

HIGH SPEED TAPE PUNCH  
(DRPE)

INTRODUCTION

This specification provides temporary coverage of the following for the Teletype High Speed Tape Punch (DRPE).

<u>SECTION</u>	<u>TITLE</u>	<u>PAGES</u>
1.	Description	1-1 to 1-4
2.	Principles of Operation	2-1 to 2-9
3.	Adjustments	3-1 to 3-16
4.	Lubrication	4-1 to 4-2

SECTION 1

DESCRIPTION

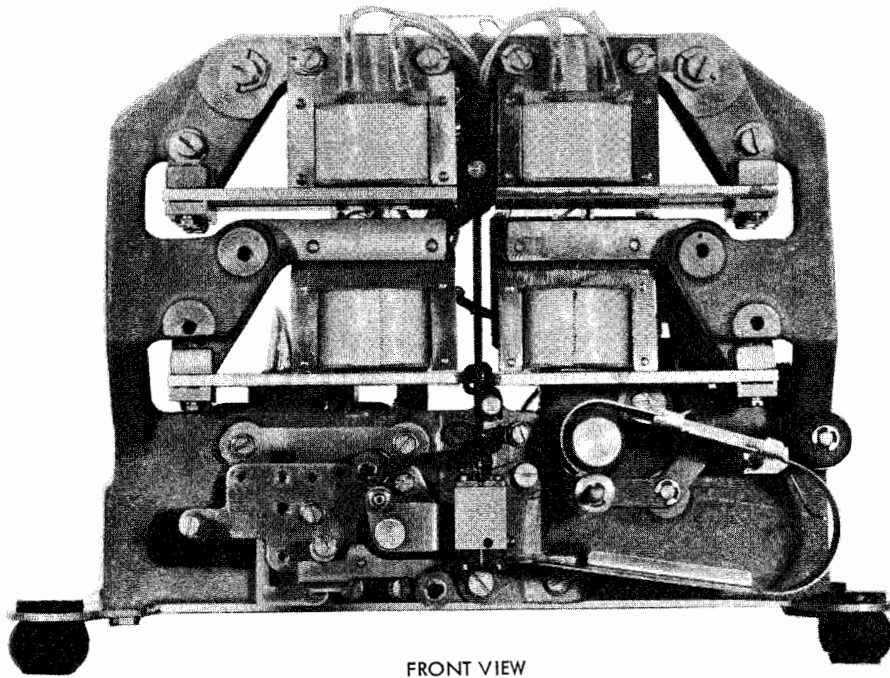
1. GENERAL (Figure 1-1)

a. The High Speed Tape Punch Unit is a magnet controlled and operated high speed perforator or reperforator. It utilizes tuned reed armatures to operate the punch pins and feed the tape. Feeding of tape is accomplished with a spring driven escapement type feed mechanism. Speed of operation, up to its maximum capacity, is dependent only on the speed of the incoming signal.

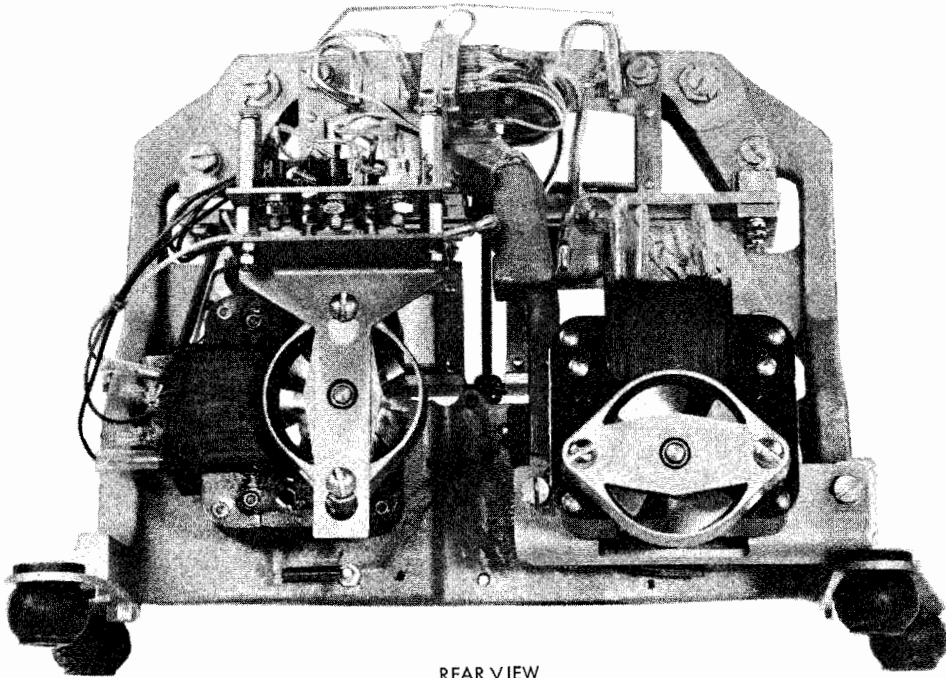
b. The unit produces holes in paper tape which conform to Teletype standards in response to binary, parallel signals received from an electronic control unit. It is capable of operating, without change or readjustment, at any speed up to 2000 words per minute (eight level based on 10 bit characters which include unity start and stop bits).

c. This unit is intended for use in Receive-Transmit Sets, High Speed Tape to Tape Receiving Terminals and other applications such as those where the older BRPE High Speed Punch or reperforator is currently used. In addition, it is used in applications where its high speed capability or its ability to act as a slave in speed to the incoming signal may be required or useful.

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FRONT VIEW



REAR VIEW

FIVE-LEVEL HIGH SPEED PUNCH (DRPE)

d. The DRPE Reperforator requires the electronic circuitry of a Control Unit to convert the low level signals to controlled power signals in order to operate its magnets. For a typical five level unit, one 177126 HISPUC IIA, one 177342 HISPUC IIB and one 177127 Power Supply is required. For an eight level unit, an additional 177343 HISPUC IIC is required. It is assumed that connecting cables will be provided in the mounting facility (Viz. Cabinet, etc.). The chad chute and output tape guide vary from application to application and therefore should be provided with the mounting facility.

## 2. TECHNICAL DATA

a. Signal input to the DRPE is binary (code plus control and tape feed) parallel and consists of shaped current pulses and a steady holding current. This input is provided by the electronic equipment enumerated in sub-paragraph d. above. Output is perforated paper tape.

b. With the proper punch block assembly and associated parts installed, the unit is capable of perforating either 11/16 inch, 7/8 inch or 1 inch tape. Tape guide channels can be provided to align 11/16, 7/8, or 1 inch tapes. Perforated tapes so aligned meet Teletype tape dimension standards.

c. The tape punch unit shall perforate either 5, 6, 7, or 8 level tapes according to the following arrangement.

<u>5 Levels</u>	<u>6 Levels</u>	<u>7 Levels</u>	<u>8 Levels</u>
	0 1	0 1	0 1
0 1	0 2	0 2	0 2
0 2	0 3	0 3	0 3
0 F	0 F	0 F	0 F
0 3	0 4	0 4	0 4
0 4	0 5	0 5	0 5
0 5	0 6	0 6	0 6
		0 7	0 7
			0 8

0 = Tape Hole  
F = Feed

d. The DRPE1 (5 level) weighs 14 lbs. and the DRPE800 (8 level) weighs 17 lbs. Overall dimensions, not including mounting facilities or covers, are 7-3/8 in. high, 9 in. wide, 9-1/4 in. deep.

e. This High Speed Tape Punch will operate at any speed up to 200 characters per second entirely in response to its input signals; there are no timing restrictions on when the signals may be fed to the unit except that they may not be at a higher rate than 200 cycles (characters) per second.

f. The unit has two shaded pole motors (frontispiece). The input to these motors is 115V AC +10%, 60 cycle. Input to the motors is 150 (75 each)

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watts at nominal voltage and 70° F ambient temperature. Power input to the electronic control unit drive circuit may be found in its associated drawings and literature. The unit may be operated in an environment ranging from 0 to 90% relative humidity and at an ambient temperature of +40° to +110° F.

## SECTION 2

### PRINCIPLES OF OPERATION

#### 1. GENERAL (Figures 2-1 and 2-2)

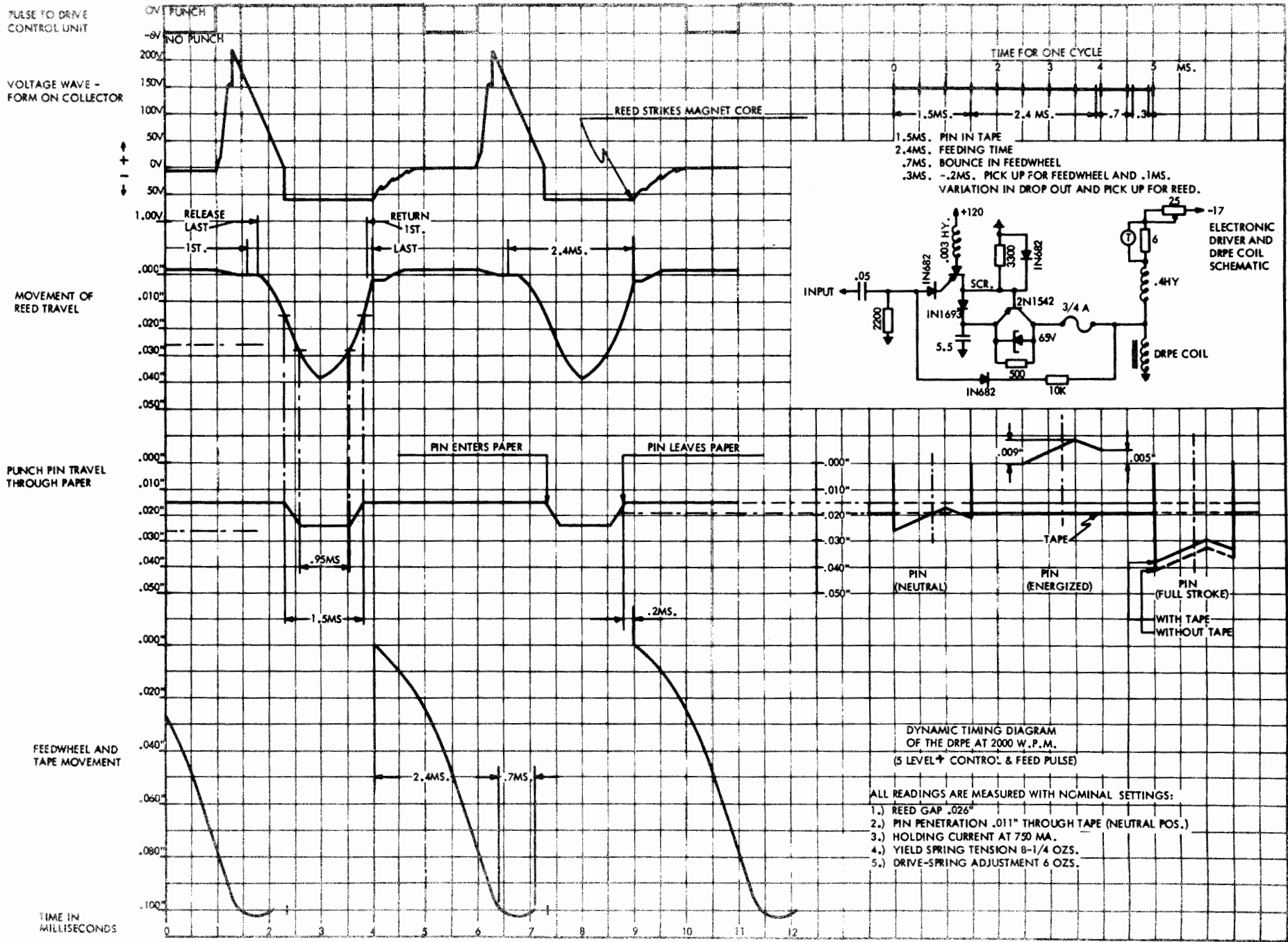
The binary (control pulse and simultaneous code signals), parallel wire input required from the Control Unit to operate a typical DRPE High Speed Tape Punch consists of the following: a steady holding current through all magnet coils during the stand-by (ready) period and through the coils of those code punch magnets that are to remain in a space (no-punch) state during the interval that a character code signal is being received. The tape feed hole for each character and any character marking code hole is punched in the tape through release of a tuned reed armature during its no current interval of this character code signal. The no current interval, with its transitions from and to holding current, are timed and spaced to match one natural resonant frequency cycle of a tuned reed combination that includes reed, linkage, punch and, in the case of the feed punch, the escapement tape feed mechanism. Except for this wave shape-timing requirement, the High Speed Tape Punch will accept the parallel wire binary signals at any speed from zero to 2000 words per minute (200 cycles per second) without any changes or readjustment of the unit.

