



BULLETIN 257B

TECHNICAL MANUAL
MODEL 28 TAPE SPLICER
LTS

TELETYPE[®]
CORPORATION
SUBSIDIARY OF *Western Electric Company* INC.
SKOKIE, ILLINOIS, U. S. A.

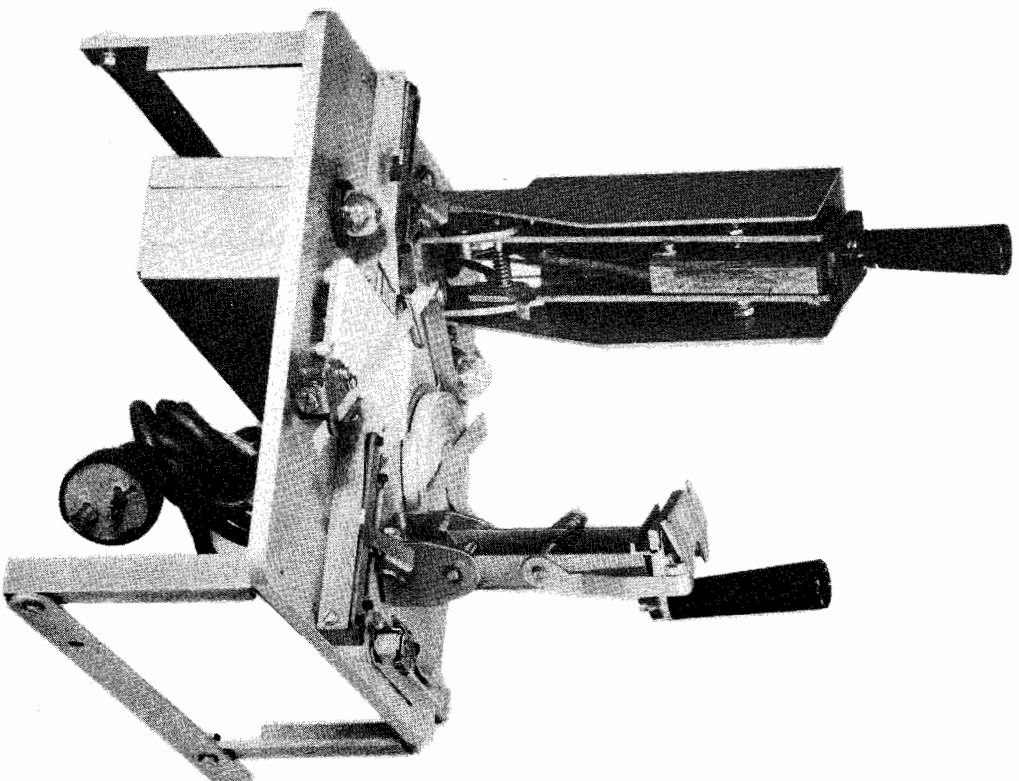


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AUGUST, 1960

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MODEL 28 TAPE SPLICER LTS1

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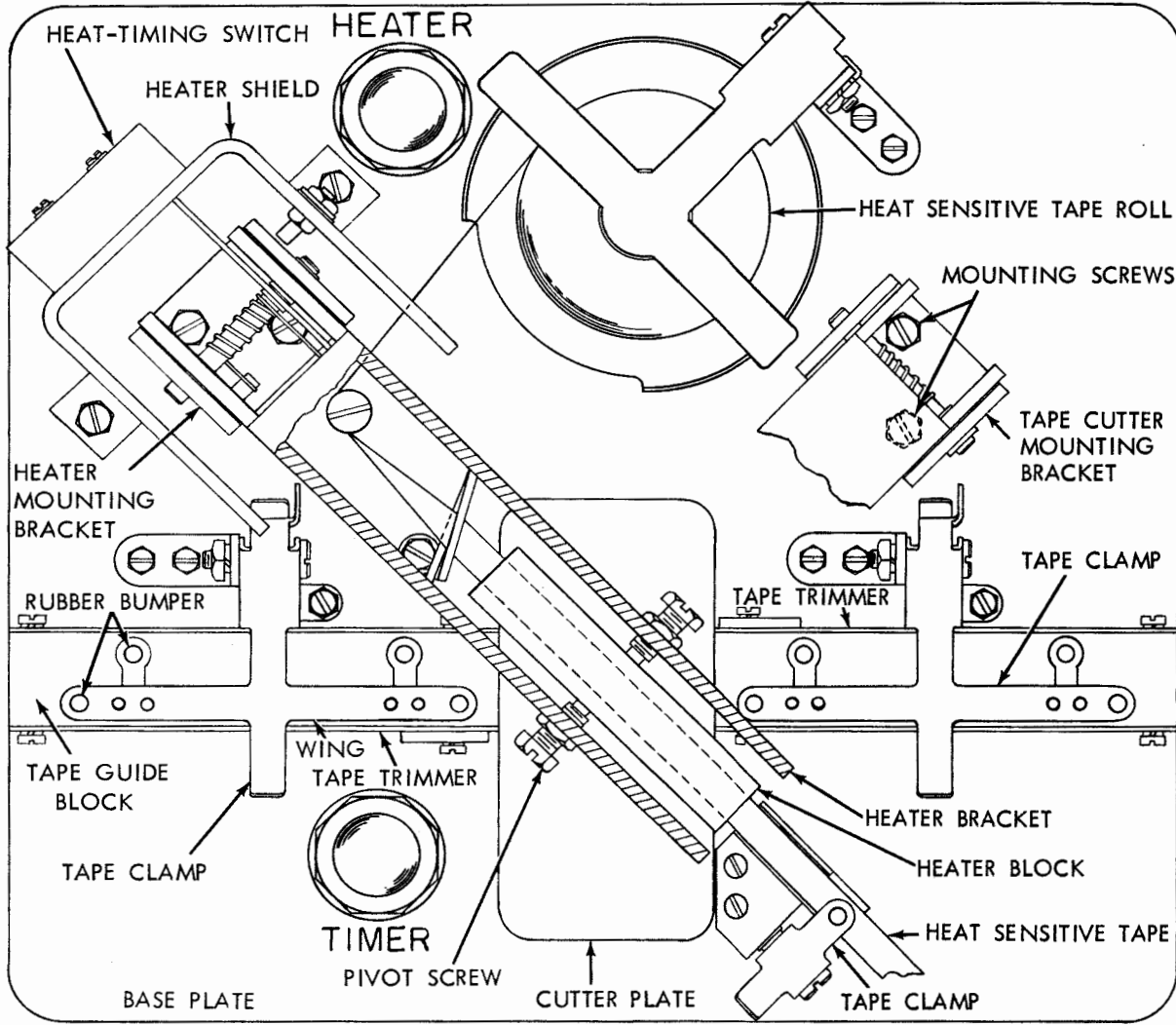


