port, selected by A2  
low level and A7 being at a high level, no  
address lines are recognized. So to send informa-  
printer, use the Z80 command:

OUT (FB), A — opcode D3 FB

The data is in register A. The data bits have  
the following meanings:

low level means stop the motor, low means

low level applies power to the print head.

lines remain in the state they were at last.

ata is sent to the printer. At switch on, or

g the feed button, D7 is set low; D2 is

the feed is finished. The other data lines

To fetch information from the printer, the Z80  
struction: IN A, (FB) — opcode DB FB; will put  
into the accumulator. These bits are used:

(D6) Will be read as low if the printer is there  
if it isn't, and is used solely to check if the printer  
connected.

(D0) This is high when printer is ready for new  
data bit.

(D7) This line is high for the start of a new line

## APPENDIX

### RECOMMENDED PAPER TYPES

#### TIMEX SPECIFICATION

Paper type: Timex thermal paper, black print

Roll size: Roll width: 110mm (4.33 inch)

Roll diameter: 48mm (1.9 inch)

Paper length: 25 meters max.

#### JAPAN PAPER & PULP CO. (JJUJO)

Paper type: TP50CM-A (Blue)

TP50KM-A (Black)

Roll size: Same as above.