#### 2. MAGNET AND REED ASSEMBLY (Figure 2-4)

a. **MARK (PUNCH) CODE PULSE** - The tuned reed armature, through its rigid vertical link to the punch pin, punches the tape when it is released from its magnet by a no current interval (mark code signal, or any signal in the case of a feed punch). A rapid reduction to the no current state is obtained by momentary application of a reverse voltage of approximately +250 volts by the external Control Unit to the punch magnet coil, thereby overcoming the holding current through the inductances of the Control Unit and the punch magnet coils. Near the end of this cycle, a negative pulse (approx. -50 volts) is applied, through a variable resistance in the control unit, to the punch magnet coil in time to reestablish a holding current (approximately 750 MA at -17 V DC) that catches the tuned reed armature on its rebound and holds it against its magnet until the next punch pulse is received.

b. **SPACE (NO PUNCH) CODE INTERVAL** - Any tuned reed armature, except for one released by a control pulse and associated with the feed punch mechanism, is held against its magnet during the character space code interval by the same holding current that passes through the magnet coil in the stand-by (ready) condition. The feed punch armature is released by a control pulse to punch and feed tape as described for the mark code pulse in sub-paragraph a. above.

FIGURE 2-1. FIVE LEVEL DRPE DYNAMIC TIMING DIAGRAM (TYPICAL)



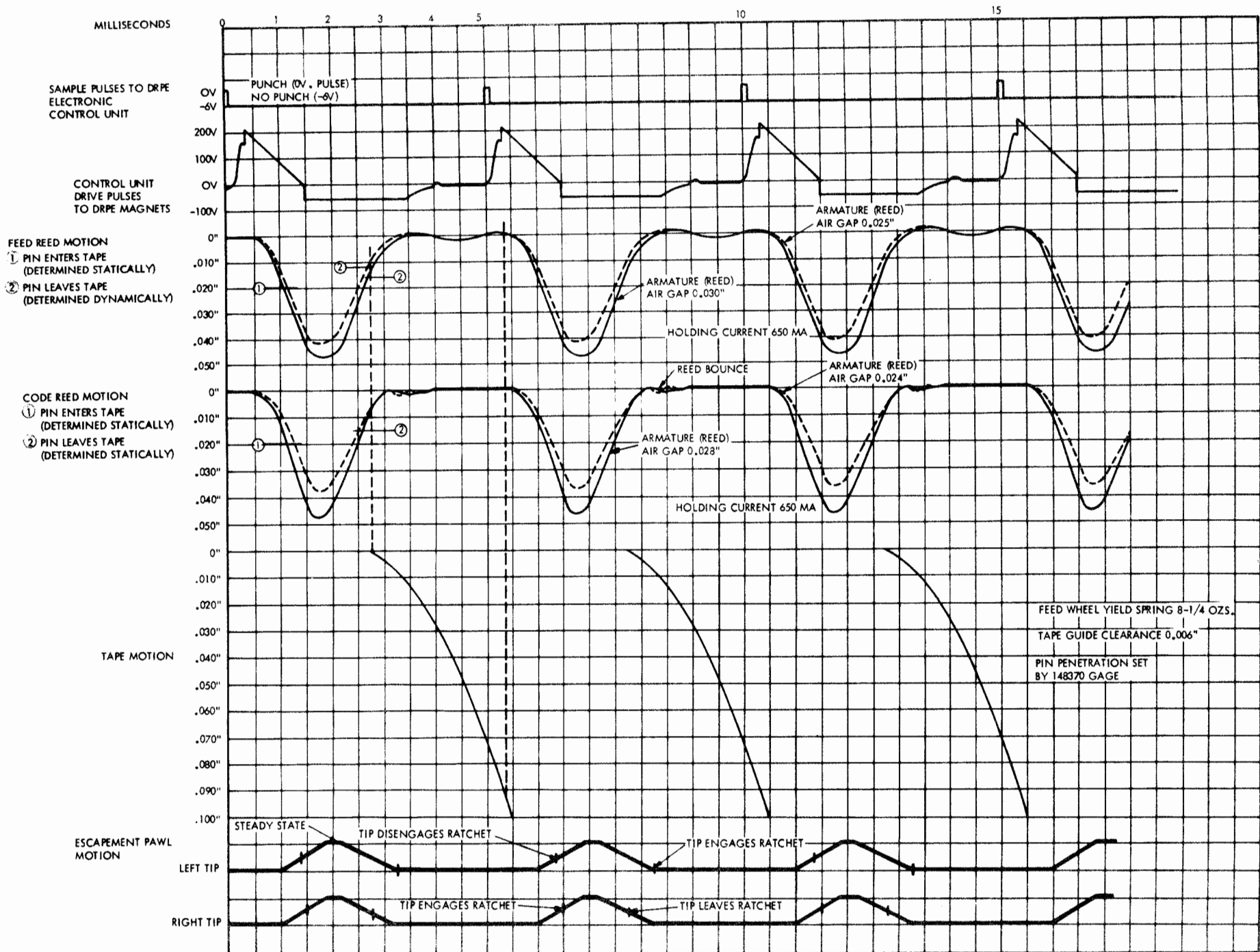


FIGURE 2-2. DRPE800 DYNAMIC TIMING DIAGRAM. (TYPICAL)

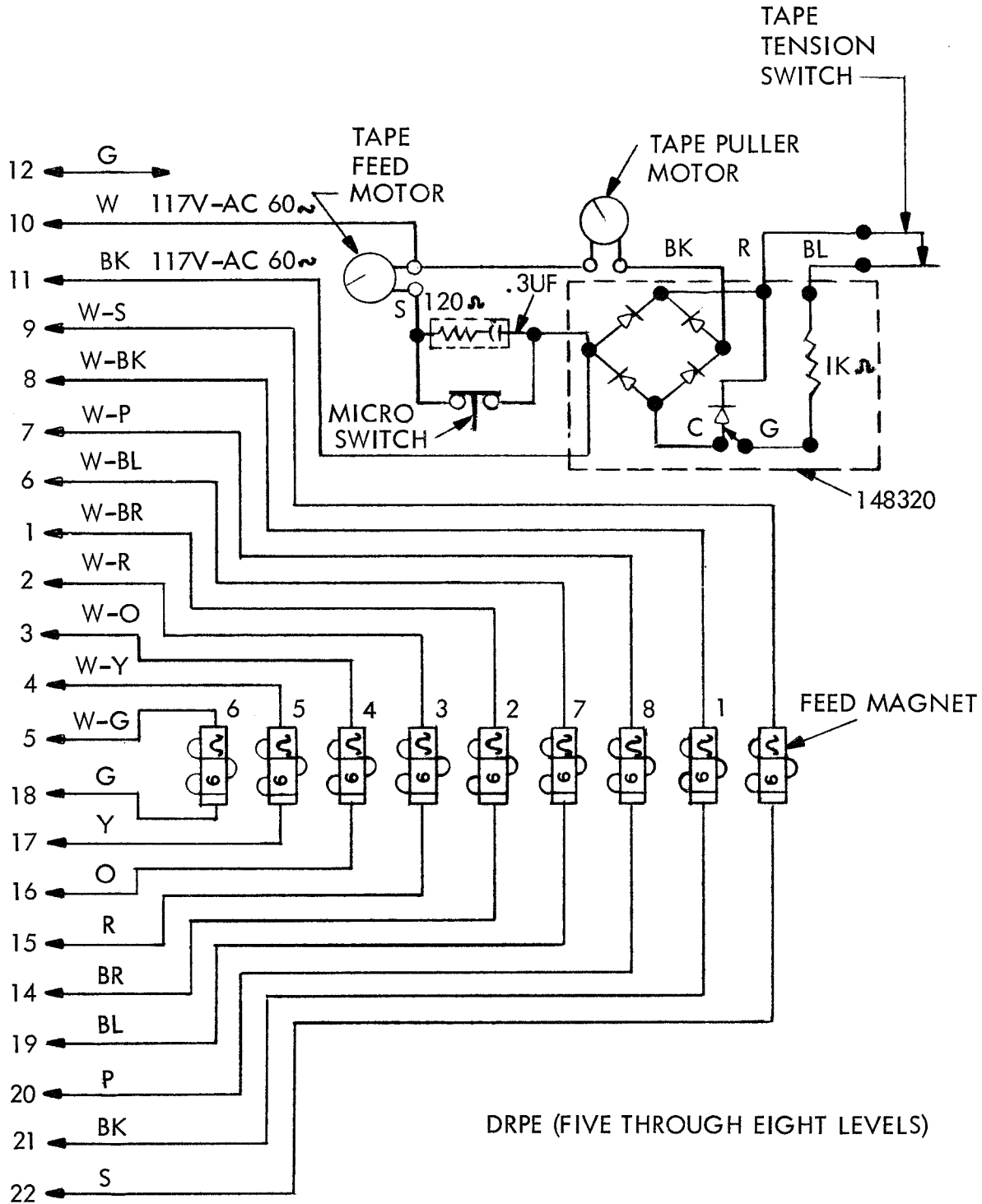


FIGURE 2-3. TYPICAL DRPE SCHEMATIC WIRING



c. The High Speed Punch comprises one magnet-punch mechanism to punch and feed tape plus one for each code level to be punched. This provides six for a 5 level punch unit or nine for an 8 level punch unit.

### 3. REED, LINK AND PUNCH MECHANISM (Figure 2-4)

a. Each tuned reed armature has an extended tip that is arranged to align with and fit into the upper notch of its associated link. The reed is adjustable within its clamp and is mounted to an adjustable magnet bracket which also mounts an adjustable magnet. This combination is adjusted for proper alignment, air gap and so that the punch pin just penetrates the tape with the reed in its neutral (unoperated) position.

b. Each long and short link is notched at the top for the reed and at the bottom for the punch pin, thereby enabling the reed to punch the tape on its down stroke after release and to retract the punch pins on its return (rebound) stroke. The long links are guided by a fixed guide at the top plus an adjustable guide affecting both long and short links near the bottom. The link for the tape feed hole punch has an additional notch on its left side to operate the tape feed escapement pawl.

c. A head at the top of each punch pin fits into the notch of the link at its right, to punch the tape on a down-stroke of the link and to retract the pin from the die plate on the up-stroke. An adjustable retaining plate, mounted at the top left side of the punch block assembly, holds the pins in position in case of punch block adjustment or removal.

### 4. TAPE FEED AND FEED HOLE PUNCH (Figure 2-4)

Upon receipt of the binary control signal pulse at the tape feed hole punch magnet, the armature reed is released. These punch and feed mechanisms then operate in the following sequence:

a. The reed to punch pin link first drives the pin into the tape far enough to hold the tape and prevent feeding.

b. As the link continues downward it pivots the escapement pawl, thereby allowing the ratchet to escape by one tooth under torque of the drive spring. An extended stop lug on the ratchet rotates with the ratchet. This releases the tape feed wheel to rotate, under torque of the yield spring between the ratchet and feed wheel, when the feed wheel is later released by the tape and the punch pins that are holding the tape.