Figure 1-1. Tape Splicer, Top View

SECTION 1

DESCRIPTION

1. GENERAL

a. The Model 28 Tape Splicer is used to splice 5 level, 11/16 inch wide tape and is designed to splice together a nearly exhausted tape supply and a new tape supply, thus assuring a continuous record of perforated tape.

b. The tape splice is made by the application of heat and pressure to a special heat sensitive adhesive tape positioned over the butted ends of the two tape supplies. The resulting splice is increased in thickness by .0015", because of the heat sensitive tape. This splice permits the perforation and sensing of tape at speeds up to 200 words per minute in a Teletype Model 28 Reperforator Transmitter (RT).

c. When used with a Teletype Model 28 Reperforator Transmitter (RT), the Tape Splicer is mounted directly on the frame of the RT. The Model 28 Tape Splicer may be quickly mounted (hooked) on a Reperforator Transmitter frame and within 90 seconds after the power cord is plugged in, it is ready to operate. The Model 28 Tape Splicer may be readily removed from the RT frame. When not mounted on the RT frame the mounting structure supports the splicer in an upright position for ease of operation with other types of units, maintenance and storage. A guard or shield is provided with any associated parts otherwise considered likely to cause injury to the operator.

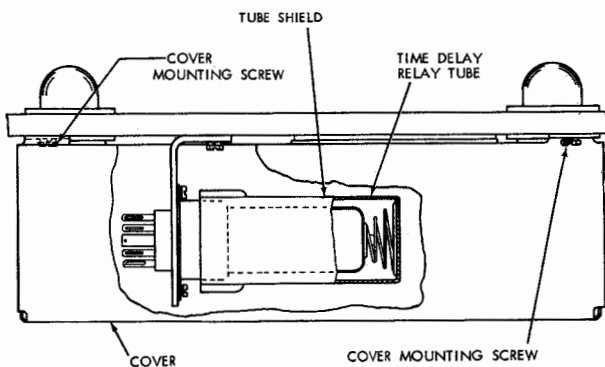


Figure 1-2. Time Delay Relay Tube

2. DETAILED DESCRIPTION (Figures 1-1 and 1-2)

This paragraph lists the basic mechanisms

or parts and their functions. The Tape Splicer is approximately 8-1/2 inches wide x 12-1/2 inches high x 9-1/8 inches deep.

a. **BASE PLATE** - The tape splicer base is an aluminum plate on which are mounted the various mechanisms comprising the tape splicer.

b. **TAPE GUIDE BLOCK** - The tape guide block is a rectangular metal block, which together with the cutter plate, forms a guide and cutting surface for the two tapes to be cut, spliced and trimmed.

c. **HEATER BLOCK ASSEMBLY** - The heater assembly consists of an adjustable bracket, mounted on the mounting plate, to which is pivoted the heater bracket. A heater block containing a 120 watt heater cartridge and a thermostat, is mounted on two pivot screws attached to the heater bracket. A metal (shield) bracket, to which is mounted the heating time indicator switch, shields the heater block assembly.

d. **TAPE CUTTER ASSEMBLY** - The tape cutter assembly consists of an adjustable bracket, mounted to the base plate, on which is pivoted a spring held cutter bracket. To the cutter bracket is mounted a cutting blade retainer and its associated flat spring. Also attached to the cutter bracket is a spring loaded, pivoted, cutter blade shield.

e. **TAPE CLAMPS** - Two tape clamp assemblies are mounted on the base plate; one for each tape to be spliced. Each assembly consists of a bracket to which is fastened a spring biased tape clamp lever assembly, each consisting of a lever with a flat spring, two rubber bumpers and two additional flat springs each with an associated rubber bumper (4 rubber bumpers per clamp).

f. **CUTTER PLATE** - The cutter plate is a flat rectangular Teflon plate cemented to a metal plate.

g. **ADHESIVE TAPE CLAMP BLOCK ASSEMBLY** - The adhesive tape clamp block assembly consists of a metal block designed to guide the heat sensitive tape. A clamping lever is mounted by a pivot mounting and is spring tensioned to this clamp block.

h. **THERMOSWITCH** - The cartridge type, 390° f. + 10° thermoswitch is inserted in the heater block just above the cartridge type heater.

i. THERMOSTATIC DELAY RELAY TUBE

The thermal time delay relay is mounted on the left underside of the base plate (Figure 1-2).

j. HEATING-TIME INDICATOR LIGHT -

The heating-time indicator light is mounted toward the front of the base plate.

k. TEMPERATURE INDICATOR LIGHT -
The temperature indicator light is mounted toward the rear of the base plate.

l. HEAT SENSITIVE TAPE ROLL CONTAINER - A roll of heat sensitive adhesive tape is positioned in the tape roll retainer with a lever held against the top of the tape roll under spring tension.

SECTION 2

THEORY OF OPERATION

1. GENERAL

The tape guides in the Reperforator Transmitter punch block and pivoted head reader are designed with little clearance. A splice in the tape must be of minimum thickness in order to pass through these tape guides at high speeds, and of sufficient strength to withstand the normal tensions to which it is subjected in a normal run through the Reperforator Transmitter. A thin heat sensitive adhesive secures a butt splice which complies with splice strength and thickness requirements (Figure 2-1).

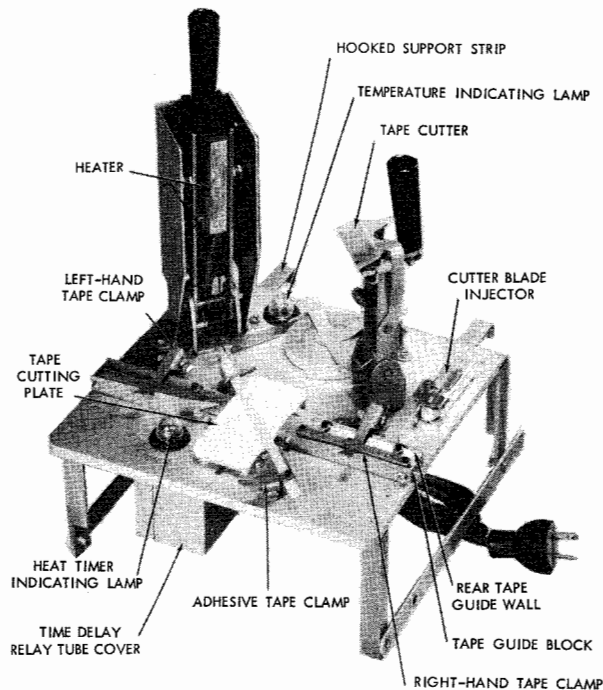


Figure 2-1. LTSI Tape Splicer Mechanism

2. OPERATION

A satisfactory butt weld splice is accomplished by a sequence of operations performed with the Model 28 Tape Splicer, as follows:

a. The tape splicer may be attached to the Reperforator Transmitter frame (Figure 2-4). The power cord is plugged into 115 V. A. C. The heater, when not in use, must be retained

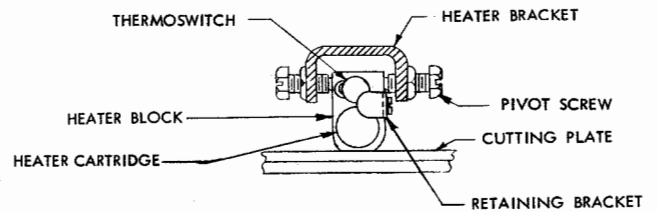


Figure 2-2. Heater

in its upright position. To use the heater, release it from its latched position by pressing it to the left and pulling forward to disengage it from the retainer stud after the temperature indicating lamp lights. The temperature indicating lamp at the back of the base plate will light when the heater block has reached an operating temperature of 380° to 400° F. (Figures 2-1 and 2-7).

b. Approximately 30 to 40 feet of tape is unwound from the nearly empty tape supply reel; the tape is torn (Figures 2-4 and 2-5) and placed on the guide block with the end #1 of the tape extending approximately 3 to 4 inches beyond the right-hand side of the block. The tape is then clamped in position using the left-hand guide block tape clamp (Figure 2-1).

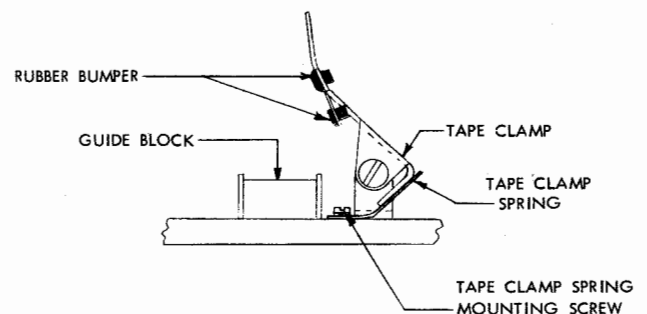


Figure 2-3. Tape Clamp

NOTE

10 feet of tape is equivalent to approximately one minute of operation at 200 OPM reperforator speed. With a small amount of practice it is possible to determine the amount of tape necessary to make a satisfactory splice regardless of reperforator speeds.