(1) The drive spring is wound to its correct tension by a shaded pole motor through its pinion gear, a spring loaded idler gear with motor control switch and a spur gear (see Figure 2-3 for Typical Schematic Wiring).

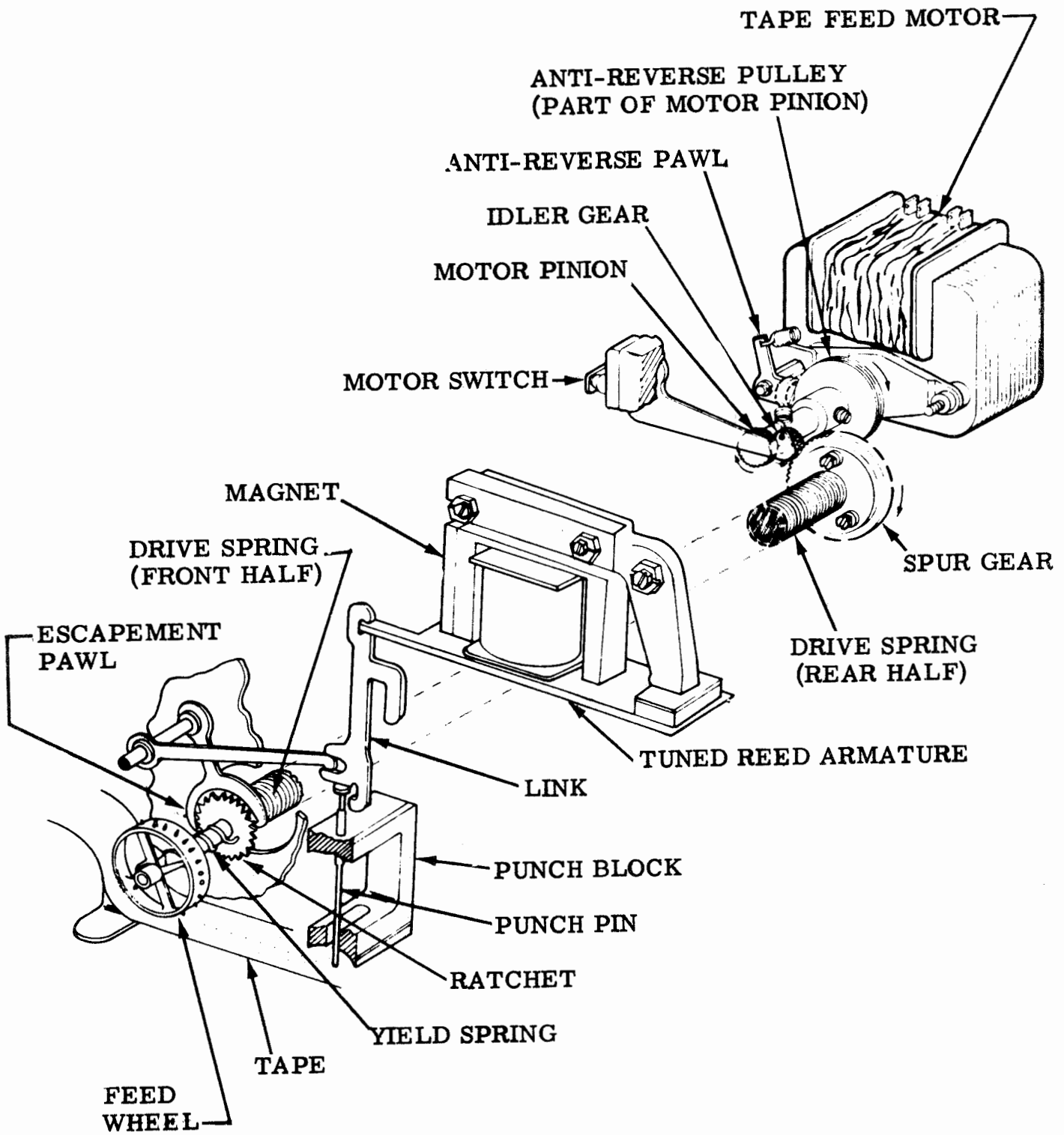


FIGURE 2-4. TAPE PUNCH AND FEED MECHANISMS

(2) An anti-reverse pawl engages the groove in a pulley at the rear of the motor pinion to prevent unwinding of the drive spring through the motor when power is removed by operation of the idler gear arm switch. This also prevents the idler gear spring and drive spring mechanisms from hunting for their balance position.

c. With the feed wheel still held against its yield spring torque by the tape; the armature, link, and punch pin start their upward, rebound, movement. The escapement pawl is again pivoted and the ratchet escapes another tooth at approximately the same time that the feed hole punch pin (with other pins if any) is withdrawn from the tape. The tape is now moved by the feed wheel, under torque of its yield spring, until the feed wheel is blocked by the extended stop on the ratchet (0.1 inch tape movement).

d. The armature reed, with its link and punch pin, continues upward (rebounds) to its latched position against the magnet where it is held by the holding current until the start of the next character or tape feed-out cycle.

#### 5. TAPE PULLER AND GUIDES (Figure 2-5)

The unpunched tape will, normally, be stored on a tape reel that is mounted on associated apparatus. From there it will be pulled, by the drive roller and shaded hole motor, into the High Speed Punch from the upper-right side of the unit as follows (see Figure 2-5):

a. The tape travels to the left under pulley at extreme right of unit.

b. Continues to the left, over top of tape guide and through shielded slot to under-surface of tape guide.

c. Tape is pulled over and around drive roller on motor shaft, returning to the right between this roller and the spring loaded pressure roller directly under the drive roller.

d. Continues to the right over and around tape tension lever.

(1) The tape tension lever maintains a predetermined, constant, low tension on the tape where it is presented to the punch block and tape feed wheel.

(2) This is accomplished by control of the tape puller motor through a torsion spring, double acting cam and a switch at the opposite end of the tape tension lever. The motor power is thereby removed when the tape becomes either too tight or too loose.

e. From under the tension lever, the tape returns to the left and passes along the tape guide, then between the die plate and punch block. All punches must be in their retracted positions (reed armatures pulled up) before a new tape can be inserted at this point.

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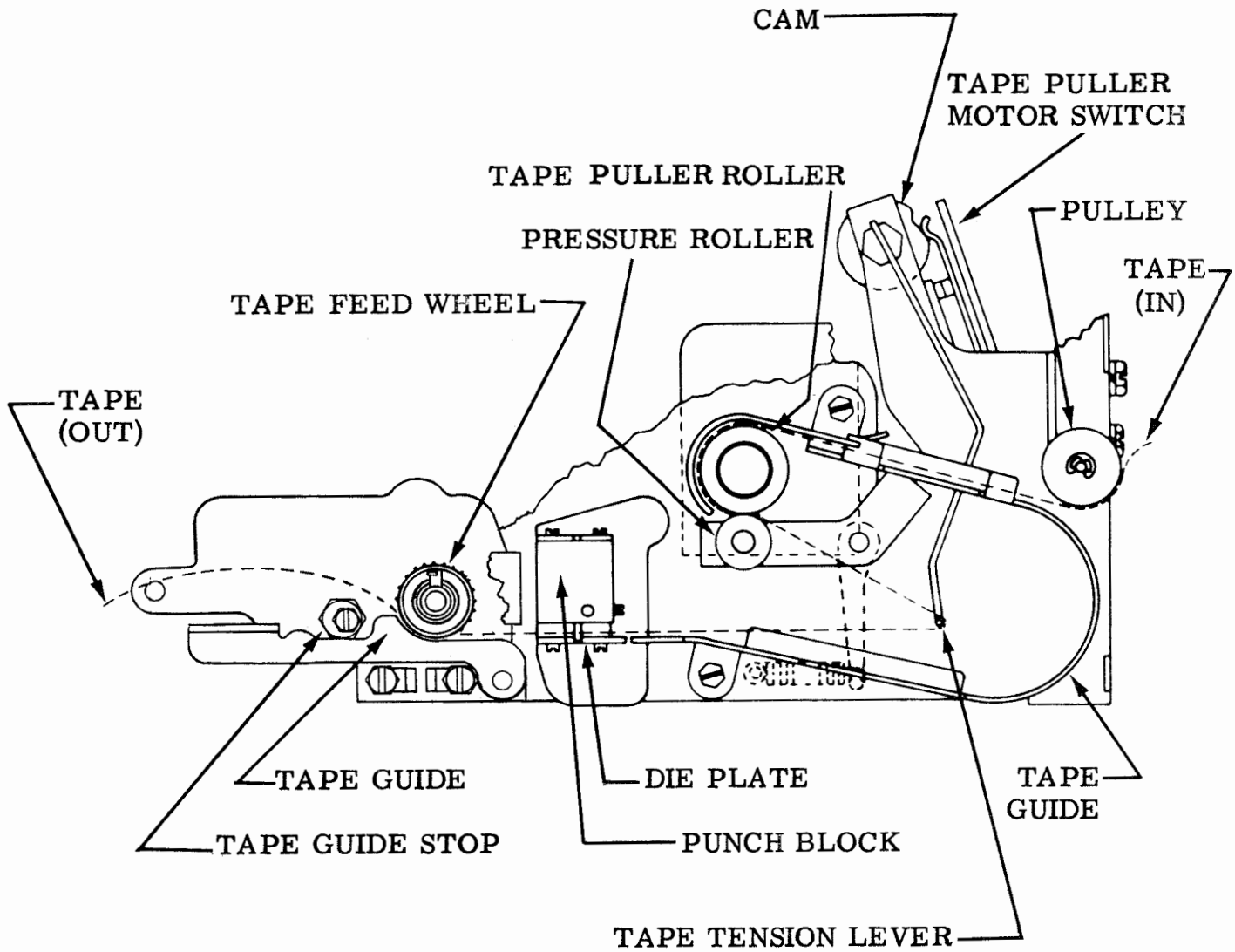


FIGURE 2-5. TAPE PULLER AND GUIDES

f. The tape is then fed by the tape feed wheel and feed motor, between the feed wheel and a manually releasable, spring-loaded tape guide directly under the feed wheel. From the left of the feed wheel it arches over and clear of the adjustable guide stop post, then over the tape guide post at the extreme left.

(1) An additional tape cover guide may be added after the feed wheel, as part of associated apparatus, to guide the tape to a tape winder.

(2) A chad chute, also part of associated apparatus, may be added under the punch die plate in order to dispose of the chad.



### SECTION 3

#### ADJUSTMENTS

##### 1. GENERAL

a. The High Speed Tape Punch is a magnet controlled and operated perforating or reperforating device which records in paper tape the intelligence accepted by its receiving control circuits. The unit produces either five, six, seven, or eight hole codes (plus feed hole) and is capable of speeds up to 200 operations per second.

b. The unit consists of a main frame casting and several sub-assemblies which are fastened to the main frame with screws. The magnet and reed (armature) associated with each code hole and the feed hole are assembled to a cast bracket which in turn is fastened to the main frame. The magnet coil leads are fastened to the coil with quick disconnect fasteners to facilitate removal of the sub-assemblies. The punch block is secured to the main frame with two screws and is readily removable for servicing. The feed mechanism consists of two sub-assemblies which, when assembled to the unit, require only two adjustments.

c. Feeding is accomplished by an escapement type spring driven feed mechanism. The torque in the driving spring is maintained by a shaded pole motor controlled by a torque sensing device.

d. A tape puller, with shaded pole motor, is built into the unit so that tape is presented to the feed mechanism with a uniformly low tension.

e. The unit is not equipped with mounting feet, chad chute or output tape guide. These items are to be included with associated apparatus such as a receive-transmit stand, cabinet with tape handling or self contained base.