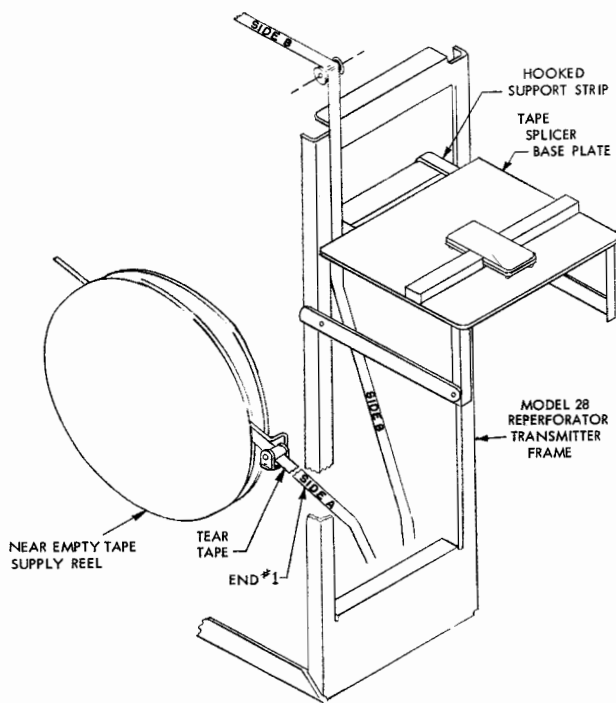


Figure 2-4. Tape Splicer Mounted on RT Frame

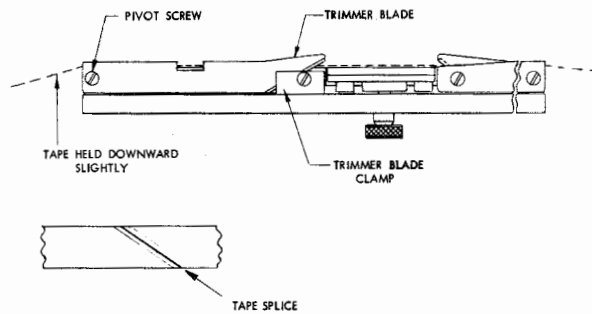


Figure 2-6. Trimmer Blades and Tape Splice

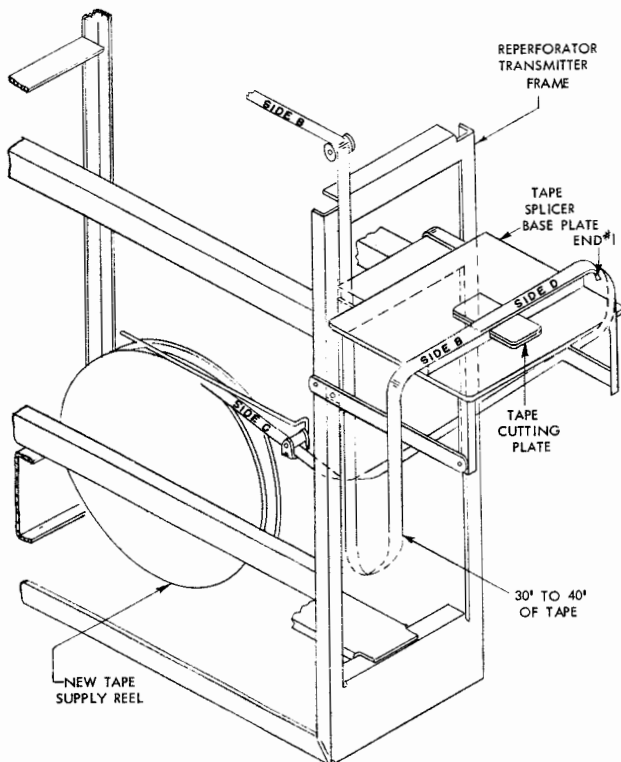


Figure 2-5. Tape Reel and Tape Splicer

c. The empty tape supply reel is removed and replaced with the full tape supply reel. The new tape is placed in the guide block at the right-hand side of the splicer with the tape and extending a small amount beyond the left side of the cutting plate (Figure 2-5). The tape is then clamped in position using the right-hand guide block tape clamp (Figure 2-1).

d. The tapes are cut by lowering the tape cutter with enough pressure to cut completely through both tapes to the cutting plate (Figure 2-1).

e. Using the fingers to securely hold the tapes to be spliced so that they do not slip out of position, remove the two excess pieces of tape; the bottom piece being pulled out from the right-hand clamp by grasping the 3 or 4 inches of tape extending over and beyond the right-hand side of the cutting plate (See Sub-paragraph c above).

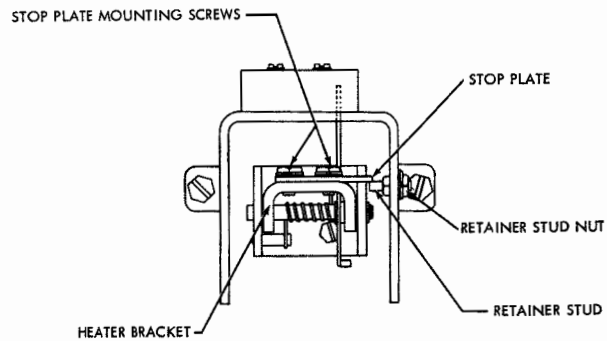


Figure 2-7. Heater Bracket

NOTE

The two flat springs riveted to each tape clamp assist in alignment of the two tapes to be spliced. As the tape clamp is lowered, the rubber bumpers attached to the flat springs strike the surface of the tape and slide the tape to the rear, against the rear tape guide wall (Figures 2-1 and 2-3).

f. A quick visual check should be made to see that the tape ends are correctly aligned; if not, recut the tapes. A section of heat sensitive adhesive is drawn across the butted tape ends and clamped into position for splicing (Figure 2-1).

g. The heater block is pressed firmly on the splice area and held down, approximately

15 to 20 seconds, until the heating-time indicating light goes off (Figures 2-1 and 2-2).

h. The heat sensitive adhesive is unclamped and loosened from the tape cutting plate. The tape splice is moved first to the right, past the right tape trimmer blade to trim the rear edge of the tape and then to the left, past the left tape trimmer blade to cut off the excess heat sensitive adhesive at the front tape edge (Figure 2-6).

i. Remove the spliced tape from the tape splicer, and then if required, unhook the splicer from the frame of the reperfocator stand.

j. Wind the slack tape on to the new supply reel and make certain that the tape feeds properly through its roller guides.



SECTION 3
ADJUSTMENTS

1. GENERAL

a. The following requirements and adjusting procedures for the maintenance of the Teletype Tape Splicer are arranged in a sequence that would be followed if a complete readjustment of a unit were undertaken. In following such a procedure, parts or assemblies which are removed to facilitate adjustment should not be replaced until all other adjustments, which would be facilitated by the removal of these parts, are made. If any adjustment is changed, related adjustments should be checked.

b. Ordering information may be obtained from the Teletype Parts Bulletin 1173B.

c. Before proceeding with any adjustment,

read the applicable portion of the adjusting text carefully. After the adjustment is completed, be sure to tighten any screws or nuts which may have been loosened. If a part that is mounted on shims is to be dismantled, the number of shims at each of its mounting screws should be noted so that the same shim pile-ups can be replaced when the part is remounted.

d. Throughout the bulletin, unless stated otherwise, reference to up, down, front, rear, left or right apply to the equipment as viewed from the operators position in front of the unit.

2. ADJUSTMENT ILLUSTRATIONS

Refer to Figures 3-1 through 3-4.

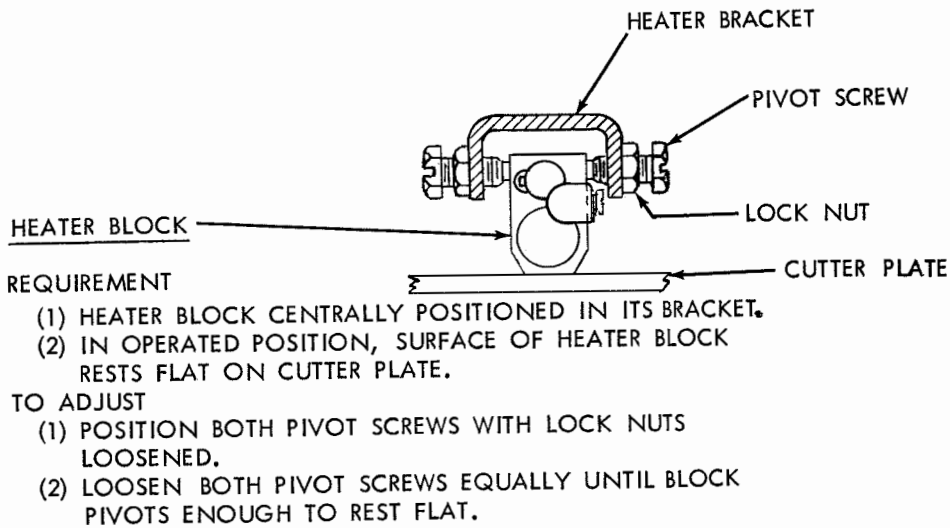
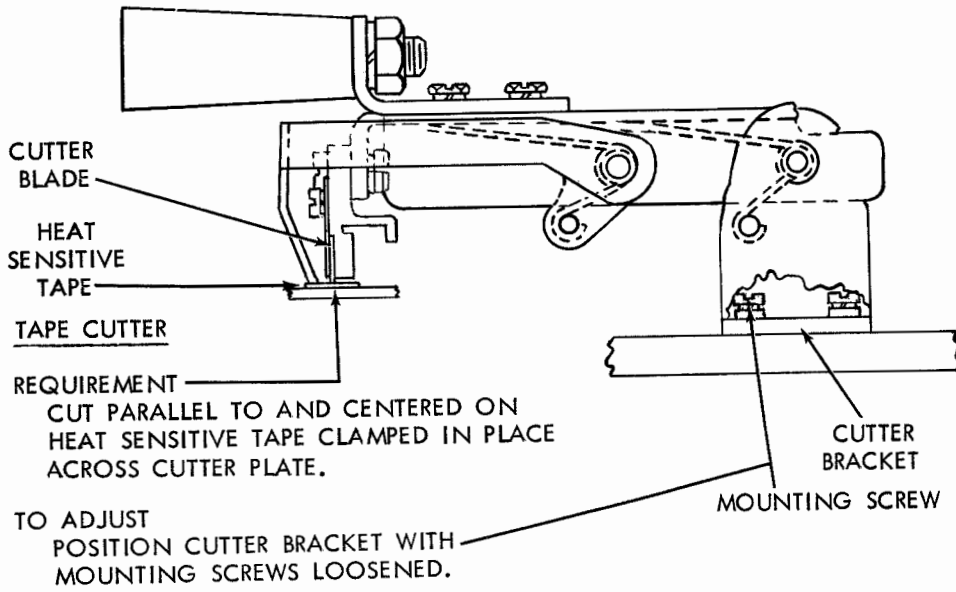