##### 2. PROCEDURES

a. The following requirements and adjusting procedures for the maintenance of the Teletype High Speed Tape Punch (Reperforator - DRPE) are arranged in a sequence that would be followed if a complete readjustment of the unit were undertaken. In following such a procedure, parts or assemblies that are removed to facilitate adjustments 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. The spring tension values indicated in this specification are scale readings which should be obtained when Teletype scales are used as specified. Springs that do not meet the requirements specified, and for which no adjusting procedure is given, should be replaced by new springs.

c. Before proceeding with any adjustment, read the applicable portion of the adjusting text carefully. After the adjustment is complete, be sure to tighten any screws or nuts which may have been loosened.

d. Check all moving parts to make sure they are free from binds before operating the unit under power.

e. Ordering information for the High Speed Tape Punch (DRPE) may be obtained from Teletype Parts Bulletin 1186B. Ordering information for Teletype spring scales and tools may be obtained from Teletype Parts Bulletin 1124B. DRPE schematic wiring is covered by Teletype Wiring Diagram 5587WD.

### 3. ADJUSTMENTS

Specific adjustments are covered by the illustrations (FIGURES) that follow:

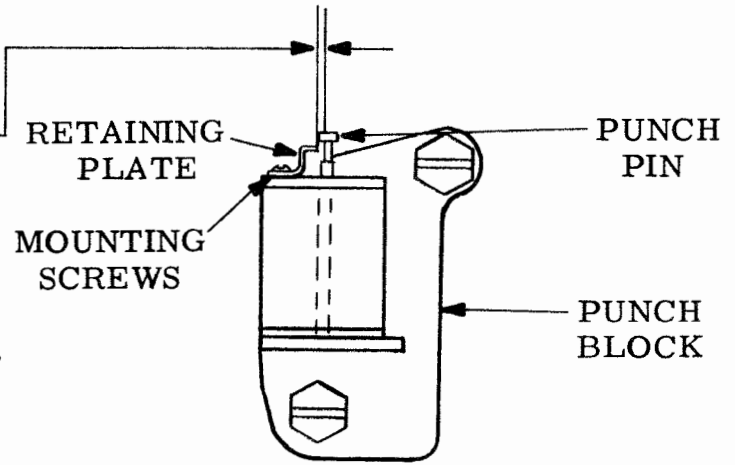


PUNCH PIN RETAINING PLATE

Requirement

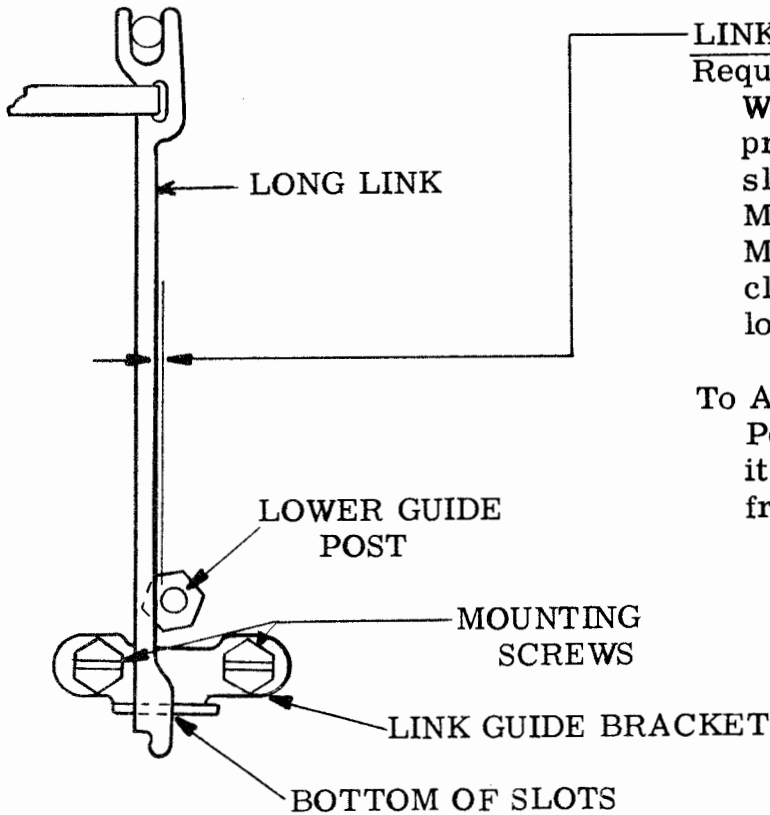
Min. Some  
Max. 0.005 Inch  
clearance between the small  
diameter of punch pins and retaining  
plate. Punch pins shall move freely.

NOTE: Adjustment should be made  
prior to assembly of punch block to  
main casting.



To Adjust

Position retaining plate with its  
mounting screws loosened.



LINK GUIDE BRACKET

Requirement

With punch block removed and links  
pressed lightly against bottom of  
slots in link guide bracket.  
Min. 0.005 Inch  
Max. 0.020 Inch  
clearance between lower guide and  
long links.

To Adjust

Position link guide bracket with  
its mounting screws loosened  
friction tight.

FIGURE 3-1.

PUNCH BLOCK

NOTE: The punch block should be mounted on unit.

Requirement

With links held against bottom of slots in link guide bracket

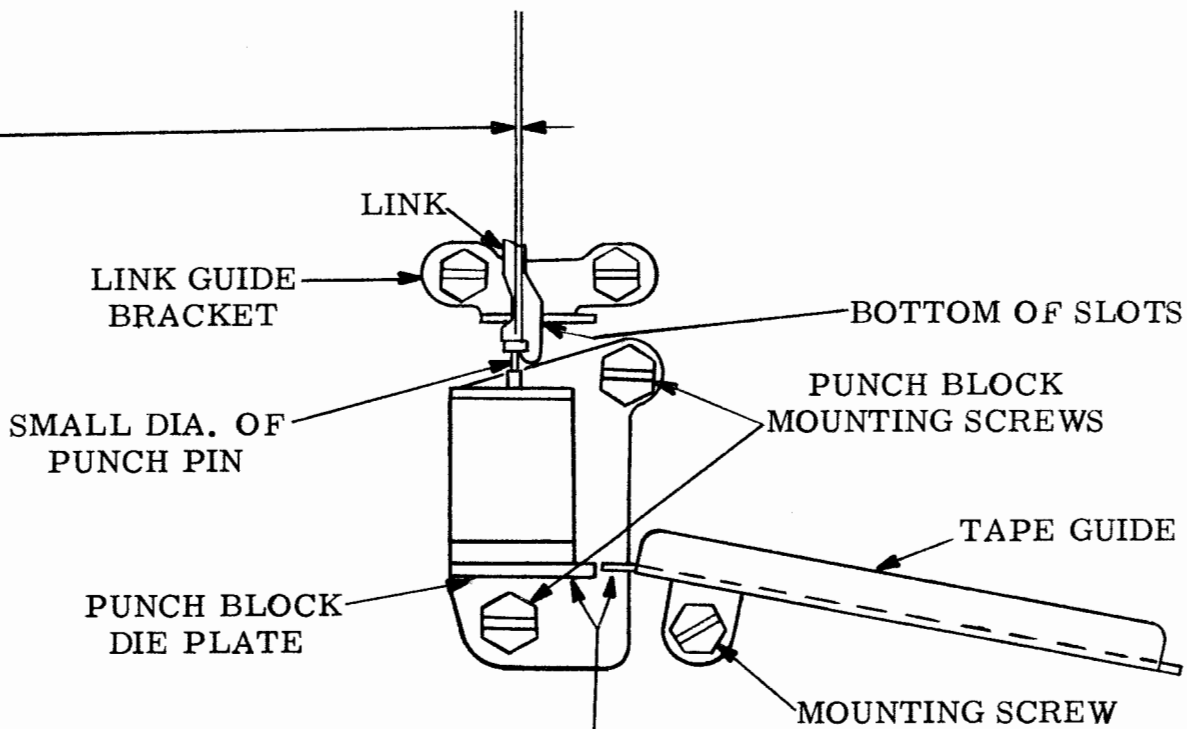
Min. Some

Max. 0.005 Inch

clearance between small diameter of punch pins and links.

To Adjust

Pivot block about lower mounting screw with mounting screws loosened friction tight.



TAPE GUIDE

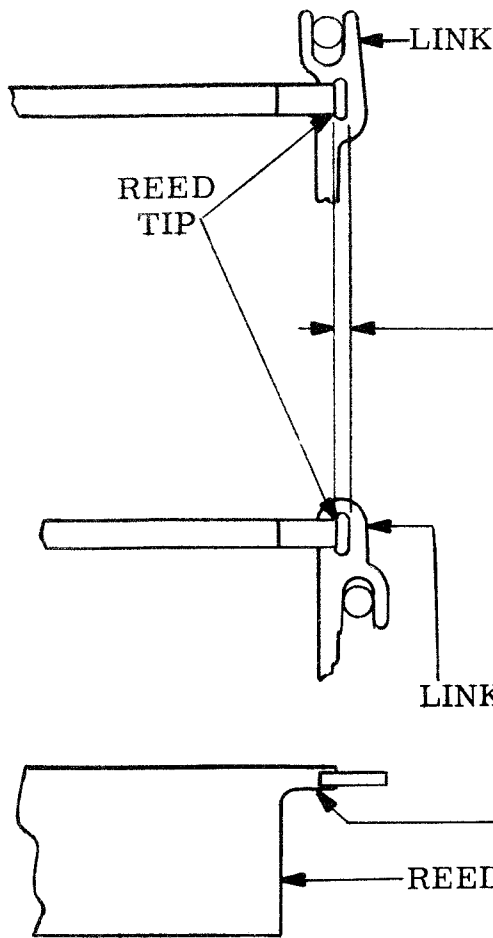
Requirement

Aligned with punch block die plate extension as gaged by eye.

To Adjust

Position tape guide with lower mounting screw loosened.

FIGURE 3-2.



REED POSITION  
Requirement

- (1) Full engagement of reed with link when play between link and its guide is taken up toward reed with Min. 0.005 Inch between tip of reed and link.
- (2) Tip of reed centered in link as gaged by eye.

To Adjust  
Position reed with its clamp screws  
loosened.

ZERO LEVEL REED POSITION  
Requirement

- (1) With play between link and its guide taken up towards reed  
Min. 0.012 Inch  
Max. 0.028 Inch  
clearance between side of zero level reed tip and its link.
- (2) Clearance between tip of zero level reed and #1 level link shall be  
Min. 0.005 Inch  
Max. 0.015 Inch

To Adjust  
Position reed with its clamp screws  
loosened.