Figure 3-1. Cutter and Heater

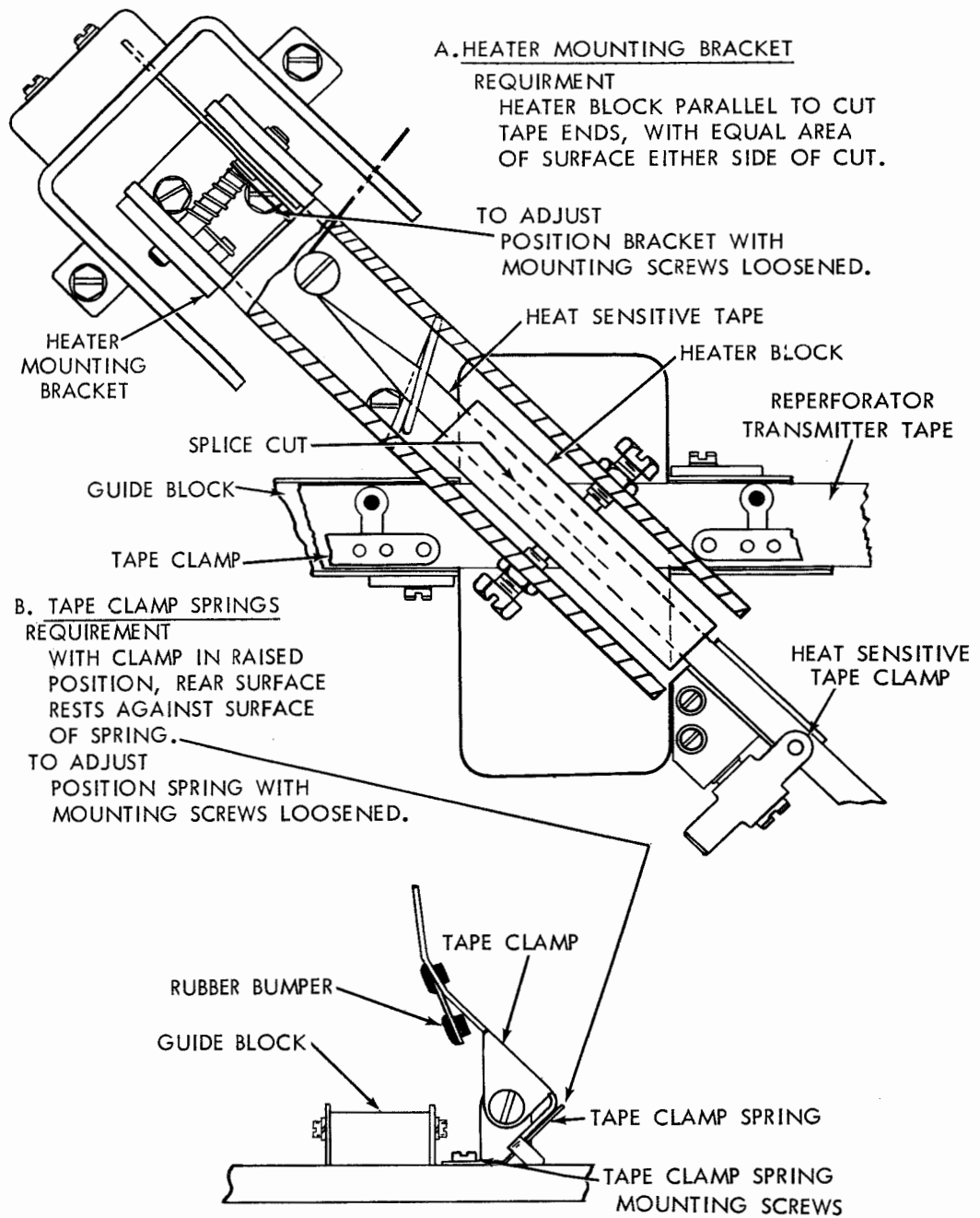


Figure 3-2. Heater Bracket and Tape Clamp Spring

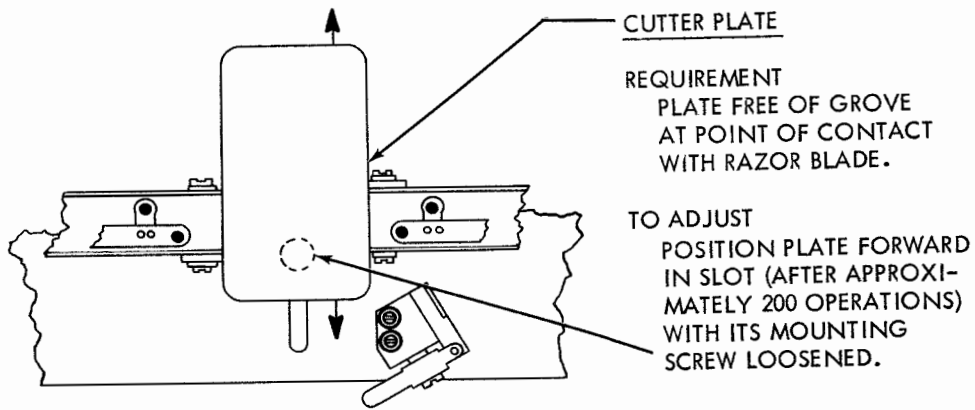
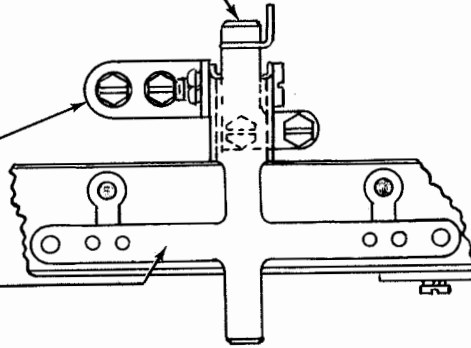
TAPE CLAMPS

REQUIREMENT

- (1) WINGS OF CLAMP PARALLEL TO GUIDE BLOCK.
- (2) IN LOWER POSITION, RUBBER BUMPERS BEAR ON SURFACE OF GUIDE BLOCK.

TO ADJUST

- (1) POSITION TAPE CLAMP BRACKET WITH MOUNTING SCREWS LOOSENED.
- (2) BEND TAPE CLAMP WINGS.

CUTTER PLATE

REQUIREMENT

- PLATE FREE OF GROVE AT POINT OF CONTACT WITH RAZOR BLADE.

TO ADJUST

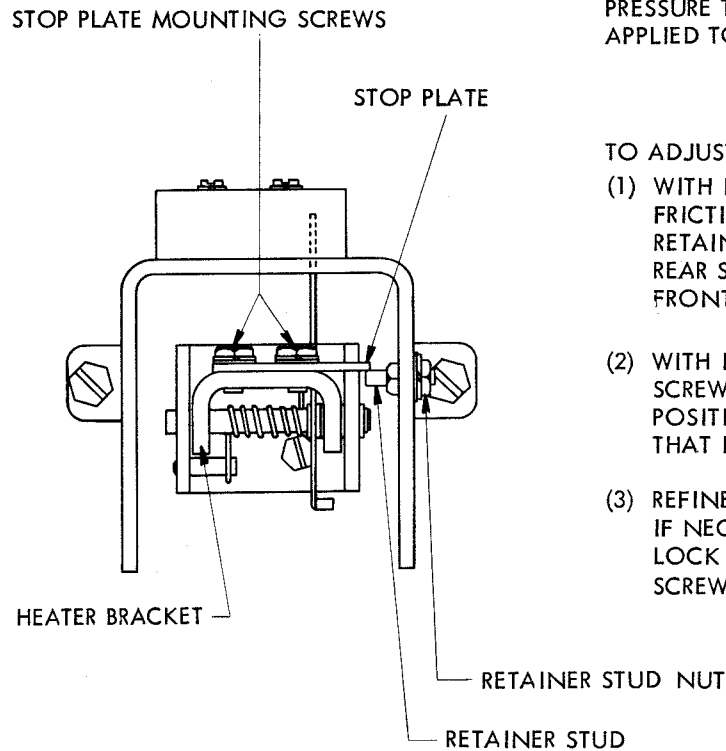
- POSITION PLATE FORWARD IN SLOT (AFTER APPROXIMATELY 200 OPERATIONS) WITH ITS MOUNTING SCREW LOOSENED.

Figure 3-3. Tape Clamp and Cutter Plate

HEATER BRACKET RETAINER

REQUIREMENT

HEATER BRACKET IS RETAINED
IN UPRIGHT POSITION UNTIL
PRESSURE TO THE LEFT IS
APPLIED TO OPERATING HANDLE.



TO ADJUST

- (1) WITH ITS LOCK NUT
FRICTION TIGHT, POSITION
RETAINER STUD SO ITS
REAR SURFACE TOUCHES
FRONT WALL OF STOP PLATE.
- (2) WITH ITS MOUNTING
SCREWS FRICTION TIGHT,
POSITION STOP PLATE SO
THAT IT IS RETAINED BY STUD.
- (3) REFINE (1) AND (2) ABOVE
IF NECESSARY. TIGHTEN
LOCK NUT AND MOUNTING
SCREWS.

Figure 3-4. Heater Bracket Retainer



SECTION 4

LUBRICATION

1. LTS LUBRICATION

a. **GENERAL** - This section contains instructions for lubricating the Teletype Model 28 Tape Splicer. The illustrations, with their text, indicate the areas of the various parts to be lubricated and the kind and quantity of lubricant to be used.

b. **SYMBOLS** - The standard symbols appearing on lubrication illustrations denote the following instructions:

- O Apply 1 drop of oil
- O2 Apply 2 drops of oil
- O3 Apply 3 drops of oil
- G Apply thin film of grease
- SAT Saturate (felt oilers, etc.) with oil
- OGO Apply a drop of oil, a thin film of grease and another drop of oil

LUPL Apply lubriplate 105 (Teletype Part No. 108805)

Except where lubriplate 105 is called for, Teletype KS-7470 Oil and KS-7471 Grease should be used.

c. Overlubrication that might permit oil or grease to drip or be thrown on other parts should be avoided. Special care should be taken to prevent lubricant from coming in contact with the heater block pivot screws, heater block, wiring, electrical contacts, heat sensitive tape or perforated tape.

2. LUBRICATION ILLUSTRATIONS

Refer to Figures 4-1 through 4-3.