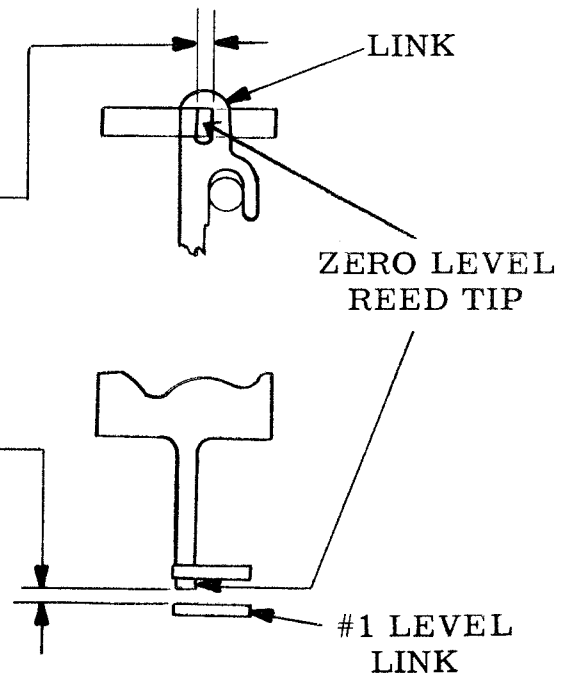
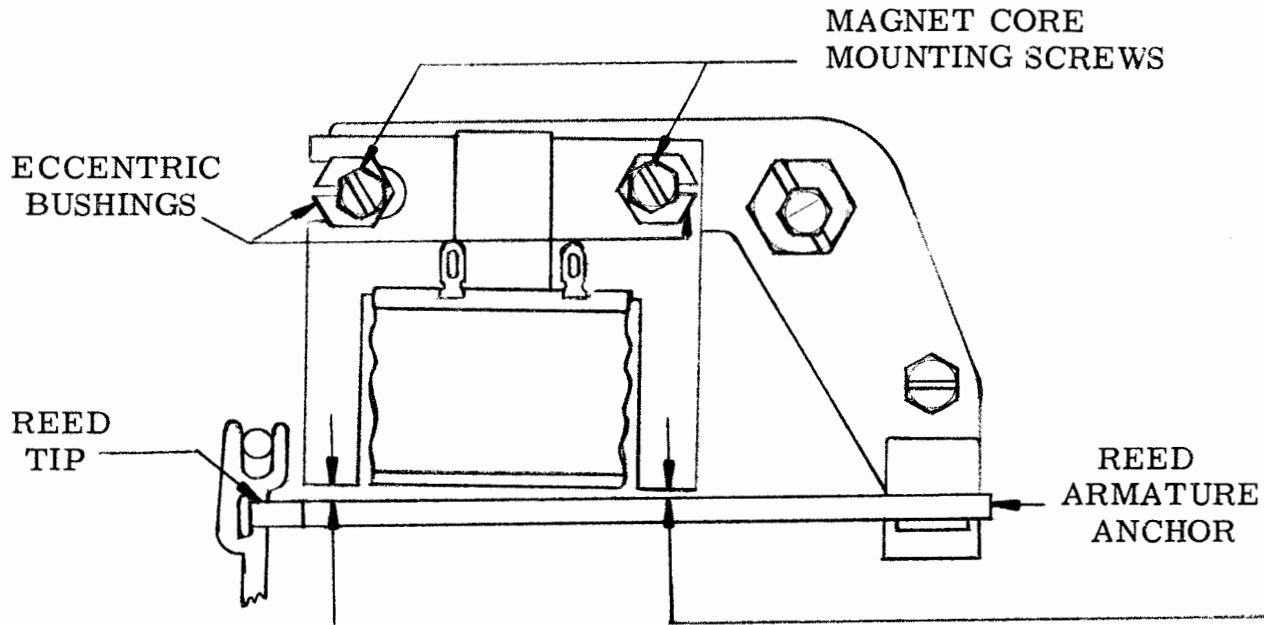


FIGURE 3-3.

NOTE: The following adjustment may be made with the magnet assemblies on or off the unit.



### ARMATURE (REED) AIR GAP

#### Requirement

- (1) Measured in center of pole face with reed in its neutral, unenergized position

Min. 0.024 Inch

Max. 0.028 Inch

gap between reed and pole face closest to reed tip

Min. 0.007 Inch

Max. 0.009 Inch

gap between reed and pole face closest to reed anchor.

Note: The 0.007 to 0.009 inch adjustment is preliminary and may be refined to meet Requirement (2) below.

- (2) With magnet energized

Max. less than 0.001 Inch

clearance between core and armature at any point as checked by 0.001 inch feeler gage.

#### To Adjust

Rotate eccentric bushings with core mounting screws loosened friction tight. Note that eccentric highs should be toward outer edges of core. It is recommended that the larger air gap of Requirement (1) be adjusted before the smaller air gap.

If Requirement (2) is not met, refine Requirement (1). This may be done with magnet energized.

FIGURE 3-4.

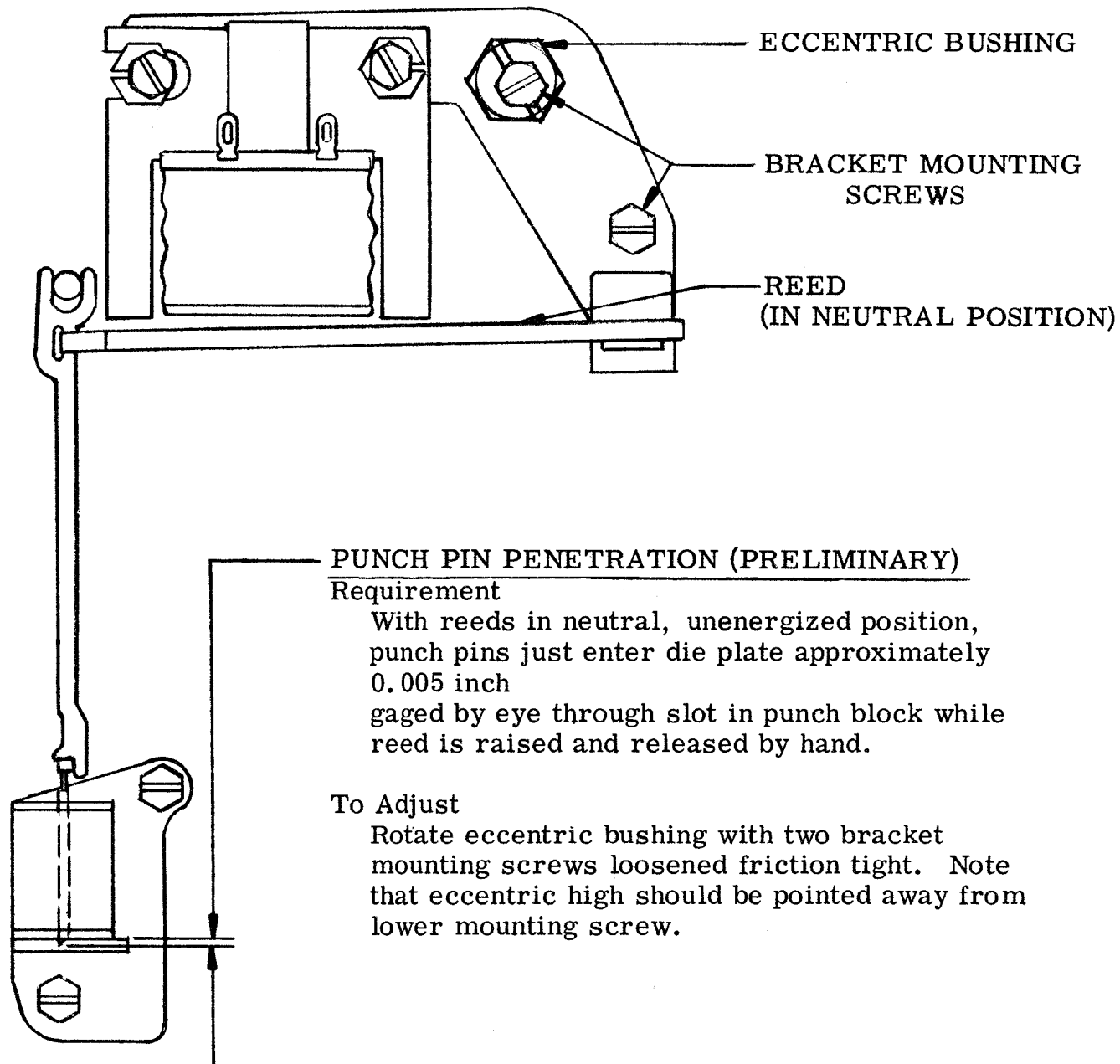
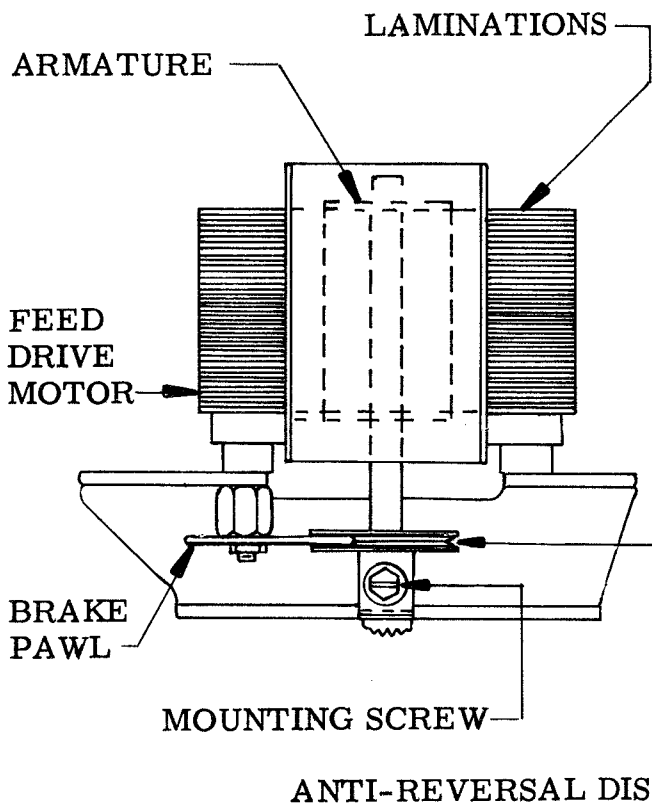


FIGURE 3-5.



NOTE: The following five adjustments may be made on the feed drive assembly while it is removed from the unit.

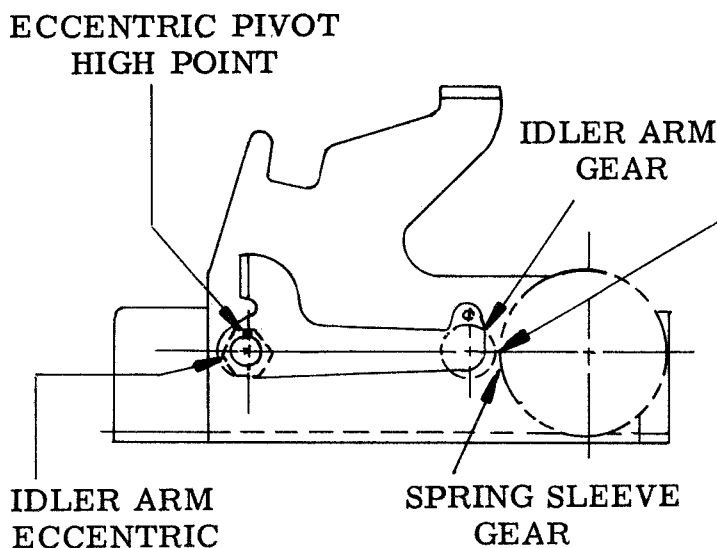
ANTI-REVERSAL DISC

Requirement

With the motor armature centered in its laminations, the brake pawl is centered in the disc slot as gaged by eye.

To Adjust

Position the disc with its mounting screw loosened.



IDLER ARM GEAR

Requirement

With idler arm in position of least backlash barely perceptible backlash between idler arm gear and spring sleeve gear.

To Adjust

Rotate eccentric, with its high point within upper quadrant and with its lock nut loosened.

FIGURE 3-6.

MOTOR SHAFT GEAR

SPRING WINDER MOTOR GEAR

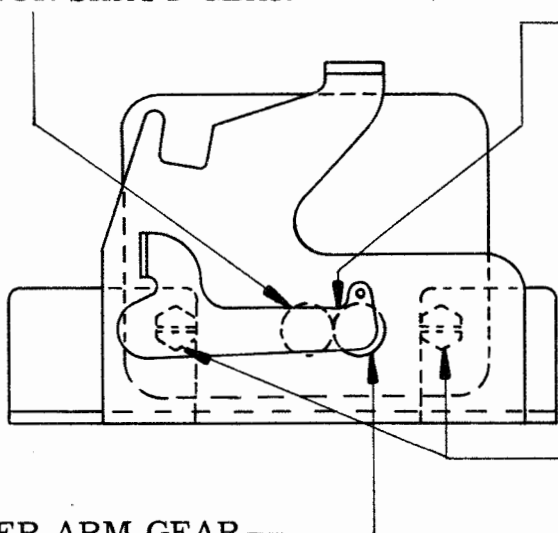
Requirement

With idler arm in minimum backlash position

barely perceptible backlash between motor shaft gear and idler arm gear.

To Adjust

Position motor with its mounting nuts loosened friction tight.



MOTOR MOUNTING NUT  
(ELONGATED SLOTS)

IDLER ARM GEAR

ANTI-REVERSAL PAWL SPRING

Requirement

Min. 1 oz.  
Max. 2-1/2 ozs.

to pull spring to installed length.

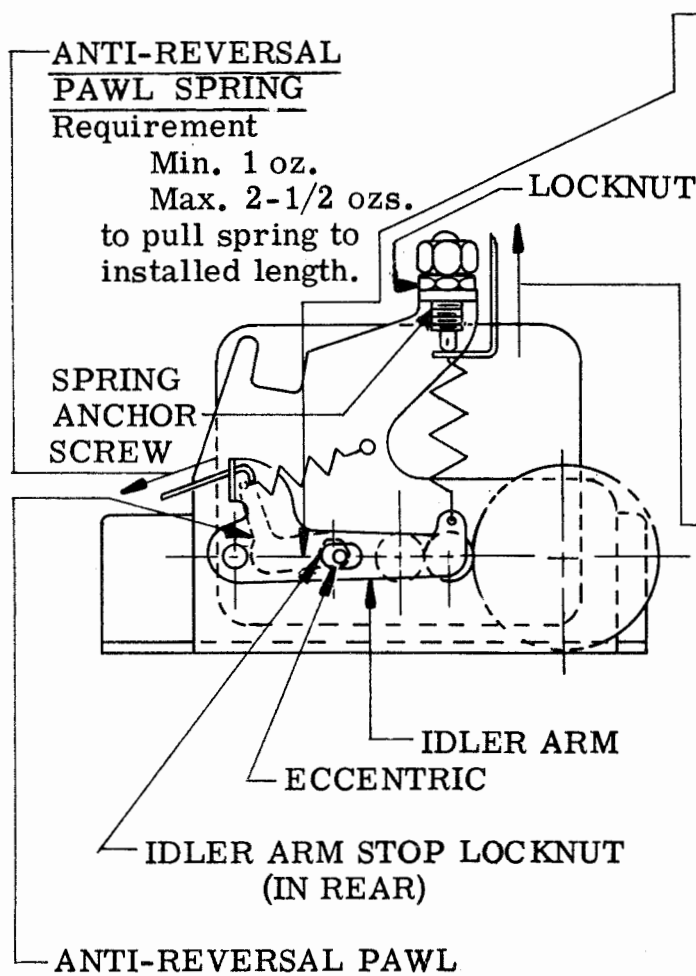
IDLER ARM STOP

Requirement

Idler arm stop shall stop idler arm an equal distance above and below center line of gears as gaged by eye.

To Adjust

With its lock nut loosened, rotate stop, keeping eccentric high point toward gears.



SPRING WINDER TENSION

Requirement

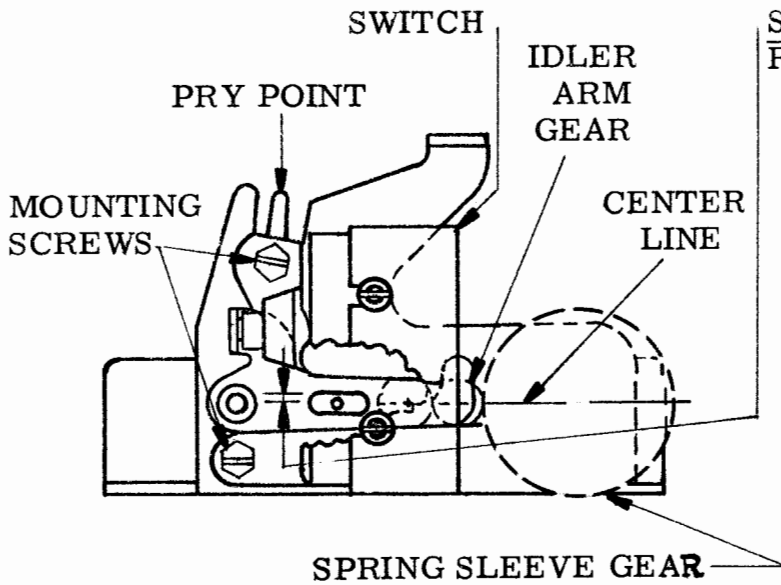
Min. 5 ozs.  
Max. 7 ozs.

to start tension spring moving.

To Adjust

Rotate spring anchor screw with its lock nut loosened.

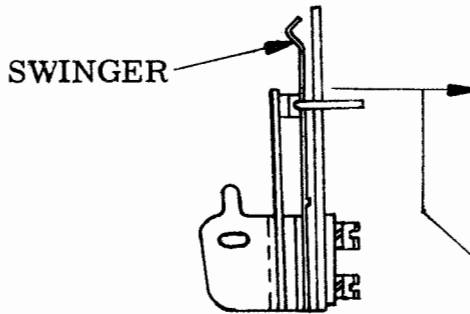
FIGURE 3-7.



**SPRING WINDER SWITCH**

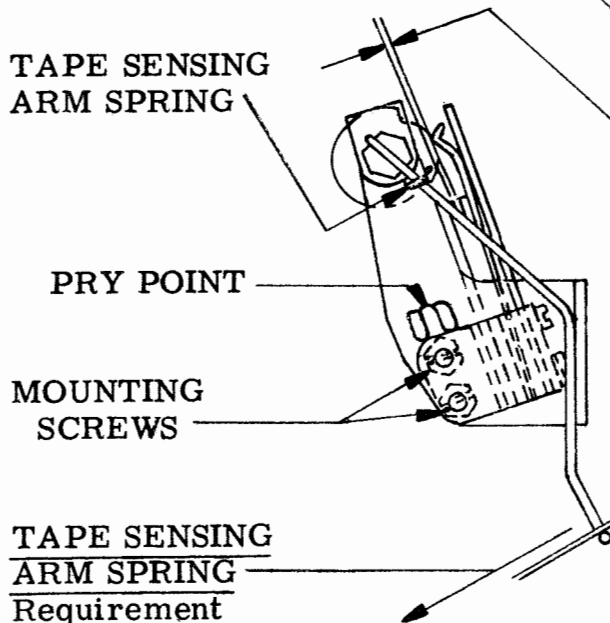
Requirement (Remove Power)

- (A) With all three gears in line as gaged by eye and when switch has just opened  
 Min. 0.015 inch  
 Max. 0.020 inch  
 between top of eccentric idler arm stop and its slot in idler arm. There must be some overtravel after switch closes.
- (B) To measure: Move large gear by hand to operate switch. Do not press idler arm near switch actuator. Operate points of switch may be determined by audible click or by continuity checking device.



**To Adjust**

With mounting screws loosened friction tight, position switch bracket by pry point.



**TAPE PULLER CONTACT PILE-UP**  
Requirements

- (1) Min. 4 ozs. ---Max. 5 ozs. to open contact.
- (2) Min. 0.010 inch ---Max. 0.015 inch gap with swinger on high point of puller cam.

**To Adjust**

- (1) Bend contact swinger.
- (2) With its mounting screws loosened friction tight, position contact bracket by pry point.

**TAPE SENSING ARM SPRING**  
Requirement

Min. 3/4 oz.  
 Max. 1-1/2 ozs.  
 to start arm moving away from tape guide.

FIGURE 3-8.



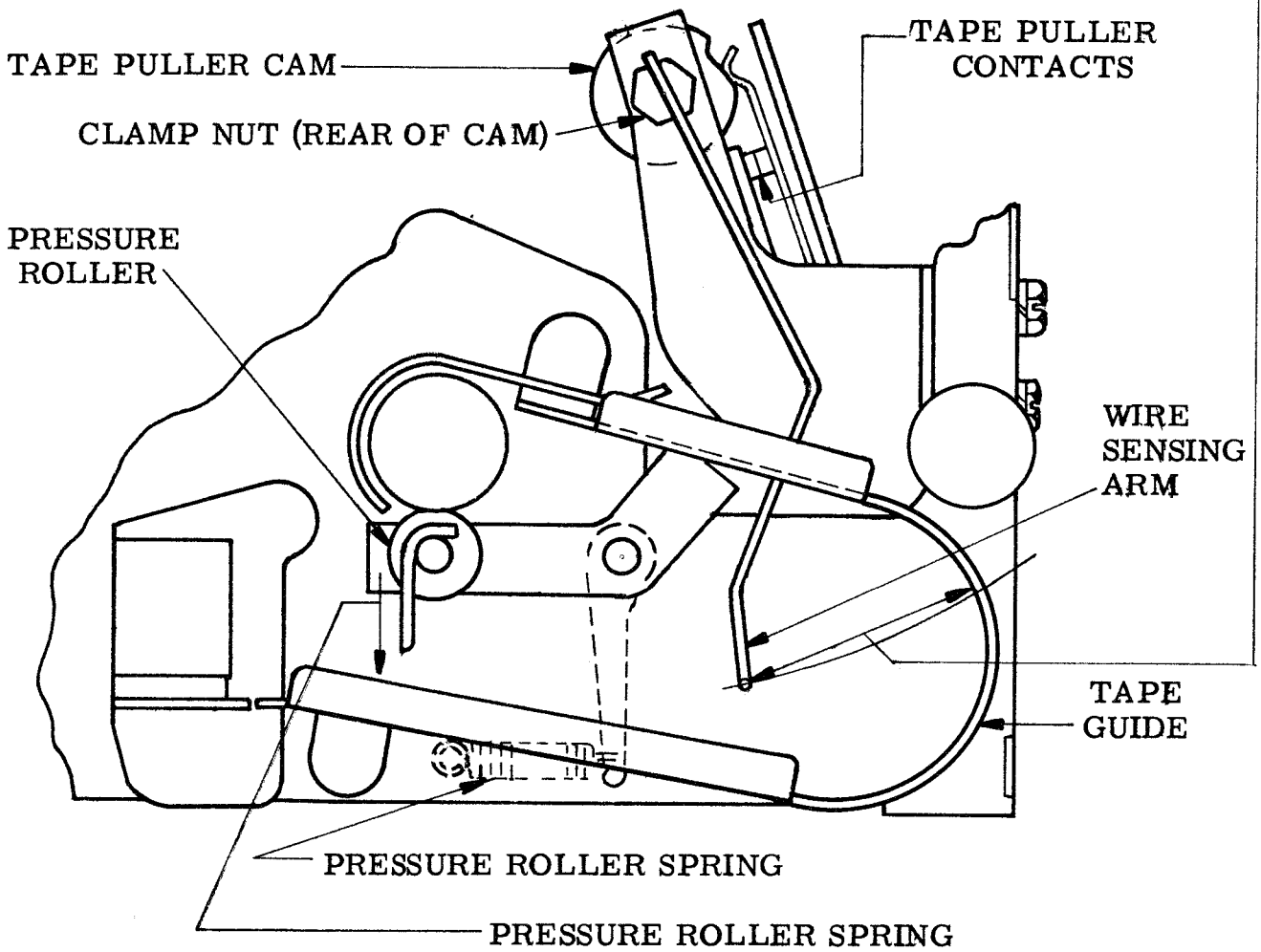
TAPE PULLER CAM

Requirement

Tape puller contacts close when sensing arm is approx. 1-5/16 inches from tape guide and open when arm is moved to extreme left.

To Adjust

Rotate tape puller cam with its clamp screw loosened.