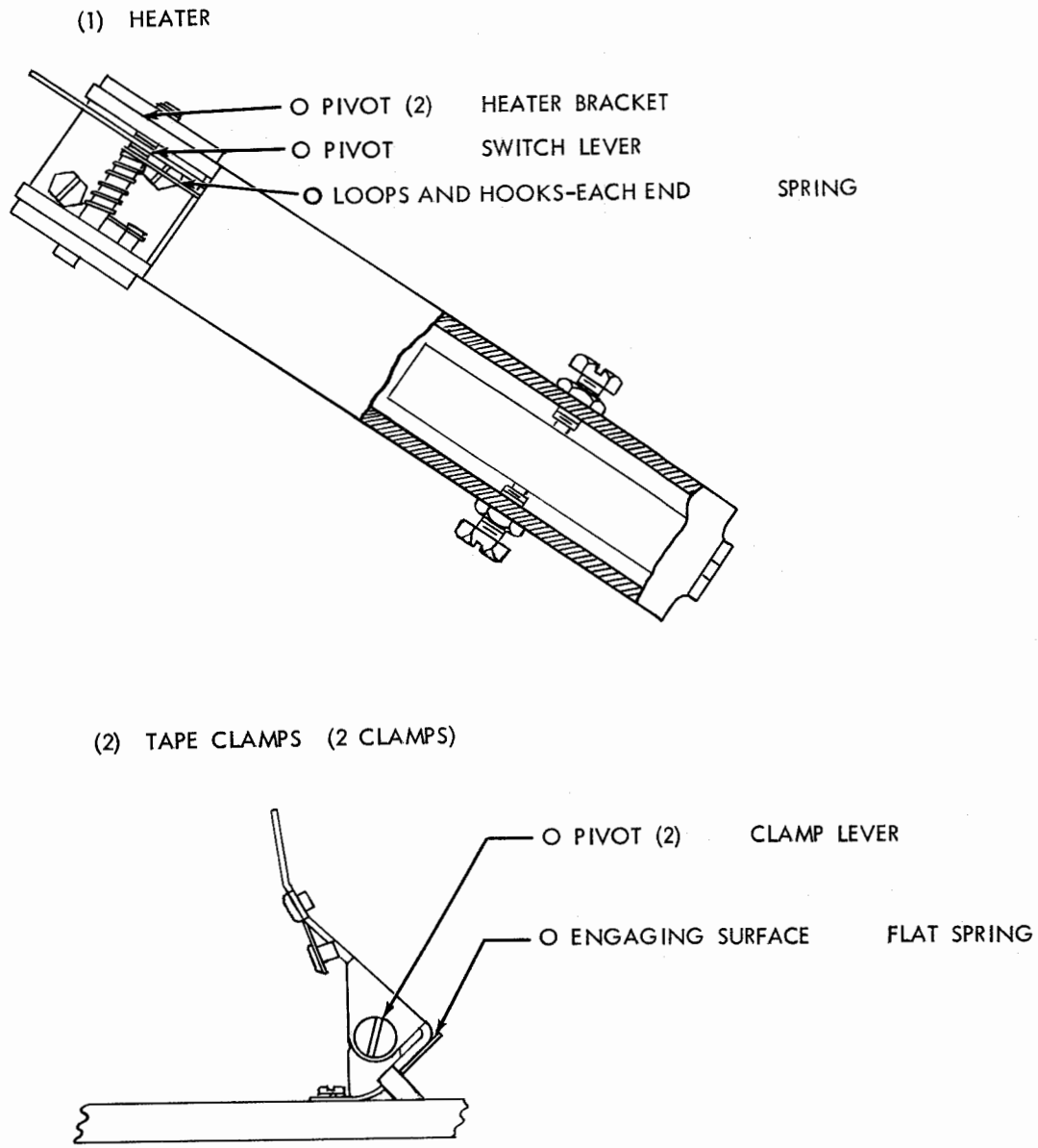


Figure 4-1. Tape Clamps and Heater

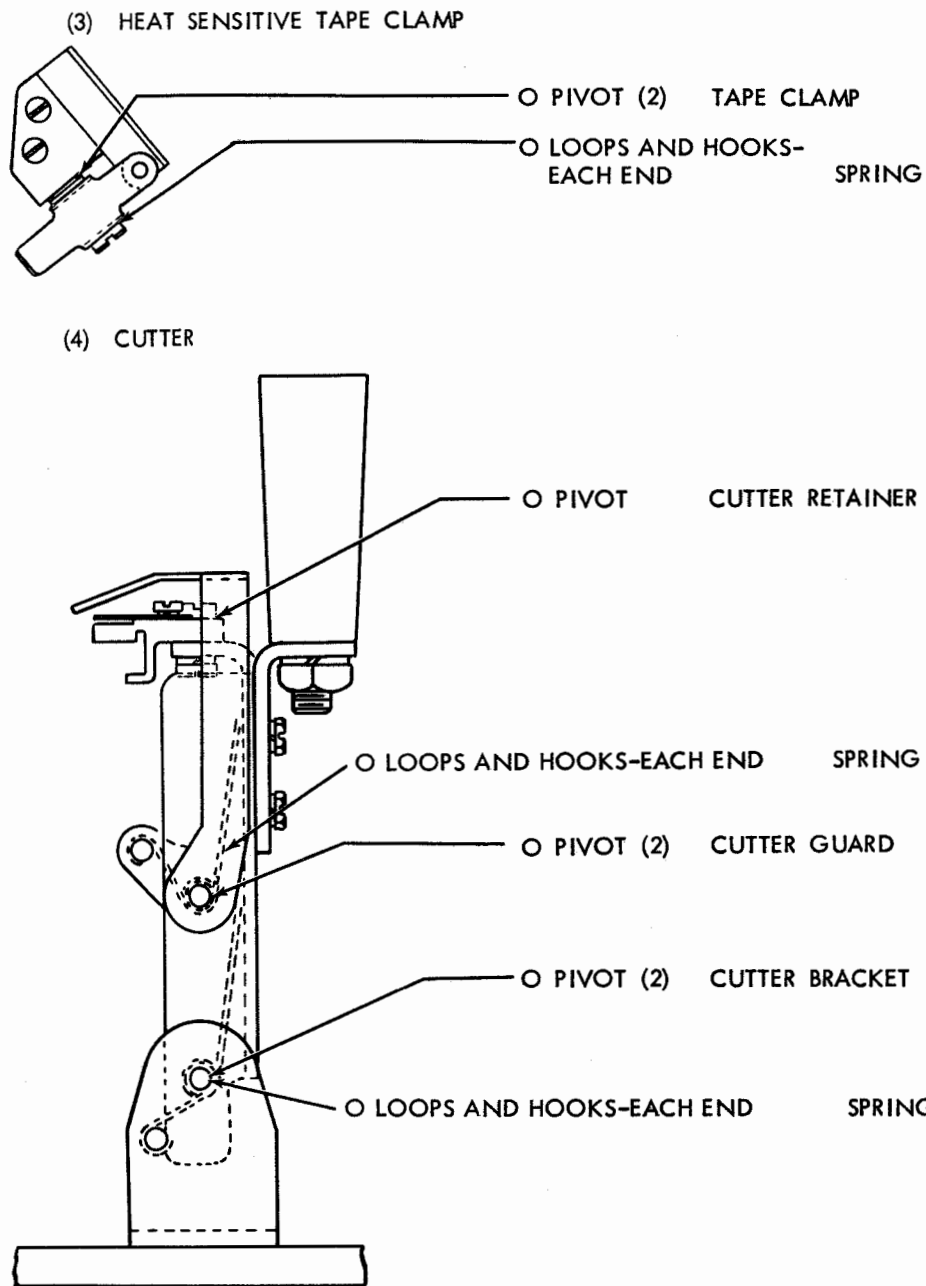


Figure 4-2. Heat Sensitive Tape Clamp and Cutter

(5) HEAT SENSITIVE TAPE ROLL RETAINING LEVER

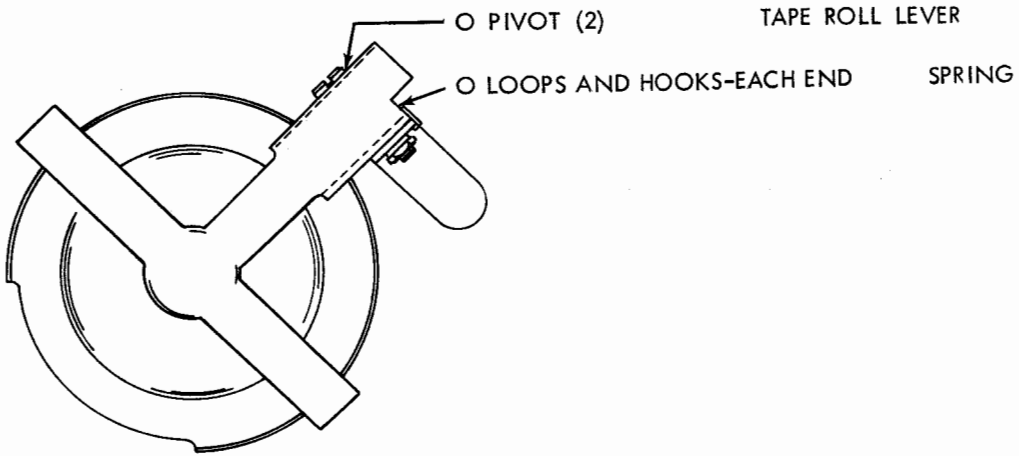


Figure 4-3. Heat Sensitive Tape Roll Retaining Lever

SECTION 5

INSTALLATION AND SERVICING INSTRUCTIONS

1. INSTALLATION

Install the tape splicer in position on frame of RT as shown in Figure 2-5. Do not interfere with the existing tape routed into the RT.

2. SERVICING INSTRUCTIONS

a. To remove the time delay relay tube (Figure 1-2) remove the two mounting screws retaining the cover. Remove the tube shield and pull out tube.

b. TO REPLACE THERMOSWITCH

(1) Remove the cover located under the base plate (Figure 1-2) and disconnect the two thermoswitch wires.

(2) Release the heater block by loosening its pivot screws.

(3) Remove the retaining bracket mounting screw and bracket (Figure 2-2).

c. TO REPLACE HEATER CARTRIDGE

(1) Remove the cover located under the base plate (Figure 1-2), and disconnect the two heater wires.

(2) Release the heater block by loosening its pivot screws.