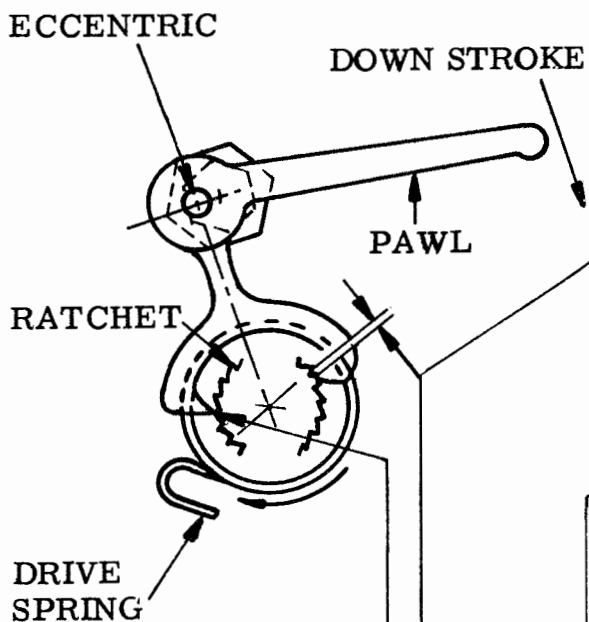
Requirement

Min. 1-1/2 ozs.  
Max. 3-1/2 ozs.  
to start pressure roller moving away from tape puller roller.

FIGURE 3-9.

NOTE: The following adjustment should be made with the feed mechanism assembly removed from the unit. If torque is suddenly released from a fully wound drive spring, permanent damage to the spring will result.

RATCHET AND PAWL ENGAGEMENT  
Requirement



(1) With ratchet under drive spring tension and pawl operated by hand, ratchet shall operate freely through complete revolution.

(2) With ratchet under drive spring tension and pawl operated by hand, ratchet shall make equal steps on up stroke and on down stroke of the pawl as gaged by eye.

(3) It shall not be possible for ratchet to move more than one step with pawl in any position.

To Adjust

With the nut on the eccentric pawl pivot post loosened, use an Allen wrench to rotate the eccentric, keeping eccentric high to the left.

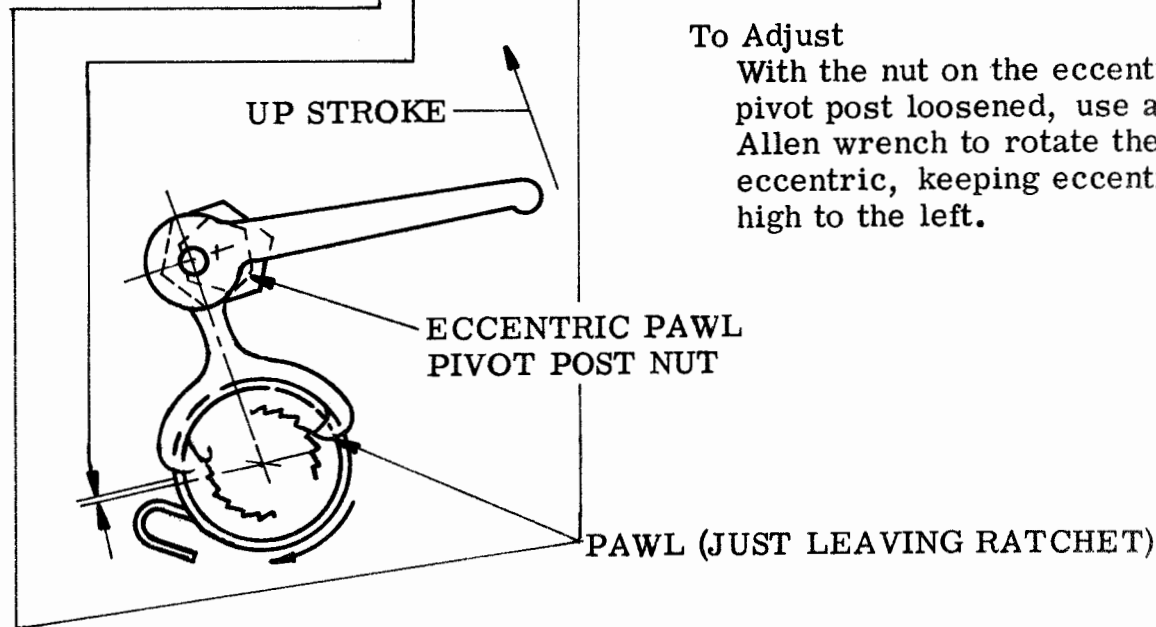


FIGURE 3-10.

TAPE GUIDE CLEARANCE

Requirement

At the closest point, as gaged by eye, between the feed wheel and conforming tape guide, the clearance shall be

- Min. 0.004 inch
- Max. 0.012 inch

To Adjust

With tape guide mounting bracket screws and eccentric stop bushing screw loosened friction tight, position bracket right or left at pry point and rotate eccentric stop bushing.

FEED PUNCH PIN PENETRATION

NOTE: The feed mechanism assembly should be removed from the unit before adjusting.

Requirement

With feed level perforating tape at operating speed and tape drawn through unit by hand, edges of holes shall be clean cut without impressions or punch pin marks on spaces between holes.

To Adjust

With magnet bracket mounting screws loosened friction tight, rotate eccentric bushing, keeping eccentric high pointed away from lower mounting screw.

YIELD SPRING

Requirement

- Min. 7-1/2 ozs.
  - Max. 9-1/2 ozs.
- to start feed wheel moving away from its stop.

ECCENTRIC STOP BUSHING SCREW

FEED WHEEL

TAPE GUIDE

PRY POINT

YIELD SPRING

TAPE GUIDE BRACKET MOUNTING SCREWS

TAPE GUIDE SPRING

Requirement

- Min. 7 ozs.
  - Max. 9 ozs.
- to start tape guide moving away from its stop.

ECCENTRIC BUSHING

MAGNET BRACKET MOUNTING SCREWS

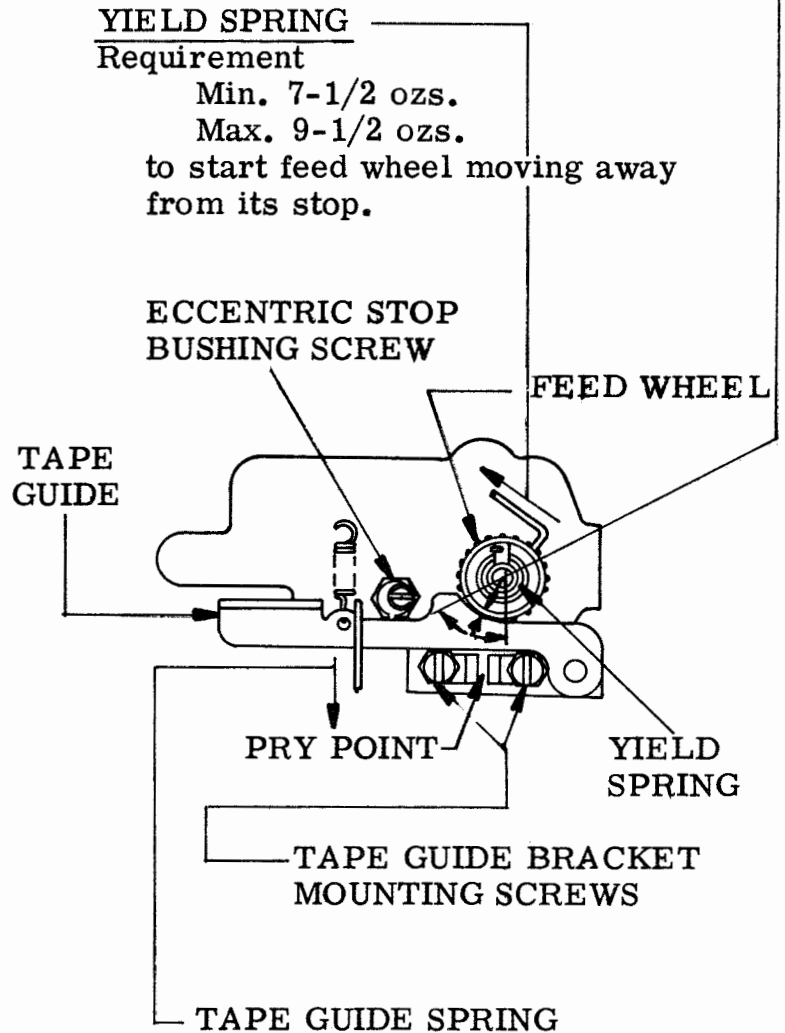
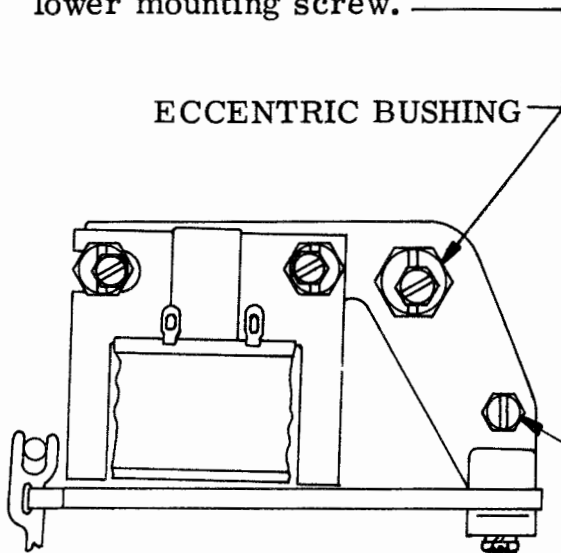


FIGURE 3-11.

FEED MECHANISM - VERTICAL POSITION

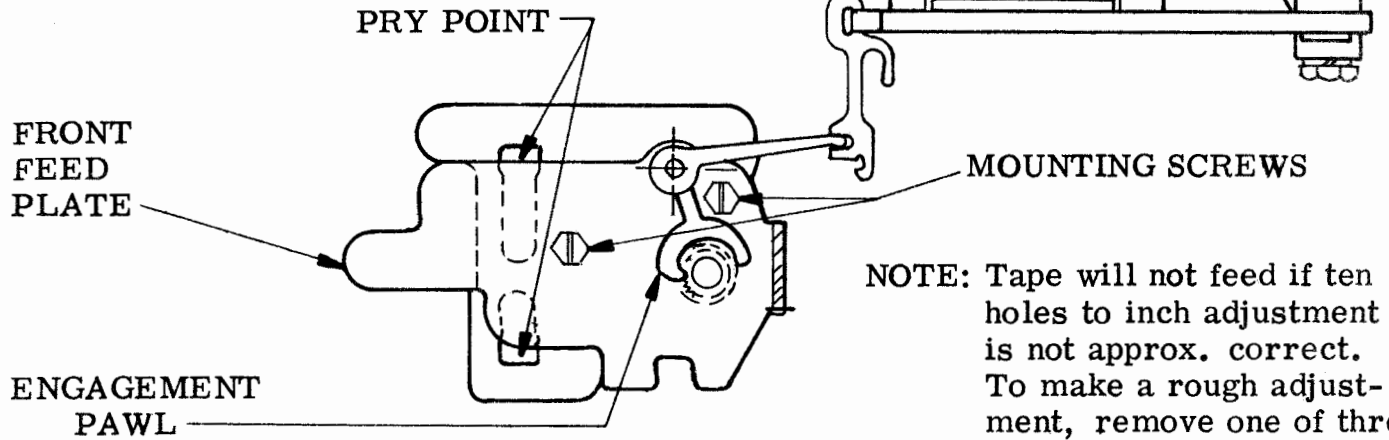
NOTE: Feed mechanism assembly should be assembled on unit.

**Requirement**

When operating without tape at 1000 WPM, feed wheel shall index properly when light pressure is applied upward or downward on escapement pawl with finter.

**To Adjust**

With its mounting screws loosened, position front feed plate vertically at pry point.