(3) Remove the retaining bracket mounting screw and bracket (Figure 2-2).

(4) Pull heater from its well.

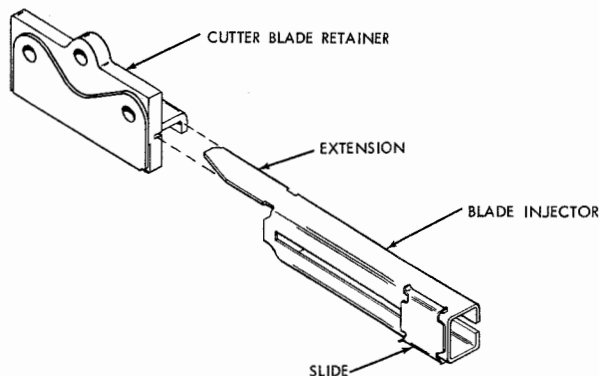
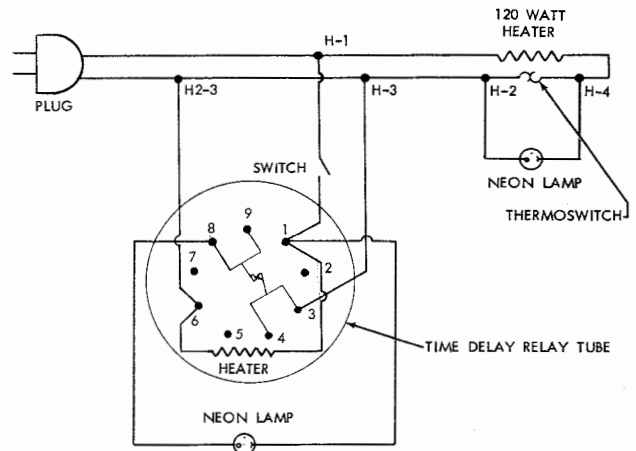


Figure 5-1. Cutter Blade Replacement



NOTE: REFER TO LATEST 3436WD ACTUAL AND 3437 SCHEMATIC DIAGRAMS SHIPPED WITH EQUIPMENT FOR APPLICABLE INFORMATION.

Figure 5-2. Schematic Wiring Diagram

d. To replace a cutter blade in cutter blade retainer (Figure 5-1), insert blade injector extension into slot of cutter blade retainer as far as it will go. Pull slide to the right and then to left. New blade will eject old blade, and remain in position when injector extension is withdrawn.

e. Replace trimmer blade when its cutting edge is dulled. To replace blade, remove pivot screw and trimmer blade screw. Pivot new blade to position with its base parallel to tape guide block and tighten screws (Figure 2-6).

f. Scrape clean the splicing surface of the heater block if it accumulates residue from heat-sensitive tape.

3. SUPPLIES

a. Heat sensitive adhesive tape (Part No. 159859). Order from Teletype Corporation.

b. Razor blades with injector (Eversharp Shick Injector Blades, Teletype Part No. 160243).