NOTE: Tape will not feed if ten holes to inch adjustment is not approx. correct. To make a rough adjustment, remove one of three feed mechanism mounting screws and center the tapped hole in the elongated slot by eye.

CODE PUNCH PIN PENETRATION (FINAL)

**Requirement** (See NOTE if tape does not feed)

At operating speed with no levels marking, add one level at a time. The holes of each level shall be clean-cut with no impression or punch pin marks on spaces between holes.

**To Adjust**

With magnet bracket mounting screws loosened friction tight, rotate eccentric bushing, keeping eccentric high pointed away from lower mounting screw.

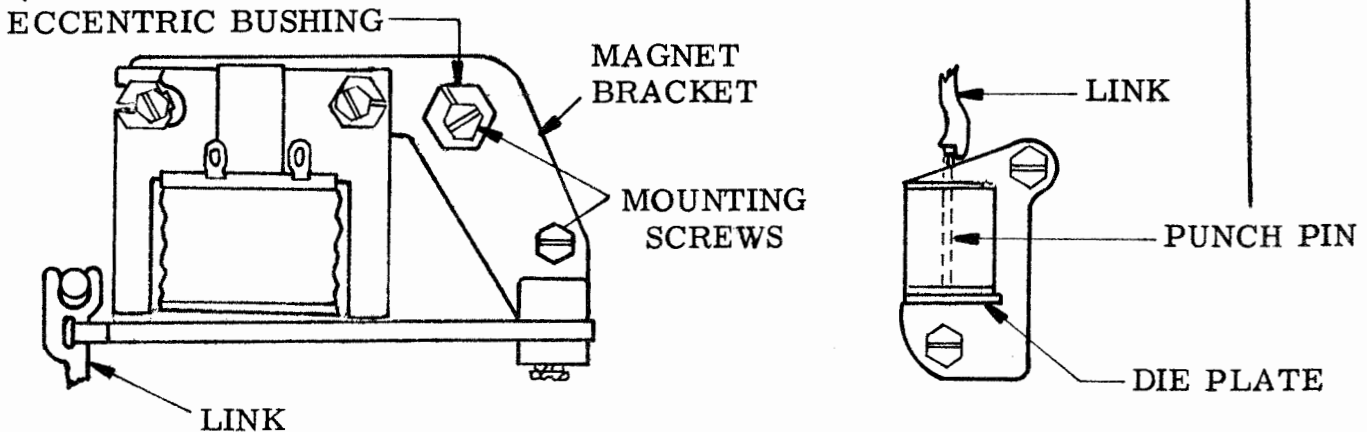
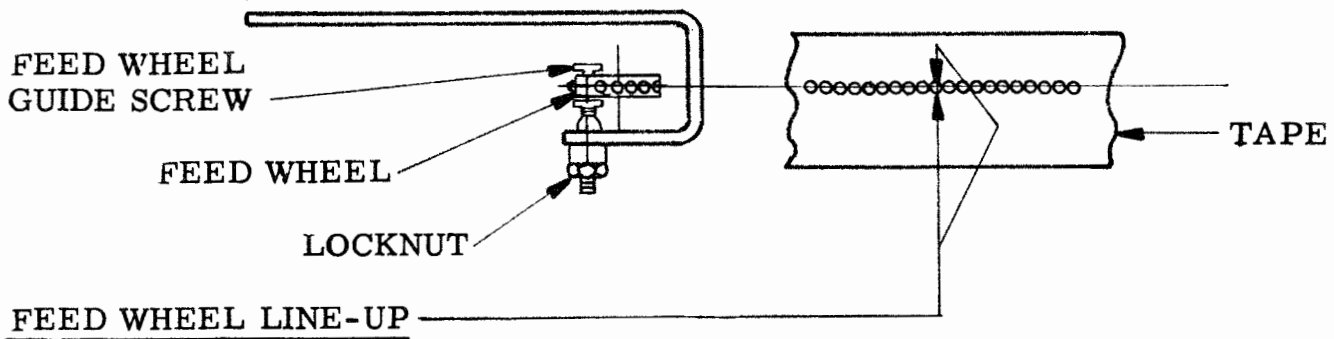


FIGURE 3-12.



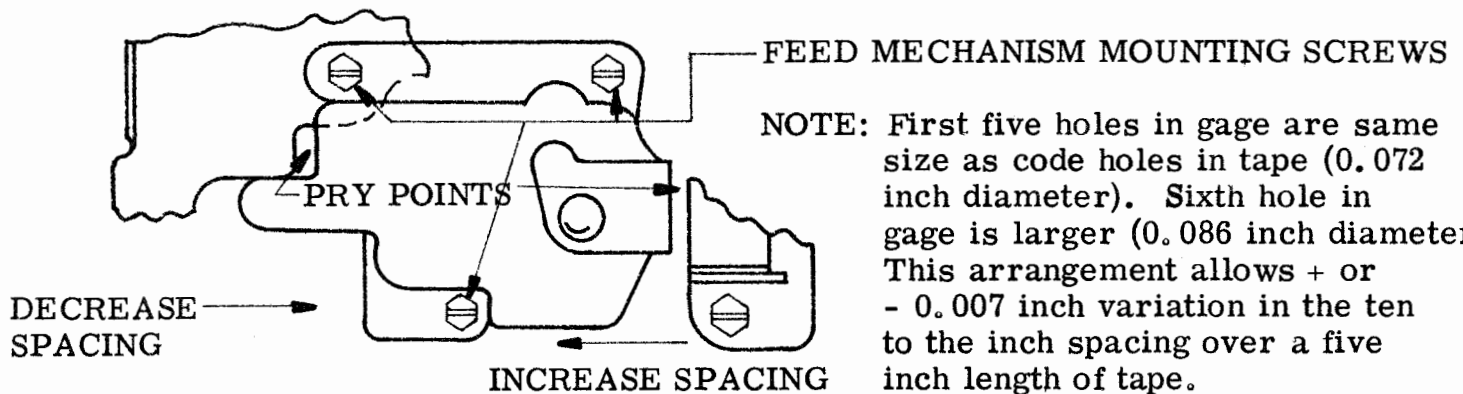
FEED WHEEL LINE-UP

Requirements

No burr on front or rear edge of tape feed holes when tape is perforated at rated operating speed.

To Adjust

With an Allen wrench, rotate feed wheel guide screw with its lock nut loosened.



TEN TO THE INCH ADJUSTMENT  
(TAPE FEED HOLES SPACING)

Requirement

- a. The punch shall produce tape that conforms to 95960 Tape Gage.
- b. To measure: With all code levels perforating, perforate at least 5 inches of tape. Place tape over smooth side of gage so that first number 2 code hole in tape is concentric with first (0.072) hole of gage (See NOTE). The next 4 (0.072) holes in gage shall be visible through the number 2 code holes in tape and the sixth number 2 code hole in tape shall be entirely within 0.086" diameter hole in tape gage.

To Adjust

With a screw driver, pry the feed mechanism with its mounting screws loosened friction tight, to the right to decrease and to the left to increase the spacing.

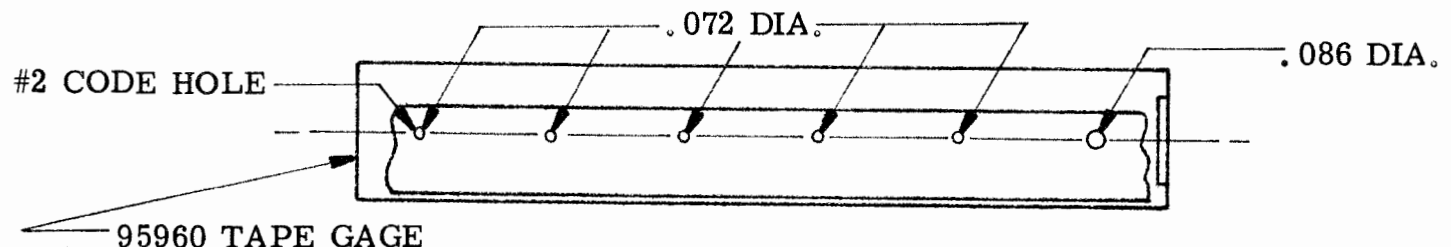


FIGURE 3-13.

### TAPE BIAS SPRING

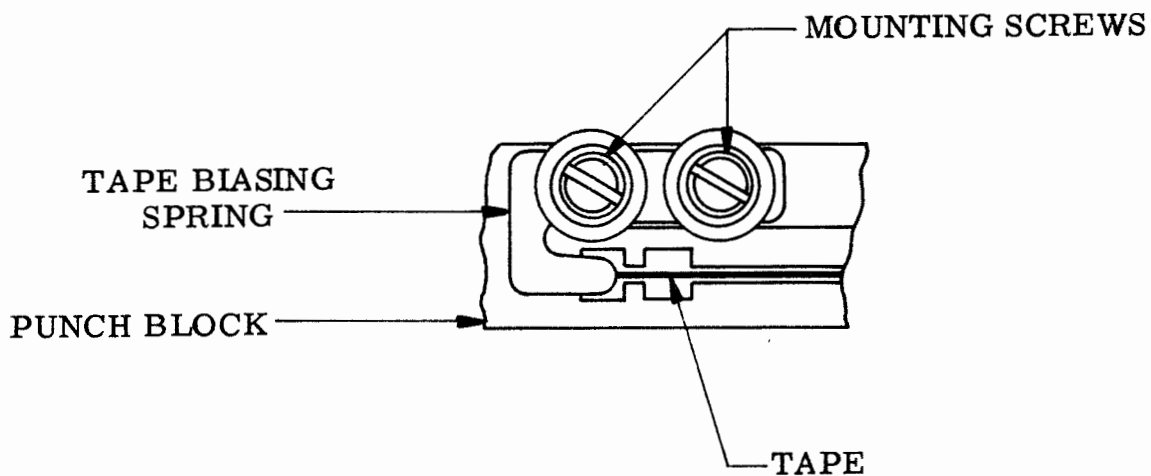
#### Requirement

- (1) Spring shall bias tape towards rear of punch block without crimping, curling or damaging front edge of tape.
- (2) Perforate 3 or 4 foot sample of tape with all code levels marking. With one end of tape held at eye level, sight down tape. There shall be no wavering in alignment of perforations with respect to edge of tape.

#### To Adjust

Position bias spring with its mounting screws loosened.

NOTE: Spring must not bind against lower guide plate or die plate.



RIGHT SIDE VIEW

FIGURE 3-14.

SECTION 4  
LUBRICATION

1. GENERAL

The oil and grease specified in Paragraph 2. below should be used to lubricate the Teletype High Speed Tape Punch. Use oil for lubrication at all of the places listed, except where the use of grease is specified. Oil both loops of all helical springs that exert a nominal tension of less than 2-1/2 lbs. Apply grease to both loops of helical springs that exert a nominal tension of 2-1/2 lbs. or more (not applicable to DRPE).

2. LUBRICATION

- a. Use KS7470 Oil and 143484 Grease when lubricating this unit.

NOTE

143484 is a one pound can of grease. The same grease packaged in a tube is 145867.

- b. Unless otherwise specified, one or two drops of oil of 1/64" coating of grease at each of the places indicated should be sufficient.

- c. The lubrication interval shall be as follows:

<u>Speed of Operation</u>	<u>*Hours Between Lubrication</u>	<u>*Time</u>
100 wpm	2000	6 Months
500 wpm	400	3 Months
1000 wpm	200	2 Months
1500 wpm	150	1-1/2 Months
2000 wpm	100	1 Month

\*Whichever occurs first

d. Lubricating Points

- (1) Saturate all felt washers, wicks and bronze oilite bearing with oil.
- (2) The reed tips and links are to be coated with grease.
- (3) Apply several drops of oil to the feed wheel shaft.

- (4) Coat the ratchet and feed pawl with grease.
- (5) Link guide and guide posts should be coated with grease.
- (6) The gear teeth on the spring winder assembly should be coated with grease.